

IDAHO ADMINISTRATIVE BULLETIN

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August 7, 1996

Volume 96-8

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IDAPA 17 - INDUSTRIAL COMMISSION
17.04.01 - GENERAL SAFETY AND HEALTH STANDARDS CODE 1
DOCKET NO. 17-0401-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 21, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

This is the proposed repeal of IDAPA 17.04.01, General Safety and Health Standards Code 1, originally promulgated by the Industrial Commission in 1983.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Division of Industrial Safety, at (208) 334-3950.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 23rd day of April, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

IDAPA 17
TITLE 04
Chapter 01

GENERAL SAFETY AND HEALTH STANDARDS CODE 1

THIS RULE IS REPEALED IN ITS ENTIRETY;

**It is being replaced with the text in the dockets
immediately following this docket**

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.01 - GENERAL SAFETY AND HEALTH STANDARDS-GENERAL PROVISIONS
DOCKET NO. 17-1001-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 21, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards deals with legal authority, written interpretation, administrative appeals, and abbreviations for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 017-1001-9601

IDAPA 17
TITLE 10
Chapter 01

17.10.01 - GENERAL SAFETY AND HEALTH STANDARDS -- GENERAL PROVISIONS

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, Chapter 01, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72-508, 72-720, 72-721, 72-722, and 72-723, Idaho Code. ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 01, General Safety and Health Standards 00 General

Provisions. For purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as defined in Sections 72-105 and 72-207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing his official duties. ()

02. City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteer. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department or such organization is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service of a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72-722 and 72-714 through 72-718, Idaho Code. ()

004. -- 009. (RESERVED).

010. DEFINITIONS.

For purposes of IDAPA 17, Title 10, the following definitions are applicable throughout this standard. ()

01. Appointed. To assign specific responsibilities by employer or the employer's representative. ()

02. Approved. Accepted by the Industrial Commission or the Division of Building Safety by reasons of tests or investigations conducted by the Commission or the Department based on nationally accepted test standards or principles. ()

03. Authority Having Jurisdiction. The Idaho Industrial Commission and its delegated authority, the Idaho Division of building Safety. ()

04. Authorized Person. A person approved or assigned by the employer to perform a specific type of duty or duties or to be a specific location or locations at the job site. ()

05. Automatic. Providing a function without the necessity of human intervention. ()

06. Commission. The Industrial Commission of the state of Idaho. ()

07. Competent Person. One who is capable of identifying existing and predictable hazards in the

surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them. ()

08. Department. The Division of Building Safety. ()

09. Designated. To be selected or assigned by the employer or the employer's representative as being qualified to perform specific duties. ()

10. Director. The Administrator, Division of Building Safety. ()

11. Employer. Any city, county, school district, other municipal corporations, public corporations, other political subdivisions, and the state: Provided that any person, partnership or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee. ()

12. Enforcing Agency. The Idaho Industrial Commission and the Idaho Division of Building Safety. ()

13. Equivalent Entity. A person or organization (including the employer) which, by possession of equipment, technical knowledge, and skills, can perform with equal competence the same repairs and tests as the person or organization with which it is equated. ()

14. Exposed to Contact. The location of an object is so accessible that a worker may, in the course of employment, come into contact with the object and be injured. ()

15. Fire Resistance Rating. The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as established in accordance with test procedures of Standard Methods of Fire Tests of Building Construction and Materials (NFPA 251). ()

16. Hazard. That condition, potential or inherent which can cause injury, death, or occupational disease. ()

17. Hazardous Areas. Areas of structures, buildings or parts thereof used for purposes that involve highly combustible, highly flammable, or explosive products or materials which are likely to burn with extreme rapidity or which may produce poisonous fumes or gases, including highly toxic or noxious alkalies, acids, or other liquids or chemicals which involve flame, fume, explosive, poisonous or irritant hazards; also uses that cause division of material into fine particles or dust subject to explosion or spontaneous combustion, and uses that constitute a high fire hazard because of the form, character, or volume of material used. ()

18. Listed and Listing. Terms which refer to equipment which is shown in a list published by an approved testing agency, qualified and equipped for experimental testing and maintaining an adequate periodic inspection of current productions and whose listing states that the equipment complies with nationally recognized safety standards. ()

19. Model Code. Any nationally recognized code or standard. ()

20. Qualified. A person who by possession of a recognized degree, certificate or professional standing or who by extensive knowledge, training and experience has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work or the project. ()

21. Safety Factor. The ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress or safe load when in use. ()

22. Shall. Mandatory. ()

23. Should. Recommended. ()

24. Standard Safeguard. A device designed and constructed with the object of removing the hazard of accident incidental to the machine, appliance, tool, building, or equipment to which it is attached. Standard safeguards shall be constructed of either metal, wood, plastics, or other suitable material or a combination of these. The final determination of the sufficiency of any safeguard rests with the Director through the Industrial Safety Section. ()

25. Substantial. Constructed of such strength, of such material and of such workmanship that the object referred to will withstand all normal wear, shock, and usage. ()

26. Suitable. That which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance. ()

27. Training. The process of making proficient through instruction and hands-on practice in the operation of equipment, including personal protection equipment, that is expected to be used and in the performance of assigned duties. ()

28. Volunteer, Worker, Personnel, Person, Employee and Other Terms of Like Meaning. Unless the context of the provision containing such term indicates otherwise, shall mean an employee or an employer, whether by way of manual labor or otherwise, and every person in this state who is engaged in the employment of, or who is working under the independent contract the essence of which is personal labor for an employer, whether my manual labor or otherwise. ()

29. Workplace. Any plant, yard premises, room or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control. ()

011. -- 012. (RESERVED).

013. ABBREVIATIONS USED IN THIS STANDARD.

For purposes of IDAPA 17, Title 10, these abbreviations are applicable throughout this standard. ()

- 01. ANSI. American National Standards Institute. ()
- 02. APA. American Petroleum Institute. ()
- 03. ASA. American Standards Association. ()
- 04. ASAE. American Society of Agricultural Engineers. ()
- 05. ASHRAE. American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. ()
- 06. ASME. American Society for Mechanical Engineers. ()
- 07. ASTM. American Society for Testing and Materials. ()
- 08. AWS. American Welding Society. ()
- 09. BTU. British thermal unit. ()
- 10. BTUH. British thermal unit per hour. ()
- 11. CFM. Cubic feet per minute. ()
- 12. CFR. Code of Federal Register. (Federal). ()
- 13. CGA. Compressed Gas Association. ()

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| 14. | CIE. Commission Internationale de L'Eclairage. | () |
| 15. | DBS. Division of Building Safety. | () |
| 16. | DOT. Department of Transportation (Federal). | () |
| 17. | FRP. Fiberglass reinforced plastic. | () |
| 18. | GFCI. Ground-fault circuit interrupter. | () |
| 19. | GPM. Gallons per minute. | () |
| 20. | IDAPA. 17.10. Idaho Safety and Health Standard. | () |
| 21. | ICC. Interstate Commerce Commission. | () |
| 22. | IME. Institute of Makers of Explosives. | () |
| 23. | ID. Inside diameter. | () |
| 24. | LPG. Liquefied petroleum gas. | () |
| 25. | LSC. Life Safety Code 101. | () |
| 26. | MCS. Manufacturing Chemist Association. | () |
| 27. | MSHA. Mine Safety and Health Act. | () |
| 28. | NBFU. National Electrical Manufacturing Association. | () |
| 29. | NEC. National Electrical Code. | () |
| 30. | NEMA. National Electrical Manufacturing Association. | () |
| 31. | NFPA. National Fire Protection Association. | () |
| 32. | NIOSH. National Institute of Occupational Safety and Health. | () |
| 33. | NTP. Normal temperature and pressure. | () |
| 34. | OD. Outside diameter. | () |
| 35. | OSHA. Occupational Safety and Health Administration. | () |
| 36. | PSI. Pounds per square inch. | () |
| 37. | PSIA. Pounds Per square inch atmospheric. | () |
| 38. | PSIG. Pounds per square inch gauge. | () |
| 39. | RMA. Rubber Manufacturers Association. | () |
| 40. | SAE. Society of Automotive Engineers. | () |
| 41. | TFI. The Fertilizer Institute. | () |
| 42. | TSC. Trailer Standard Code. | () |

- 43. UBC. Uniform Building Code. ()
- 44. UL. Underwriters Laboratories. ()
- 45. USASI. United States of America Standards Institute. ()
- 46. USC. United States Code. ()
- 47. USCG. United States Coast Guard. ()

014. (RESERVED).

015. EQUIPMENT APPROVAL BY NON-STATE AGENCY OR ORGANIZATION.

Whenever a provision of this standard states that only that equipment or those processes approved by an agency or organization other than the Idaho Industrial Commission and the Idaho Department of Labor and Industrial Services, such as Underwriters Laboratories or the Bureau of Mines, shall be utilized, that provision shall be construed to mean that approval of such equipment or process by the designated agency or group shall be prima facie evidence of compliance with the provisions of this section. ()

016. INCORPORATION OF STANDARDS OF NATIONAL ORGANIZATION.

For purposes of IDAPA 17, Title 10, whenever a provision of this code incorporates by reference a national code or portion thereof which has been adopted by and is currently administered by another state agency, compliance with those provisions adopted and administered by such other state agency, if from a more recent edition of such national code, will be deemed to be prima facie evidence of compliance with provisions of this section. ()

017. EXTENSION OF TIME.

For purposes of IDAPA 17, Title 10, an extension of time to comply with the safety and health requirements of this code and any amendments that may be added from time to time may be granted up to sixty (60) days. Approval of the extension may be granted by the enforcing agency, upon good cause shown. Such extension of time granted shall be limited to the particular case or cases covered in the letter or extension and may be revoked for cause. All requests for an extension of time shall be made in writing to the administrator of the Idaho Division of Building Safety, 277 North 6th Street, Boise, Idaho 83720-0049. ()

018. CONFLICTS.

For purposes of IDAPA 17, Title 10, where there is a conflict between in general requirement and a specific requirement for an individual occupancy, the specific requirement shall be applicable. ()

019. -- 999. (RESERVED).

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.03 - GENERAL SAFETY AND HEALTH STANDARDS-SAFE PLACE STANDARDS
DOCKET NO. 17-1003-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 28, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards dealing with safe working conditions and first aid requirements for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 17-1003-9601

IDAPA 17
TITLE 10
Chapter 03

17.10.03 - GENERAL SAFETY AND HEALTH STANDARDS -- SAFE PLACE STANDARDS

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72-508, 72-720, 72-721, 72-722, and 72-723, Idaho Code ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 3, General Safety and Health Standards -- Safe Place

Standards. For purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as defined in Sections 72-205 and 72-207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts, and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing their official duties. ()

02. County/City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteers. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department or such organization is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service of a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72-722 and 72-714 through 72-718, Idaho Code. ()

004. -- 029. (RESERVED).

030. SAFE PLACE STANDARDS.

01. Scope: This chapter includes and applies to all places of employment and work sites covered by this standard. ()

02. Definitions. For definitions of terms used in this Section, see IDAPA 17.10.01.010. ()

03. General Requirements: ()

a. Each employer shall furnish to each employee a place of employment free from recognized hazards that are causing or likely to cause serious injury or death to his employees. Recognized hazards are those identified by this standard, other state adopted codes, nationally recognized model codes and standards, and OSHA, except as expressly stated in IDAPA 17.10. ()

b. Every employer shall furnish and use safety devices and safeguards and shall adopt and use practices, means, methods, operations, and processes which are adequate to render such place of employment safe and without occupational health hazards. ()

c. Every employer shall post warning signs, as required within this Standard, in areas where employees are exposed to injury hazards and shall insure that employees comply with the posted warnings. ()

- d. No employer shall require any employee to go or be in any place of employment which is not safe. ()
- e. No employer shall fail or neglect: to provide and use safety devices and safeguards; to adopt and use methods and processes adequate to render the place of employment safe. ()
- f. No employer, owner or lessee of any real property shall construct or cause to be constructed any place of employment which does not meet the minimum safety requirements of this standard, other state adopted codes, and nationally recognized model codes. ()
- g. No person shall do any of the following: remove, displace, damage, destroy or carry off any safety device, safeguard, notice or warning furnished for use in any place of employment, or interfere in any way with the use thereof by any other person. ()
- h. Intoxicating beverages and narcotics shall not be permitted or used in or around work sites. Workers under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others. ()
- i. No employer shall permit an employee to work alone in an unsafe or hazardous place, unless he is within calling distance of another person who can provide assistance. ()
- j. Employees shall not indulge in horseplay, scuffling, practical jokes, or any activity which creates or constitutes a hazard while on the employer's property, at a work site, or at any time when being transported from or to work in facilities furnished by the employer. ()
- k. Employees who are assigned to or engaged in the operation of any machinery or equipment, shall see that all guards, hoods, safety devices, etc., that are required are in proper place and properly adjusted. ()
04. Transportation of Employees on the Job: ()
- a. Transportation of employees on the job, shall be in equipment that is adequate and properly equipped for that purpose. ()
- b. Vehicles used for the transportation of employees shall have seats which shall be properly secured and shall be provided in each vehicle to accommodate the total number of employees transported, except in case of emergency situations and conditions. ()
- c. When it is necessary, under emergency conditions, to transport more than the seating capacity in the vehicle, all employees not having seats must ride within the vehicle. Transportation of employees shall be in vehicles with safe floors and adequate ventilation. ()
- d. Under no circumstances shall employees ride on fenders, bumpers, or running boards. ()
- e. An employee shall not ride in or on any vehicle with his legs hanging over the end or sides. ()
- f. If tools and/or material are transported in vehicles used for transportation of employees at the same time employees are being transported, the tools and/or material shall be adequately secured to present no hazard to passengers. ()
- g. No one shall board or leave moving equipment except those whose duties require such and only after having been properly trained. ()
- h. When a stake bed truck is used to transport employees, it shall be equipped with seats and tailgate. ()

i. Only qualified drivers shall be permitted to operate motor vehicle and each shall possess a valid driver's license. ()

j. All motor vehicles shall meet the requirements of Title 49, Chapter 9, Idaho Code. ()

k. All motor vehicles will be maintained in a safe and operable condition at all times, unless disabled and not in use. ()

05. General Training Requirements. It shall be the responsibility of the employer to establish and supervise a safe and healthful working environment, an accident-prevention program as required by these standards, and training programs to improve the skill and competency of all employees in the field of safety and occupational health. Such training shall include on-the-job instruction on the safe use of powered materials handling equipment, machine tool operations, use of hazardous/toxic materials and operation of utility systems prior to assignments to jobs involving such exposures. ()

06. Employee's Responsibility. It shall be the responsibility of the employees to coordinate and cooperate with all other employees in an attempt to eliminate accidents; to study and observe all safety practices governing their work; to offer safety suggestions, wherein such suggestions may contribute to a safer work environment; to apply the principles of accident prevention in their daily work and to use proper safety devices and protective equipment as required by their employment or employer; to properly care for all personal protective equipment; and to make a prompt report to their immediate supervisor of each job connected injury or occupational illness, regardless of the degree of severity. ()

031. FIRST AID REQUIREMENTS AND EQUIPMENT.

01. Scope: This section includes and applies to all places of employment and work sites covered by this standard. ()

02. Definitions. For definitions of terms used in this Section, see IDAPA 17.10.01.010. ()

03. General Requirements: ()

a. First aid kits shall be made available and accessible to all employees. ()

b. Employees shall seek appropriate first aid or medical treatment immediately upon receiving an injury, even though it be minor. Employees shall report all injuries to their supervisor promptly. ()

c. Suitable means of transportation shall be available in the event any employee is injured; said transportation to be equipped with appropriate facilities and first aid supplies. ()

d. Every employer shall arrange suitable telephone or radio communication at the nearest reasonable point and shall work out a definite procedure to be followed in the event of serious injury to any employee. Instructions covering this procedure shall be made available to all employees/ work crews. When practicable, a poster shall be fastened and maintained either on or in the cover of each first aid cabinet, and at or near all phones, plainly stating the phone numbers of available doctors, hospital, and ambulance services within the district of the place of employment. Employees should be informed of the emergency telephone number 911 or other number as applicable. ()

e. A sufficient number of employees and supervisors, such as foremen, assistant foremen, or persons in direct charge of crews, shall be trained in first aid treatment of injuries and cardiopulmonary-resuscitation (CPR) and shall hold a current, recognized first aid card. Any crew shall have at least a minimum of two (2) persons trained in first aid available at all times. First aid training is required for employees working with hazardous machinery or materials or as crews at remote or isolated locations. Persons working where there is an emergency medical response capability are not required first aid training; however, it is recommended. ()

f. When one or more employees are exposed to remote or isolated jobs where first aid supplies, first aid stations and their equivalent are not readily accessible and available, employees shall have immediate accessibility

to not less than a ten (10)-unit first aid kit. All state, city and county vehicles shall have a first aid kit. ()

g. All vehicles used for transporting employees shall be equipped with not less than a ten (10)-unit first aid kit. When more than five employees are being transported on any one trip, the kit shall be increased in size to comply with a sixteen (16), twenty-four (24) or thirty-six (36)-unit kit, depending upon the number of personnel normally being transported. Exception: Administrative vehicles that are being operated within a 911 emergency calling area. ()

h. The size and quantity of first aid kits required to be located at any work site shall be determined by the number of personnel normally dependent upon each kit as outlined in Table 031.03-A. Items are to be related to the possible hazards of the place of employment. ()

| TABLE 031.03-A | |
|--|--|
| FIRST AID KIT REQUIREMENTS | |
| No. of personnel normally assigned to the workplace | Minimum first aid kit required at the workplace |
| 1 - 5 | 10 unit kit |
| 6 - 15 | 16 unit kit |
| 16 - 30 | 24 unit kit |
| 31 - 50 | 36 unit kit |
| 51 - 75 | one 36 and one 10 unit kit |
| 76 - 100 | one 36 and one 16 unit kit |
| 101 - 150 | one 36 and one 24 unit kit |
| 151 - 200 | two 36 unit kits |

i. Employers shall establish a procedure to assure that first aid kits and required contents are maintained in a serviceable condition. ()

j. First aid kits shall conform to the requirements of ANSI Standard Z308.1. and contain at least the following items or an approved equivalent. First aid kit contents may be substituted to meet unique job specific requirements when approved by a qualified person. ()

k. First aid kits shall be regularly inspected to ensure completeness and to check the condition of the contents. ()

l. Items other than first aid materials shall not be stored in the first aid kit. ()

m. First aid kits shall be maintained at the ten (10), sixteen (16), twenty-four (24), or thirty-six (36) unit level. ()

n. Ten (10) package kit: one (1) package adhesive bandages, one inch (1") (sixteen (16) per package); one (1) package bandage compress, four inches (4") (one (1) per package); one (1) package scissors and tweezers (one (1) each per package); one (1) package triangular bandage, forty inches (40") (one (1) per package); one (1) package antiseptic soap or pads (three (3) per package); one (1) micro shield, one (1) pair latex gloves; four (4) packages of choice when approved by a qualified person. ()

o. Sixteen (16)-package kit: one (1) package absorbent gauze, twenty-four (24") x seventy-two (72") (one (1) per package); one (1) package adhesive bandages, one (1") (sixteen (16) per package); two (2) packages bandage compresses, four (4") (one (1) per package); one (1) package eye dressing (one (1) per package); one (1) package scissors and tweezers (one (1) each per package); two (2) packages triangular bandages, forty (40") (one (1) per package); one (1) package antiseptic soap or pads (three (3) per package); one (1) micro shield, one (1) pair latex gloves; six (6) packages of choice when approved by a qualified person. ()

p. Twenty-four (24)-package kit: two (2) packages absorbent gauze, twenty-four (24") x seventy-two (72") (one (1) per package); two (2) packages adhesive bandages, one (1") (sixteen (16) per package); two (2) packages bandage compresses, four (4") (one (1) per package); one (1) package eye dressing (one (1) per package); one (1) package scissors and tweezers (one (1) each per package); six (6) packages triangular bandages (one (1) per package) one (1) package antiseptic soap or pads (three (3) per package); one (1) micro shield, two (2) pair latex gloves; eight (8) packages of choice when approved by a qualified person. ()

q. Thirty-six (36)-package kit: four (4) packages absorbent gauze, twenty-four (24") x seventy-two (72") (one (1) per package); two (2) packages adhesive bandages, one (1") (sixteen (16) per package); five (5) packages bandage compresses, four (4") (one (1) per package); two (2) packages eye dressing (one (1) per package); eight (8) packages triangular bandages, forty (40") (one (1) per package); one (1) package antiseptic soap or pads (three (3) per package); two (2) micro shield, three (3) pair latex gloves; one (1) package scissors and tweezers; eleven (11) packages of choice when approved by a qualified person. ()

r. First aid kits shall be in metal or other sanitary containers. Such containers shall be so designed and so constructed as to be impervious to any existing conditions of weather, dust, dirt, or other foreign matter. Contents shall be sterile. ()

s. Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided, within the work areas, for emergency use. Each emergency shower location shall be identified with a highly visible sign. The area around the emergency shower shall be well-lighted and highly visible. Facilities for quick drenching or flushing shall meet the requirements of ANSI Standard Z358.1. ()

t. The Industrial Commission and/or the Department may require the installation of a first aid room or first aid station on operations where a study of various factors involved indicates the need therefor. Factors to be considered are the number of employees employed, location and nature of the work being performed, and the availability of established medical facilities. ()

u. First aid rooms and first aid stations shall be well lighted, ventilated; clean, and orderly. ()

v. First aid rooms shall be equipped with hot and cold running water or a means to heat water, and with a cot, blankets, and pillows. If both men and women are employed, a means shall be provided to furnish privacy for each. ()

w. A stretcher, designed for and/or adaptable to the work locations and terrain, and two blankets kept in sanitary and serviceable condition shall be available where such conditions are a factor in the transportation of, and first aid to, an injured employee, inmate, or volunteer worker, subject to this standard. ()

032. -- 999. (RESERVED).

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.04 GENERAL SAFETY AND HEALTH STANDARDS-EGRESS STANDARDS
DOCKET NO. 17-1004-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 21, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards dealing with means of egress, illumination of egress, emergency lighting, confined space entry, and excavation for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 17-1004-9601

IDAPA 17
TITLE 10
Chapter 04

17.10.04 - GENERAL SAFETY AND HEALTH STANDARDS -- EGRESS STANDARDS

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72-508, 72-720, 72-721, 72-722, and 72-723, Idaho Code ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 04, General Safety and Health Standards -- Egress

Standards. For purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as defined in Sections 72-205 and 72-207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts, and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing their official duties. ()

02. County//City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteers. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department or such organization is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service of a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72-722 and 72-714 through 72-718, Idaho Code. ()

004. -- 039. (RESERVED).

040. MEANS OF EGRESS, GENERAL.

01. Scope: Every facility, building, structure, or portion thereof shall be provided with exits as required by this section. Where there is a conflict between a general requirement and a specific requirement for an individual occupancy, the specific requirement shall be applicable. ()

02. Definitions. For other definitions of terms used in this Section, see IDAPA 17.10.01.010. ()

a. Approved, for the purpose of these standards, shall mean listed or approved equipment by a nationally recognized testing laboratory. ()

b. Exit is a continuous and unobstructed means of egress to a public way and shall include intervening aisles, doors, doorways, gates, corridors, exterior exit balconies, ramps, stairways, smoke-proof enclosures, horizontal exits, exit passage ways, exit courts, and yards. ()

c. Exit Court is a yard or court providing access to a public way for one (1) or more required exits. ()

d. Exit Discharge is that portion of a means of egress between the termination of an exit and a public way. ()

e. Horizontal Exit is an exit from one building into another building on approximately the same level or, through or around a wall constructed as required for a two (2)-hour occupancy separation and which completely divides a floor into two (2) or more separate areas so as to establish an area of refuge affording safety from fire or smoke coming from the area from which escape is made. ()

f. Occupant Load is the total number of persons that may occupy a facility, building or portion thereof at any one time. In determining the occupant load of a facility, building, or structure, all portions shall be presumed to be occupied at the same time. Accessory use areas which ordinarily are used by persons who occupy the main area of the facility or building shall be provided with exits as though they are completely occupied, but their occupant load need not be included in computing the total occupant load of the facility or building. ()

g. Panic Hardware is a door latching assembly incorporating an unlatching device, the activating portion of which extends across at least one-half (1/2) the width of the door leaf on which it is installed. ()

h. Low Hazard Contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur and that consequently, the only probable danger requiring the use of emergency exits will be from panic, fumes, smoke, or fire from some external source. ()

i. High-Hazard Contents shall be classified as those which are likely to burn with extreme rapidity or from which poisonous fumes or explosives are to be feared in the event of fire. ()

j. Ordinary Hazard Contents shall be classified as those which are likely to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosives are to be feared in case of fire. ()

k. Public Way is any street, alley, or similar parcel of land essentially unobstructed from the ground to the sky deeded, dedicated, or otherwise permanently appropriated to the public for the public use and having a clear width of not less than ten (10) feet. ()

l. Tight Fitting means, upon full closure, a swinging door shall have a minus one sixteenth (1/16) inch tolerance, one eighth (1/8) inch along the top, one eighth (1/8) inch along the bottom, one eighth (1/8) inch along the hinge and latch jambs, one eighth (1/8) inch along the meeting edge of doors in pairs, and three-eighths (3/8) inch at the bottom edge of a single swing door, and one fourth (1/4) inch at the bottom of a pair of doors. ()

03. General Requirements: ()

a. This section contains general fundamental requirements essential to providing a safe exiting from facilities, buildings, or structures during fire and like emergencies. Nothing in the standards shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in this section. Exits from vehicles, vessels, or other mobile structures are not covered by this section. ()

b. Every building or structure, new or old, designed for human use shall be provided with exits sufficient to permit the prompt evacuation of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard. Additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure. ()

c. Every facility, building, or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the facility, building, or structure in case of fire or other emergency. ()

d. Every facility, building, or structure shall be provided with exits of kinds, numbers, location, and capacity appropriate to the individual facility, building, or structure, with due regard to the character of the occupancy, the number of persons exposed, the physical disabilities of the persons exposed, the fire protection available, and the

height and type of construction of the facility, building, or structure, to afford all occupants convenient facilities for evacuation. Every facility, building, or structure or usable portion thereof shall have at least one (1) exit, not less than two (2) exits where required by Table 040.03-A, and additional exits as required by this section. ()

| TABLE 040.03-A | | |
|--|---|---|
| MINIMUM EGRESS REQUIREMENTS¹ | | |
| USE² | MINIMUM OF TWO (2) EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS AT LEAST | OCCUPANT LOAD FACTOR³ (sq. ft. per person) (example; 5,000 sf space ÷ 500 (sf per person in Aircraft hangars) = 10 person occupant load factor requiring 2 exits) sf x 0.0920 for meters² (example 500 sf x 0.0920 = 46 meters per person) |
| 1. Aircraft hangars (no repair) | 10 | 500 |
| 2. Auction rooms | 30 | 7 |
| 3. Assembly areas, concentrated use (without fixed seats) Auditoriums Churches and chapels Dance floors Lobby accessory to assembly occupancy Lodge rooms Reviewing stands Stadiums Waiting area | 50 | 7 |
| 4. Assembly areas, less-concentrated use Conference rooms Dining rooms Drinking establishments Exhibit rooms Gymnasiums Lounges Stages | 50 | 15 |
| 5. Bowling alley (assume no occupant load for bowling lanes) | 50 | 4 |
| 6. Children's homes and homes for the aged | 6 | 80 |
| 7. Classrooms | 50 | 20 |
| 8. Congregate residences | 10 | 200 |
| 9. Courtrooms | 50 | 40 |
| 10. Dormitories | 10 | 50 |
| 11. Dwellings | 10 | 300 |
| 12. Exercising rooms | 50 | 50 |
| 13. Garage, parking | 30 | 200 |

| TABLE 040.03-A | | |
|--|---|---|
| MINIMUM EGRESS REQUIREMENTS¹ | | |
| USE² | MINIMUM OF TWO (2) EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS AT LEAST | OCCUPANT LOAD FACTOR³ (sq. ft. per person) (example; 5,000 sf space ÷ 500 (sf per person in Aircraft hangars) = 10 person occupant load factor requiring 2 exits) sf x 0.0920 for meters² (example 500 sf x 0.0920 = 46 meters per person) |
| 14. Hospitals and sanitariums - Health-care center Nursing homes Sleeping rooms Treatment rooms | 10 6 10 | 80 80 80 |
| 15. Hotels and apartments | 10 | 200 |
| 16. Kitchen - commercial | 30 | 200 |
| 17. Library reading room | 50 | 50 |
| 18. Locker rooms | 30 | 50 |
| 19. Malls | - | - |
| 20. Manufacturing areas | 30 | 200 |
| 21. Mechanical equipment room | 30 | 300 |
| 22. Nurseries for children (day care) | 7 | 35 |
| 23. Offices | 30 | 100 |
| 24. School shops and vocational rooms | 50 | 50 |
| 25. Skating rinks | 50 | 50 on the skating area; 15 on the deck |
| 26. Storage and stock rooms | 30 | 300 |
| 27. Stores - retail sales rooms Basements and ground floor Upper floors | 50 50 | 30 60 |
| 28. Swimming pools | 50 | 50 for the pool area; 15 on the deck |
| 29. Warehouses | 30 | 500 |
| 30. All others | 50 | 100 |
| ¹ Access to, and egress from, building for persons with disabilities shall be provided. | | |
| ² For additional provisions on number of exits from Groups H and I Occupancies and from rooms containing fuel-fired equipment or cellulose nitrate. | | |
| ³ This table shall not be used to determine working space requirements per person. | | |
| ⁴ Occupant load based on five persons for each alley, including 15 feet (4572 mm) of runway. | | |

()

e. The second story/floor of a facility, building, or structure shall be provided with not less than two (2) exits when the occupant load is ten or more. ()

f. Occupants on floors above the second story/floor and in basements shall have access to not less than two (2) separate exits from the story/floor or basement. (See IDAPA 17.10.04.040.08.r. for exceptions.) ()

g. In every facility, building, or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the facility, building, or structure at all times when it is occupied. No lock or fastening device to prevent free evacuation from the inside of any room, space, facility, building, structure or portion thereof, shall be installed except in mental, penal, or corrective institutions where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency. ()

h. Every required exit shall be clearly visible and the route to reach it shall be conspicuously marked. Any doorway or passageway not constituting an exit shall be marked "NOT AN EXIT" as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out. ()

i. In every facility, building, or structure equipped for artificial illumination, adequate and reliable illumination shall be provided at all times for all exit systems. ()

j. Where required or provided, fire alarm systems shall be audible and visible in all parts of the facility, building, or structure. ()

k. Cold storage rooms, vaults, safes, storage rooms and other rooms shall have an opening device on all doors that, when locked from the outside, can be opened from the inside without the need for special tools, devices or keys. ()

l. Where a building is made accessible, at least one (1) route of exiting from facilities, buildings, and structures shall be maintained in conformity with the provisions of this standard and the Americans With Disabilities Act Accessibility Guidelines. Exiting routes for persons with disabilities shall connect to an outside area or an area of rescue assistance. An area of rescue assistance shall be one of the following: a portion of a stairway landing within a smoke proof enclosure; a portion of an exterior balcony located immediately adjacent to an exit stairway when the balcony complies with the requirements for exterior exit balconies. (Openings to the interior of the facility, building, or structure located within twenty (20)-feet of the area of rescue assistance shall be protected with fire assemblies having a three fourths (3/4)-hour fire protection rating.); a portion of a one (1)-hour fire-resistive corridor located immediately adjacent to an exit enclosure; a vestibule located immediately adjacent to an exit enclosure and constructed to the same fire-resistive standards as required for corridors and openings; a portion of a stairway landing within an exit enclosure which is vented to the exterior and is separated from the interior of the building with not less than a one-hour fire-resistive door; an area or room which is separated from other portions of the building by a smoke barrier (Smoke barriers shall have a fire- resistive rating of not less than one (1)-hour and shall completely enclose the area or room. Doors in the smoke barrier shall be tight fitting smoke and draft control assemblies having a fire protection rating of not less than twenty (20)-minutes and shall be self closing or automatic closing. The area or room shall be provided with an exit directly to an exit enclosure. Where the room or area exits into an exit enclosure which is required to be of more than one (1)-hour fire resistive construction, the room or area shall have the same fire resistive construction, including the same opening protection as required for the adjacent exit enclosure.); an elevator lobby, when elevator shafts and adjacent lobbies are pressurized (Such pressurization system shall be activated by smoke detectors on each floor). Each area of rescue assistance shall provide at least two (2) accessible areas each being not less than thirty (30)-inches by forty-eight (48)-inches. the area of rescue assistance shall not encroach on any required exit width. A method of two (2)-way communication, with both visible and audible signals, shall be provided between each area of rescue assistance and the primary entry, (The fire official or appropriate local authority may approve a location other than the primary entry. Each area of rescue assistance shall be identified by a sign which states "AREA OF RESCUE ASSISTANCE" and displays the international symbol of accessibility. The sign shall be illuminated when exit signs are also required to be illuminated. Signage shall also be installed at all inaccessible exits and where otherwise necessary to clearly indicate the direction to areas of rescue assistance. In each area of rescue assistance, instructions on the use of the area under emergency conditions shall be posted adjoining the two (2)-way communication system. ()

m. Compliance with IDAPA 17.10.04.040.01 through 040.03 of this section shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a facility, building, or structure under normal occupancy conditions, nor shall any provisions of this section be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions. ()

04. Protection of Employees Exposed by Construction and Repair Operations: ()

a. No facility, building, or structure under construction shall be occupied in total or in part until all exit systems and fire protection required for the part occupied are completed and ready for use. ()

b. No existing facility, building, or structure shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or, in lieu thereof, other measures are taken which provide equivalent safety. ()

c. No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a facility, building, or structure of normally low or ordinary hazard classification while the facility, building, or structure is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the facility, building, or structure. ()

d. Job and construction sites shall have physical barriers to prevent inadvertent site access by non-authorized employees, inmates, students, or the public. Every other action necessary for the safety of employees, inmates, students, and the public shall be taken. ()

05. Maintenance: ()

a. Every required exit and way of travel from the exit into the street or open space, shall be continuously maintained free of all obstructions or impediments to allow full and instant use in the case of fire or other emergency. ()

b. Every automatic sprinkler system, fire detection and alarm system, emergency and exit lighting fixture, fire door, and other item of equipment, where provided, shall be continuously maintained in proper operating condition. (While inoperable, an alternate route must be established to maintain the same level of safety.) ()

06. Permissible Exit Components: ()

a. An exit shall consist only of the approved components. Exit components shall be constructed as an integral part of the facility, building, or structure and shall be permanently affixed thereto. ()

07. Stairway, Ramp, and Escalator Enclosures: ()

a. Interior stairways, ramps, or escalators shall be enclosed as specified in this subsection. EXCEPTIONS: In occupancies other than Hazardous Occupancies and Institutional Occupancies, an enclosure need not be provided for a stairway, ramp, or escalator serving only one (1) adjacent floor. Any two (2) such interconnected floors shall not be open to other floors. Stairs in dwellings and lodging houses and stairs within individual dwelling units need not be enclosed. Stairs in open parking garages need not be enclosed. ()

b. Enclosure wall shall not be of less than two (2)-hour fire resistive construction in buildings four (4) or more stories in height or type I or II fire-resistive construction and shall not be of less than one (1)-hour fire-resistive construction elsewhere. EXCEPTION: In sprinkler protected parking garages restricted to the storage of private or pleasure type motor vehicles, stairway enclosures may be enclosed with glazing meeting the requirements of UBC. ()

c. Openings into exit enclosures, other than permitted exterior openings, shall be limited to those necessary for exiting from a normally occupied space into the enclosure and exiting from the enclosure. Other penetrations into and opening through the exit enclosure are prohibited except for duct work and equipment necessary for independent stair pressurization, sprinkler piping, standpipes, and electrical conduit serving the stairway and

terminating in a listed box not exceeding sixteen (16) square inches in area. Penetrations and communicating openings between adjacent exit enclosures are not permitted regardless of whether the opening is protected. ()

d. All exit doors in an exit enclosure shall be protected by a fire assembly having a fire rating of not less than one (1)-hour where one (1)-hour shaft construction is permitted and one and one-half (1 1/2)-hours where two (2)-hour shaft construction is required. Doors shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector or smoke detection system. ()

e. Stairway and ramp enclosures shall include landings and parts of floors connecting stairway flights and shall also include a corridor on the ground floor leading from the stairway to the exterior of the facility, building, or structure. Enclosed corridors or passageways are not required from unenclosed stairways. Every opening into the corridor shall comply with IDAPA 17.10.04.040.07.c & .d. EXCEPTION: In office buildings, a maximum of fifty percent (50%) of the exits may discharge through a street floor lobby, provided the required exit width is free and unobstructed and the entire street floor is protected with an automatic fire sprinkler system. ()

f. A stairway in an exit enclosure shall not continue below the grade level exit unless an approved barrier is provided at the ground floor level to prevent persons from accidentally continuing into the basement. ()

g. There shall be no enclosed usable space under stairways or ramps in an exit enclosure nor shall the open space under such stairways or ramps be used for any purpose. ()

08. Width and Capacity of Means of Egress: ()

a. The total width of exits, in inches, shall not be less than the total occupant load served by an exit multiplied by zero point three (0.3) for stairways and zero point two (0.2) for other exits nor less than specified elsewhere in this standard. Such widths of exits shall be divided approximately equally among the separate exits. ()

b. The maximum exit width from any story/floor of a facility, building, or structure shall be maintained. ()

c. Every required exit doorway shall be of a size as to permit the installation of a door not less than three (3) feet in width and not less than six (6) feet eight (8) inches in height. When installed, exit doors shall be capable of opening ninety (90) degrees ensuring that the clear width of the exit is not less than thirty-two (32) inches. ()

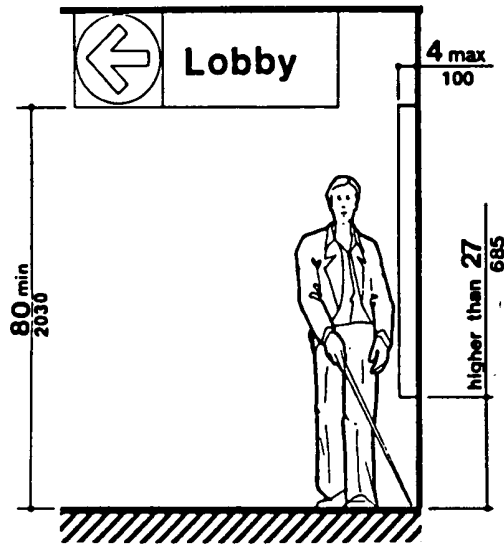
d. A single leaf of an exit door shall not exceed four (4) feet in width. ()

e. The minimum corridor width shall be not less than forty-four (44) inches except as specified elsewhere in this standard. When serving an occupant load of forty-nine (49) or less, the corridor width may be reduced to thirty-six (36) inches. Partitions, rails, counters, and similar space dividers not over five (5) feet nine (9) inches in height above the floor shall not be construed to form corridors. ()

f. Corridors and exterior exit balconies shall have a clear height of not less than seven (7) feet measured to the lowest projection from the ceiling. ()

g. The required width of corridors shall be unobstructed. Handrails and doors, when fully opened, shall not reduce the required width by more than seven (7) inches. Doors in any position shall not reduce the required width of any corridor or landing by more than one-half (1.5). Other non-structural projections such as trim and similar decorative features may project into the required width one and one-half (1.5) inches on each side. In corridors, aisle ways, passageways used by persons with disabilities with objects projecting from walls with their leading edges between twenty-seven (27)-inches and eighty (80)-inches above the finished floor or walkways shall protrude no more than four (4)-inches, see Figure 040.08-A. ()

**FIGURE 040.08-A
PROJECTIONS FROM A WALL**



h. The minimum clear width for a wheelchair accessible route shall be thirty-six (36)-inches, except at doors, see Figures 040.08-B and 040.08-C. If a person in a wheelchair must make a turn around an obstruction, the minimum clear width of the accessible route shall be as shown in Figures 040.08-D and 040.08-E ()

FIGURE 040.08-B

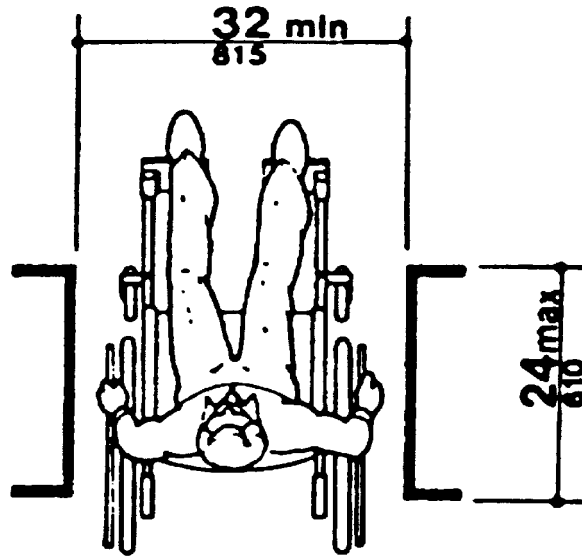


FIGURE 040.08-C

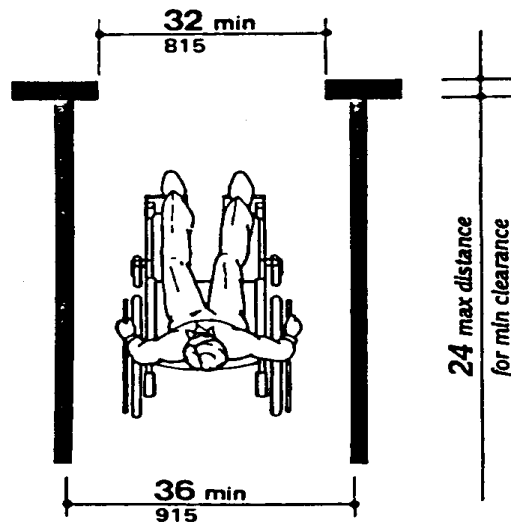


FIGURE 040.08-D
WHEELCHAIR ACCESSIBLE ROUTE, 90-DEGREE TURN MINIMUM CLEAR WIDTH

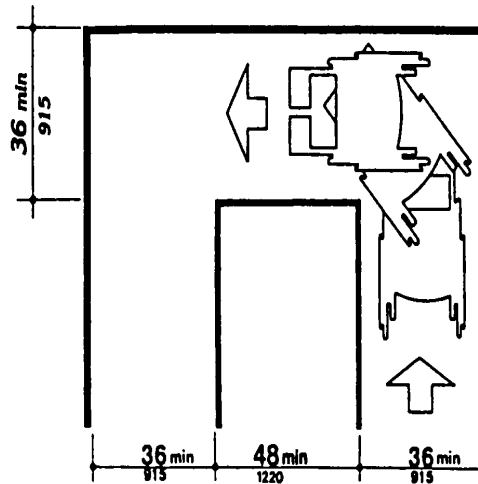
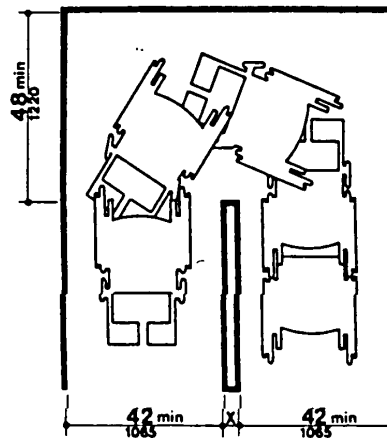


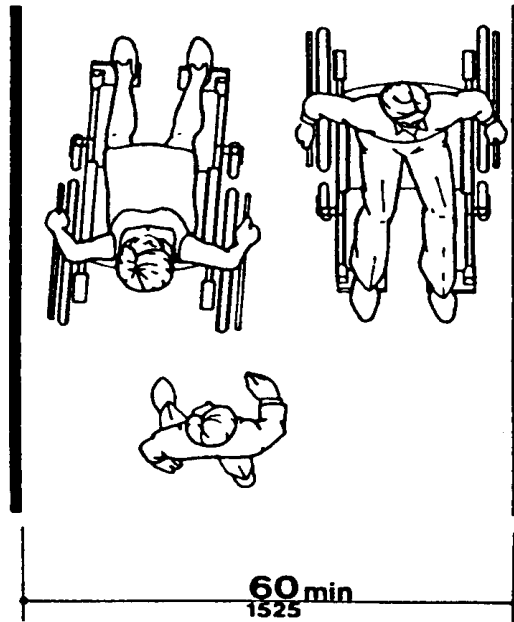
FIGURE 040.08-E
WHEELCHAIR ACCESSIBLE ROUTE, TURNS AROUND AN OBSTRUCTION
MINIMUM CLEAR WIDTH



i. The minimum width for two (2) wheelchairs to pass is sixty (60)-inches, see Figure 040.08-F. If an accessible route has less than a sixty (60)-inch clear width, then passing spaces at least sixty (60)-inches by sixty

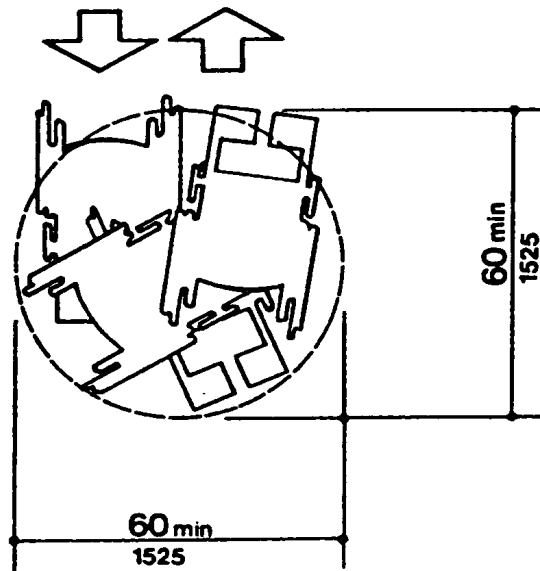
(60)-inches shall be located at reasonable intervals not to exceed two hundred (200)-feet. The T-intersections of two (2) corridors or walks is also an acceptable passing place. ()

FIGURE 040.08-F



j. The required space for a wheelchair to make a one hundred eighty (180)-degree turn is a clear space of sixty (60)-inches in diameter or a T-shaped space, see Figure 040.08-G. ()

FIGURE 040.08-G



k. The minimum clear floor or ground space required to accommodate a single wheelchair and occupant is thirty (30)-inches by forty-eight (48)-inches, see Figure 040.08-H. The minimum clear floor or ground space for wheelchairs may be positioned for forward or parallel approach to an object, see Figure 040.08-I and 040.08-J. The clear floor or ground space for wheel chairs may be part of the knee space required under some objects. ()

FIGURE 040.08-H

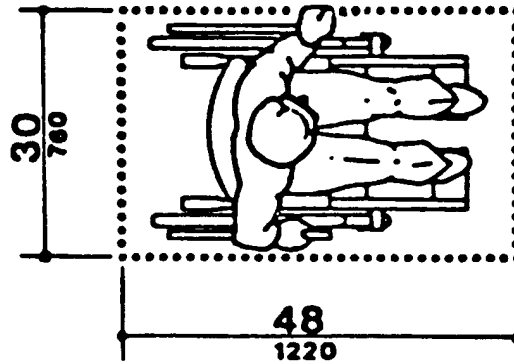


FIGURE 040.08-I

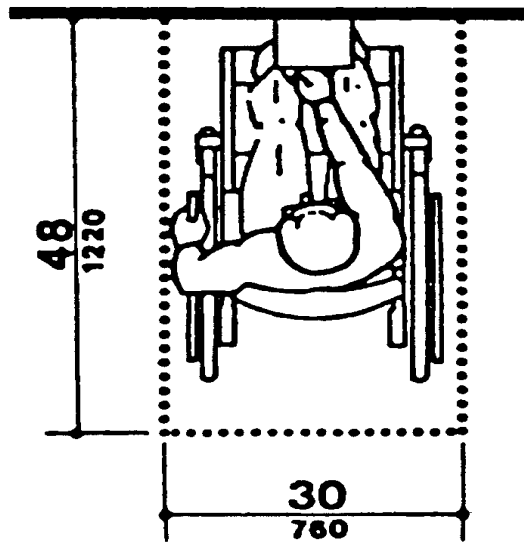
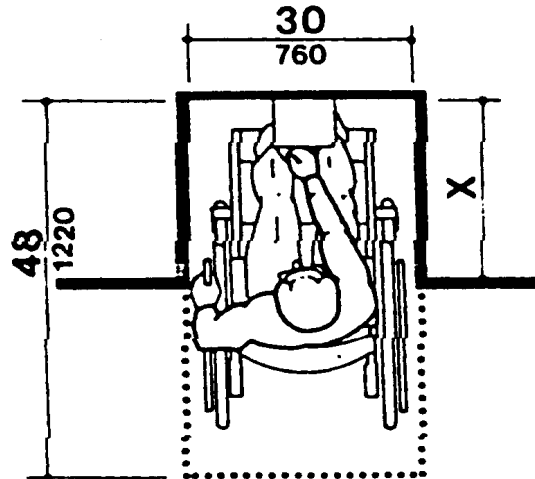


FIGURE 040.08-J



1. Relationship of maneuvering clearance to wheelchair spaces. One full unobstructed side of the clear floor or ground space for a wheelchair shall adjoin or overlap an accessible route or adjoin another wheelchair clear floor space. If clear floor space is located in an alcove or otherwise confined on all or part of three (3) sides, additional maneuvering clearances shall be provided as shown in Figures 040.08-K and 040.08-L. ()

FIGURE 040.08-K

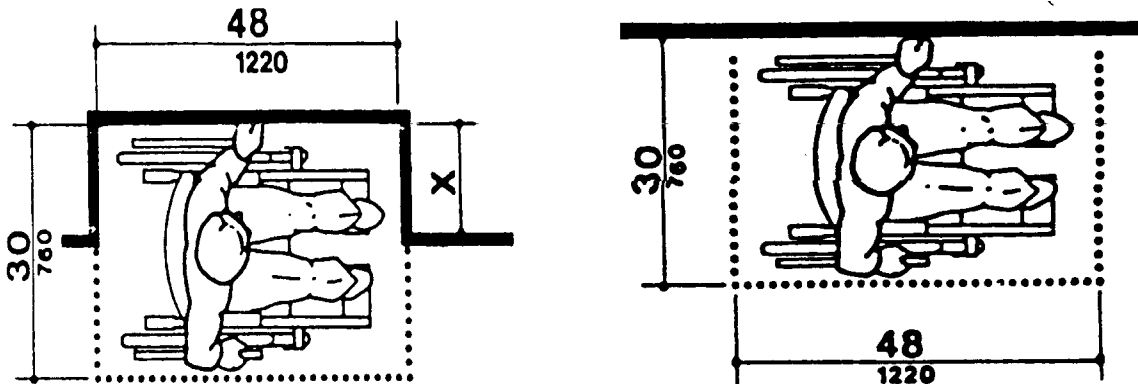
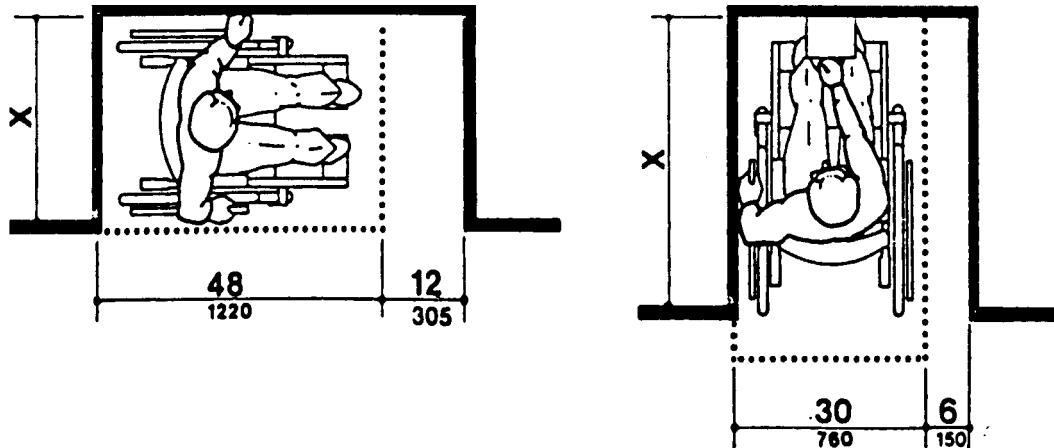


FIGURE 040.08-L



m. The minimum stairway width shall not be less than forty-four (44) inches except as specified elsewhere in this standard. Stairways serving an occupant load of forty-nine (49) or less, the stairway width may be reduced to thirty-six (36) inches. Handrails may project into the required width a distance of three and one-half inches (3 1/2) from each side of a stairway. Stringers and other projections such as trim and similar decorative features may project into the required width one and one-half (1 1/2) inches on each side. ()

n. The minimum ramp width shall not be less than forty-four (44) inches except as specified elsewhere in this standard. For ramps serving an occupant load of forty-nine (49) or less, the ramp may be reduced to thirty-six (36) inches in width. Handrails may project into the required width a distance of three and one-half (1/2) inches from each side of a ramp. Other projections, such as trim and similar decorative features, may project into the required width one and one-half (1.5) inches on each side. ()

o. The slope of ramps which are located within an accessible route of travel shall not be steeper than one (1)-vertical to twelve (12)-horizontal except as specified elsewhere in this standard. Ramps not located within an exit route and not serving as access for the handicapped shall not be steeper than one (1) vertical to eight (8) horizontal. ()

p. The capacity of means of egress for any floor, balcony, tier or other occupied space shall be sufficient for the occupant load thereof. The occupant load shall be the maximum number of persons that may be in the space at any time. The maximum occupant load other than assembly use shall not exceed the capacity of the exits. The occupant load for an assembly building or portion thereof may be increased when approved by building official and the appropriate requirements are met. ()

q. Any room having an occupant load of fifty (50) or more which is used for classroom assembly, or similar purpose, shall have the capacity of the room posted in a conspicuous place near the main exit from the room. The occupant load shall be consistent with the capacity of the exiting system. ()

r. The second story of a facility, building, or structure shall be provided with not less than two (2) exits when the occupancy load is ten (10) or more. Occupants on floors above the second story and in basements shall have access to not less than two (2) separate exits from the floor or basement. EXCEPTIONS: Floors and basements used exclusively for service of the building may have one (1) exit. For the purpose of this exception, storage rooms, maintenance offices, laundry rooms, and similar use shall not be considered as providing service to the building. Storage rooms, maintenance offices, and laundry rooms not exceeding three hundred (300) square feet in floor area may be provided with only one (1) exit. Except as provided in Table 040.03-A, only one (1) exit need be provided from the second floor or a basement of a congregate residence accommodating ten (10) or less persons and having a total area of three thousand (3,000) square feet or less for the entire residence. When the third floor within a congregate residence accommodating ten or less persons and having a total area of three thousand (3,000) square feet

or less for the entire residence and the third floor does not exceed five hundred (500) square feet, only one (1) exit need be provided from that floor. ()

s. Every story or portion thereof having an occupant load of five and hundred and one (501) to one thousand (1,000) shall not have less than three (3) exits. ()

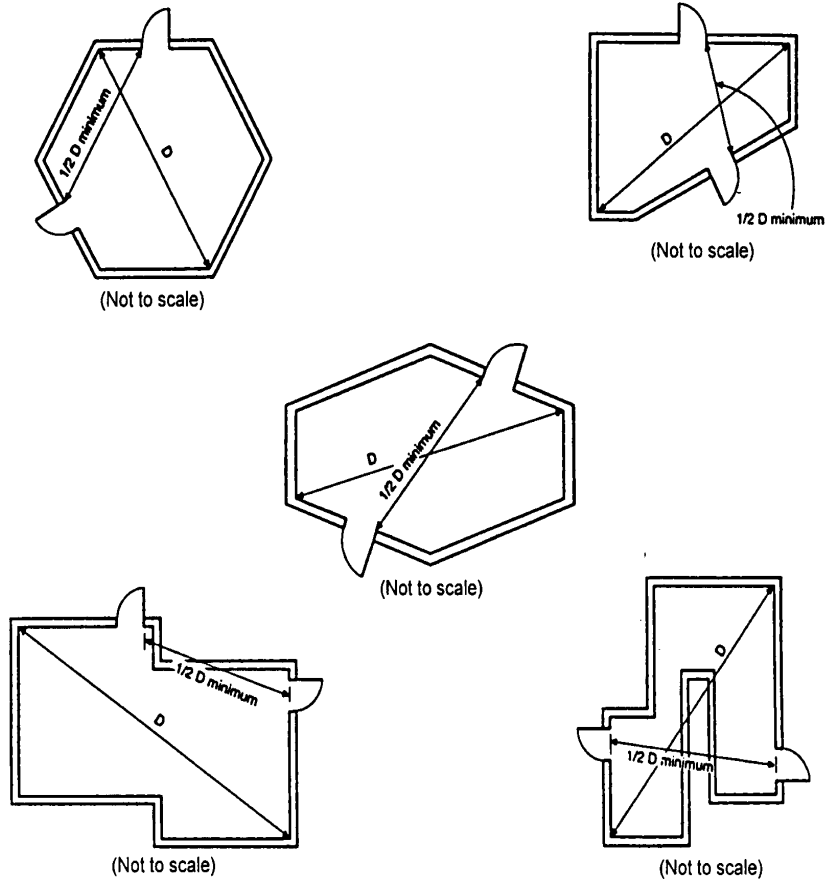
t. Every story or portion thereof having an occupant load of one thousand and one (1,001) or more shall not have less than four (4) exits. ()

u. The maximum number of exits required for any story shall be maintained until egress is provided from the facility, building, or structure. ()

v. If only two (2) exits are required, they shall be placed a distance apart equal to not less than one-half (1/2) of the length of the maximum overall diagonal dimension of the facility, building, structure, or area to be served measured in a straight line between exits see Figure 040.08-M. EXCEPTION: Exit separations may be measured along a direct line of travel within the exit corridor when exit enclosures are provided as a portion of the required exit and are interconnected by a one (1)-hour fire-resistive corridor conforming to the requirements of the Uniform Building Code Section 1005. Enclosure walls shall not be less than thirty (30) feet apart at any point in a direct line of measurement. ()

w. Where three (3) or more exits are required, at least two (2) exits shall be placed a distance apart equal to not less than one (1)-half of the length of the maximum overall diagonal dimension of the facility, building, structure, or area to be served measured in a straight line between exits, and arranged a reasonable distance apart so that if one becomes blocked the others will be available. ()

FIGURE 040.08-M
ONE-HALF DIAGONAL RULE



09. Access to Exits: ()

a. Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least two (2) exits by separate ways of travel, except as a single exit or limited dead ends are permitted by other provisions of these standards shall be maintained. ()

b. Doors from rooms having an occupant load of ten (10) or more which lead to an exit or to a way of exit access shall be of the side-hinged, swinging type. Doors shall swing in the direction of exit travel when the room is occupied by more than fifty (50) persons or when serving any hazardous area. ()

c. Rooms may have one (1) exit through an adjoining or intervening room which provides a direct, obvious, and unobstructed means of travel to an exit corridor, exit enclosure, or until egress is provided from the

facility, building, or structure provided the total distance of travel does not exceed that permitted by other provisions of this standard. In other than dwelling units, exits shall not pass through kitchens, rest rooms, closets, or spaces used for similar purposes. EXCEPTIONS: Rooms with a cumulative occupant load of ten (10) or less may exit through more than one (1) intervening room. Rooms within dwelling units may exit through more than one (1) intervening room. ()

d. Ways of exit access and the doors leading to exits shall be so designed and arranged as to be clearly recognizable as such. Hangings or draperies shall not be located to conceal or obscure any exit. Mirrors shall not be placed adjacent to or on any exit door in such a manner as to confuse the direction of exit. ()

e. Exit access shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other suitable physical barriers of not less than a one (1)-hour fire resistive separation. Except in dwellings and lodging houses, any room containing a boiler, furnace, incinerator, or other fuel-fired equipment must be provided with two (2) means of egress when both of the following conditions exist: The area of the room exceeds five hundred (500) square feet; and the largest piece of fuel-fired equipment exceeds four hundred thousand (400,000) BTU per hour input capacity. If two (2) exits are required, one may be a fixed ladder, remote from the other exit. ()

f. Exits from a room may open into an adjoining or intervening room or area, provided such adjoining room is accessory to the area served and provides a direct means of egress to an exit corridor, exit stairway, exterior exit, horizontal exit, exterior exit balcony or exit passageway. ()

g. Foyers, lobbies and reception rooms constructed as required for corridors shall not be construed as intervening rooms. ()

h. Mezzanines shall be provided two (2) exits when required by Table 040.03-A. ()

i. When corridor walls are required to be one (1)-hour fire-resistive construction: Door openings shall be protected by a tight-fitting smoke and draft-control door assembly having a fire protection rating of twenty (20)-minutes and be so labeled. Said doors shall not have louvers. Doors shall be maintained self-closing or shall be automatic closing by actuation of an approved smoke detector. Smoke and draft control door assemblies shall be provided with a gasket so installed as to provide a seal where the door meets the frame on both sides and across the top. Interior openings for other than doors or ducts shall as a minimum be protected by fixed, approved 1/4-inch thick wired glass installed in steel frames not to exceed twenty-five percent (25%) of the area of the corridor wall of the room which it is separating from the corridor. Preferred window opening protection shall have a fire protection rating of three fourths (3/4)-hours. ()

j. The minimum width of any way of exit access shall in no case be less than twenty-eight (28) inches. Where a single way of exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate. In areas serving employees only, the minimum aisle width shall not be less than twenty-eight (28) inches. In public areas, the minimum clear aisle width shall be not less than thirty-six (36)-inches where obstructions are placed on one side and not less than forty-four (44)-inches wide when obstructions are placed on both sides of the aisle. A way of exit access serving disabled persons shall be a minimum of thirty-six (36)-inches wide. ()

k. No furnishings, decorations, or other objects shall be placed as to obstruct exits, access thereto, egress therefrom, or visibility thereof. ()

l. No furnishing or decorations of an explosive or flammable character shall be used in any facility, building, or structure. ()

10. Exit Doors: ()

a. Exit doors shall meet the requirements of this subsection and IDAPA 17.10.04.040.08. ()

b. Double acting doors shall not be used as exits when serving an occupant load of one hundred (100) or more, nor shall they be used as part of a fire assembly, nor equipped with panic hardware, nor be part of a smoke and draft control assembly. A double-acting door shall be provided with a view panel of not less than two hundred (200) square inches. ()

c. No screen door or storm door, in connection with any required exit, shall swing against the direction of exit travel in any case where doors are required to swing with the exit travel. ()

d. Exit doors shall be openable from the inside without the use of a key or any special knowledge or effort. Manually operated edge or surface mounted flush bolts and surface bolts are prohibited. ()

11. Panic Hardware: ()

a. When a door is required to be equipped with panic hardware by some other provision of this Code, the panic hardware shall cause the door latch to release when a force of not to exceed fifteen (15) pounds is applied to the releasing mechanism in the direction of exit travel. ()

b. Such releasing mechanisms shall be bars or panels, the actuating portion of which shall be not less than one-half (1/2) of the width of the door leaf, and placed at heights suitable for the service required, not less than 30 nor more than forty-four (4)4 inches above the floor. ()

c. Only approved panic hardware shall be used. Panic hardware shall be maintained in operable condition at all times. ()

d. Doors with required panic hardware shall not be equipped with any locking or dogging device, set screw or other arrangement which can be used to prevent the release of the latch when pressure is applied to the bar or to prevent the door from opening. ()

12. Special Egress Control Devices: ()

a. When approved by the building official, exit doors in drinking and dining establishments having a occupant load of less than fifty (50), wholesale and retail stores, office buildings, printing plants, police and fire stations, and factories and workshops using materials not highly flammable or combustible, storage and sales rooms for combustible goods, paint stores without bulk handling, and facilities, buildings, structures, or portions thereof having rooms used for educational purposes beyond grade twelve (12) with less than fifty (50) occupants in any room may be equipped with listed special egress control devices of the time delay type, provided the facility, building, or structure is protected throughout by an approved automatic fire sprinkler system and an approved smoke detection system. Such devices shall conform to all of the following: automatically deactivate the egress control device upon activation of either the sprinkler system or the smoke detection system; automatically deactivate the egress control device upon the loss of electrical power to the egress control device, the smoke detection system or exit illumination; be capable of being deactivated by a signal from a switch located in an approved location; initiate an irreversible process which will deactivate the egress control device whenever a manual force of not more than fifteen (15) pounds is applied for two (2) seconds to the panic bar or other door-latching hardware. The egress control device shall deactivate within an approved time period not to exceed a total of fifteen (15) seconds. The time delay established for each egress control device shall not be field adjustable. Actuation of the panic bar or other door-latching hardware shall activate an audible signal at the door. The unlatching shall not require more than one (1) operation. ()

b. A sign shall be provided on the door located above and within twelve (12) inches of the panic bar or other door-latching hardware reading: "KEEP PUSHING, THIS DOOR WILL OPEN IN _____ SECONDS, ALARM WILL SOUND." ()

c. Regardless of means of deactivation, relaxing of the egress control device shall be by manual means only at the door. ()

13. Dead End Corridors and Pockets: Corridors serving an occupant load of ten (10) or more shall be so arranged that there are no dead ends whose depth exceeds twenty (20) feet in length. ()

14. Distance to Exits: ()
- a. The maximum distance of travel from any point to an exterior exit door, horizontal exit, exit passageway or an enclosed stairway in a facility, building, or structure not equipped with an automatic fire sprinkler system throughout shall not exceed one hundred and fifty (150) feet or two hundred (200) feet in a facility, building, or structure equipped with an automatic fire sprinkler system throughout. These distances may be increased one hundred (100) feet when the last one hundred and fifty (150) feet of travel is within a one (1)-hour fire resistive protected corridor. ()
- b. In a one (1)-story factory, warehouse or airplane hangar, the exit travel distance may be increased to 400 feet if the building is equipped with an automatic fire sprinkler system throughout and provided with approved smoke and heat ventilation. ()
- c. In an open parking garage, the exit travel distance may be increased to two-hundred fifty (250) feet. ()
- d. In high hazard areas, the distance of travel to an exterior exit door, exit corridor, enclosed stairway, or other approved exit shall not exceed one hundred (100) feet. ()
15. Exterior Ways of Exit Access: ()
- a. Access to any exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this section. ()
- b. Exterior ways of exit access shall have smooth, solid floors, substantially level, and shall have standard guardrails on the unenclosed sides when required by IDAPA 17.10.10.071.04. ()
- c. Where accumulation of snow or ice is likely because of the climate, the exterior way or exit access shall be protected by a roof. ()
- d. All ways of egress shall be kept clear and free of obstructions. ()
- e. Any gallery, balcony, bridge, porch, or other exterior exit access that projects beyond the outside wall of the facility, building, or structure shall comply with the requirements of this subsection as to width and arrangement. ()
16. Discharge From Exits: ()
- a. All exits shall discharge directly to the street, yard, court, or other open space that gives safe access to a public way. The streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the facility, building, or structure. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the facility, building, or structure with ready access to the street. ()
- b. Stairs and other exits shall be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, gates, doors, or other effective means. ()
- c. When a doorway of a facility, building, or structure is located near a roadway, alley, railroad, trolley track, etc., so that the occupants are likely to walk upon the roadway or track in front of an approaching vehicle, engine, or trolley car, a standard safeguard such as standard guardrails shall be installed with a warning sign. ()
17. Changes in Elevation: ()
- a. IDAPA 10.10.04.040.17.b, 040.17.c, and 040.17.d will apply only to areas where there is a change in elevation in corridors or walkways. ()

b. Within a facility, building, or structure, changes in elevation of less than twelve (12) inches along any route serving an occupant load of ten (10) or less shall be by ramps. EXCEPTIONS: Dwellings and lodging houses and along aisles adjoining seating areas. ()

c. Changes in elevation of twelve (12) or more inches shall be by stairs or ramps. ()

d. When a corridor or walkway is accessible to the handicapped, changes in elevation shall be by means of a ramp, except as provided for doors by IDAPA 17.10.04.040.18.c. ()

18. Changes in Floor Level at Doors: ()

a. Regardless of the occupant load, there shall be a floor or landing on each side of a door. ()

b. EXCEPTIONS: Doors serving building equipment rooms which are not normally occupied. Doors serving dwellings, lodging houses, and garages, carports, sheds, and within individual units of hotels and apartment houses may; open at the top step of an interior flight of stairs provided the door does not swing over the top step; open at a landing that is not more than eight (8) inches lower than the floor level provided the door does not swing over the landing; screen doors and storm doors may swing over stairs, steps, or landings. ()

c. When access for persons with disabilities is required, the floor or landing shall not be more than one-half (1/2) inch lower than the threshold of the doorway. When such access is not required such dimension shall not exceed one (1) inch. ()

d. Landings shall be level except exterior landings may have a slope not to exceed one-fourth (1/4) inch per foot. ()

e. Landings at doors shall have a width not less than the width of the stairway or the width of the door whichever is the greater. ()

f. Doors in the fully open position shall not reduce a required dimension by more than seven (7) inches. When a landing serves a occupant load of fifty (50) or more persons, doors in any position shall not reduce the landing dimension to less than one-half (1/2) the required width. ()

g. Landings shall have a length measured in the direction of travel of not less than forty-four (44) inches. EXCEPTION: Landings serving dwellings, lodging houses, garages, sheds, and within individual units of hotels and apartment houses may have a length of not less than thirty-six (36) inches. ()

h. Landings without adjoining doors shall have a dimension measured in the direction of travel not less than the width of the stairway. Such dimension need not exceed forty-four (44) inches when the stair has a straight run. There shall be not more than twelve (12) feet vertically between landings. EXCEPTION: Stairs serving an unoccupied roof. ()

19. Maintenance and Workmanship: ()

a. Doors, stairs, ramps, passages, signs, and all other components of exiting systems shall be of substantial, reliable construction, and shall be built or installed in a workmanlike manner. ()

b. Means of egress shall be continuously maintained free from all obstructions or impediments to allow full and instant use in the case of fire or other emergency. ()

c. Any device or alarm installed to restrict the improper use of an exit shall be so designed and installed that it cannot, even in cases of failure, impede or prevent emergency use of such exit. ()

20. Glazing: ()

a. Glazing subject to human impact shall be approved safety glazing and shall comply with this subsection. ()

b. Each unit of safety glazing material installed in hazardous locations as defined in IDAPA 17.10.04.040.21.b. shall be permanently identified by a label stating that safety glazing material has been utilized in such installation and shall be visible when the glass is installed. ()

c. The following shall be considered specific hazardous locations for the purpose of glazing: Glazing in ingress and egress doors except jalousies (shutter or french doors). Glazing in fixed and sliding panels of sliding door assemblies and panels in swinging doors except wardrobe doors. Glazing in storm doors. Glazing in all unframed swinging doors. Glazing in doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs, and showers. (Glazing in any portion of a facility, building, or structure wall enclosing these compartments where the bottom exposed edge of the glazing is less than sixty (60) inches above a standing surface and drain inlet.) Glazing in fixed or openable panels adjacent to a door. (Glazing any portion of a facility, building, or structure wall where the bottom exposed edge is less than sixty (60) inches above the floor or walking surface.) Glazing in a fixed or openable panel other than previously described that meets the following conditions; the exposed area of an individual pane is greater than nine (9) square feet, the exposed top edge is more than eighteen (18) inches above the floor or walking surface, and where the walking surface is less than thirty-six (36) inches from glazing. Glazing in railings, regardless of height above a walking surface (Included are structural baluster panels and non-structural in-fill panels). EXCEPTION: Glass block panels. ()

d. Hinged shower doors shall open outward. ()

e. Glazing, including mirrors, attached to walls or other surfaces where the glazing may be subject to impact, shall be safety glazing or attached so that the broken pieces remain affixed to the mounting surface. ()

f. Regular float, wired, and patterned glass in jalousies and louvered windows shall be no thinner than nominal three sixteenths (3/16)-inch and no longer than forty-eight (48) inches. Exposed glass edges shall be smooth. Wired glass with wire exposed on longitudinal edges shall not be used in jalousies or louvered windows. ()

g. All assemblies where glass and glazing materials are used shall be maintained in a serviceable condition. Broken shards of glass shall be immediately removed from glass assemblies. ()

h. Sloped glazing installed at a slope of fifteen (15)-degrees or more from the vertical plane shall be of any of the following materials: For single layer glazing systems, the glazing material shall be laminated glass with a minimum thirty (30)-mil polyvinyl butyryl or equivalent interlayer, wired glass, approved plastic materials, heat strengthen glass, or fully tempered glass. For multiple layer glazing systems, each outer layer shall consist of any of the glazing materials specified in this subsection. Annealed glass may be used as specified in IDAPA 17.10.04.040.21.h. ()

i. Heat strengthened glass and fully tempered glass when, used in single layer glazing systems, shall have screens installed below the glazing and over the walking surface which shall comply with the requirements for monolithic glazing systems. The screens shall be capable of supporting the weight of the glass and shall be substantially supported below and installed within four (4)-inches of the glass. They shall be constructed of a noncombustible material not thinner than zero point zero eight (0.08)-inch with a mesh opening not larger than one by one (1 x 1)-inch. In a corrosive atmosphere, structurally noncorrosive screening materials shall be used. Heat strengthened glass, fully tempered glass, and wire glass when used in multiple layer glazing systems as the bottom glass layer over the walking surface shall be equipped with screening which complies with the requirements for monolithic glazing systems. EXCEPTIONS: Fully tempered glass may be installed without required protective screens when located between intervening floors at a slope of thirty (30) degrees or less above the working surface. Allowable glazing material, including annealed glass, may be installed without required screens if the walking surface or any other accessible area below the glazing material is permanently protected from falling glass for a minimum horizontal distance equal to twice the height. Allowable glazing material, including annealed glass, may be installed without screens in sloped glazing systems of green houses used exclusively for growing plants and not used by the public, provided the height of the greenhouse at the ridge does not exceed twenty (20)-feet above grade. ()

21. Furnishings and Decorations. ()

a. No furnishings, decorations or other objects shall be so placed as to obstruct exits, access thereto, ()

- egress therefrom or visibility thereof. ()
- b. No furnishings or decorations of an explosive or highly flammable character shall be used in any occupancy. ()
22. Fire Escapes: ()
- a. Existing fire escapes and ladders shall be maintained in accordance with the provisions of this standard. ()
- b. Existing metallic, iron, or fireproof ladders or stairs, when used, must be well fastened, secured, and of sufficient strength to handle the intended occupant load. ()
- c. Fire escape ladders or stairs shall not constitute any of the required means of egress from a facility, building, or structure. ()
- d. Fire escape ladders or stairs shall provide a continuous, unobstructed, safe path of travel to a safe area of refuge. ()
- e. Access to a fire escape ladder or stair shall be directly to a balcony, landing, or platform. These shall be no higher than the floor or window-sill level and no lower than eight (8)-inches below the floor level or eighteen (18)-inches below the window-sill. ()
- f. All fire escape stairs shall have standard height guardrails and handrails. ()
- g. Noncombustible materials shall be used for the construction of all components of fire escape ladders and stairs. ()
- h. A single swinging section shall be permitted to terminate fire escape stairs over sidewalks, alleys, or driveways. ()
- i. Swinging stair sections shall not be located over doors, over the path of travel from any other exit, or in any locations where there are likely to be obstructions. ()
- j. The width of swinging stair sections shall be no less than that of the fire escape stairs. ()
- k. The pivot for swinging stairs shall be of a corrosion resistant assembly or have clearances to prevent sticking due to corrosion. ()
- l. Swinging stairs shall be counterbalanced so that a weight of one hundred and fifty (150) pounds located one-quarter (1/4) of the length from the pivot will positively cause the stairs to swing down. ()
- m. No device to lock a swinging stair section in the up position shall be installed. ()
- n. Existing fire escape ladders shall be permitted to be used only under the following conditions: To provide access to roof spaces not normally occupied. To provide a means of egress from towers and elevated platforms around machinery or similar spaces subject to occupancy only by three (3) or less able-bodied adults. ()
23. Exit Marking: ()
- a. Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible direction signs in all cases where the way is not immediately visible to the occupants. ()
- b. When two (2) or more exits from a story are required by IDAPA 17.10.04.040.03 and Table 040.03-A, exit signs shall be installed at stair enclosure doors, horizontal exits, and other required exits from the story. When two (2) or more exits are required from a room or area, exit signs shall be installed. EXCEPTIONS: Main entry exit

doors which are obviously and clearly are identifiable as exits need no sign posted. Dwellings, lodging houses, congregate residences accommodating ten (10) persons or less, and individual units of hotels and apartment houses. Exits from rooms or areas with an occupant load of less than fifty (50) when located within a nursery for the full-time care of children under the age of six (6) years, sanitariums, nursing homes with non-ambulatory patients, health care centers for ambulatory patients receiving outpatient medical care which may render the patient incapable of unassisted self-preservation, nursing homes for ambulatory patients, homes for children six (6) years of age or older, day care centers, and similar facilities, buildings, and structures each accommodating more than five (5) persons. ()

c. Any door, passage or stairway which is neither an exit nor a way of exit access and which is so located or arranged as to be mistaken for an exit shall be identified by a sign reading, "Not an exit" or similar designation, or shall be identified by a sign indicating its actual character, such as, "To basement", "storeroom", "linen closet" or the like. A door designed to be kept normally closed shall bear a sign reading substantially as follows: FIRE EXIT, Please keep door closed. ()

d. Every required sign designating an exit or way of exit access shall be so located and of such size and color and design as to be readily visible. No decorations, furnishings, protrusions, or equipment which impairs visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated non-exit sign, display, or object in or near the line of vision to the required exit sign of such a character as to so detract attention from the exit sign that it may not be noticed. ()

e. Every exit sign shall have the word "Exit" in plainly legible letters not less than six (6) inches high, with the principal strokes of the letter not less than three fourths (3/4) inch wide. ()

f. Every exit sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs. ()

g. A sign reading "Exit" or similar designation, with an arrow indicating the direction, shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent. ()

041. ILLUMINATION OF MEANS OF EGRESS.

01. Scope: Every facility, building, structure, or portion thereof shall be provided with exit illumination as required by this section. Where there is a conflict between a general requirement and a specific requirement for an individual occupancy, the specific requirement shall be applicable. ()

02. Definitions. For other definitions of terms used in this Section, see IDAPA 17.10.01.010. ()

03. General Requirements. ()

a. Illumination of means of egress shall be provided in accordance with this section for every facility, building, and structure. ()

b. Exits shall be illuminated at any time that the facility, building, or structure is occupied with light having an intensity of not less than one (1)-foot-candle at the floor/walking surface level. EXCEPTIONS: Within individual dwelling units, guest rooms, and sleeping rooms. In auditoriums, theaters, concert or opera halls, and similar assembly uses, the illumination at floor/walking level may be reduced during the performances to not less than two tenths (0.2)-foot-candle. ()

c. Any required illumination shall be so arranged that the failure of any single lighting unit, such as the burning out of an electric bulb, will not leave any area in darkness. ()

042. EMERGENCY LIGHTING.

01. Scope: Every facility, building, structure, or portion thereof shall be provided with emergency lighting as required by this section. Where there is a conflict between a general requirement and a specific requirement for an individual occupancy, the specific requirement shall be applicable. ()

02. Definitions. For other definitions of terms used in this Section, see IDAPA 17.10.01.010. ()
03. General Requirements: ()
- a. Emergency lighting systems for means of egress shall be provided for every facility, building, or structure in accordance with this section. ()
- b. The power supply for exit illumination shall normally be provided by the premises wiring system. In the event of its failure, illumination shall be automatically provided from an emergency system. Emergency illumination shall be provided for nurseries for the full time care of children under age six (6), hospitals, sanitariums, and nursing homes each accommodating more than five (5) persons. Emergency illumination shall be provided for all other facilities, buildings, or structures where the exiting system serves an occupant load of one hundred (100) or more. Emergency illumination shall be provided for boiler rooms. Due to the potential for injury, in the event of a failure of the primary illumination system, it is highly recommended that in facilities, buildings, or structures used for night occupancy, all portions of a facility, building, or structure that are interior or windowless, such as rooms, stairways, corridors, maintenance areas, or other areas where loss of illumination could create a hazard, be equipped with emergency lighting. ()
- c. Emergency illumination systems shall be supplied from storage batteries or an on-site generator set. The system shall be installed in accordance with the requirements of this standard and the National Electrical Code. ()
- d. Where maintenance of illumination depends upon changing from one (1) energy source to another, there shall be no appreciable interruption of illumination during the changeover. Where emergency lighting is provided by a prime mover-operated electric generator, a delay of not more than ten (10) seconds shall be permitted. ()
04. Performance of System: ()
- a. Emergency lighting systems shall be arranged to maintain the specified degree of illumination for a period of one and one-half (1 1/2) hours in the event of failure of the normal lighting all facilities, buildings, and structures. ()
- b. Electric battery-operated emergency lights shall use only reliable types of storage batteries, provided with suitable systems for maintenance in properly charged condition. Battery operated emergency lighting systems shall be tested for operability monthly and a record of such tests shall be kept. Electric storage batteries used in such lights or units shall be approved for their intended use and shall comply with the National Electrical Code (NFPA 70). Controlling circuit breakers or other cut offs for emergency lighting systems shall be readily identified. ()
- c. An emergency lighting system shall be so arranged as to provide the required illumination automatically in the event of any interruption of normal lighting, such as any failure of public utility or other outside electrical power supply, opening of a circuit breaker or fuse, or any manual act(s), including accidental opening of a switch controlling normal lighting systems. ()
- d. An emergency lighting system either shall be continuously in operation or shall be capable of repeated automatic operation without manual intervention. ()
- e. Where gas vapor lighting is the sole source of illumination, other types of lighting shall be used to provide illumination when electrical power is restored until the gas vapor lights re-illuminate. ()
- f. Emergency generators shall be tested for operability monthly and a record of such tests shall be kept. ()
05. Exit Marking: ()

a. Exit signs shall be internally or externally illuminated by two (2) electric lamps or shall be of an approved self-luminous type (photo-luminous exit signs are not an approved type). When the luminance on the face of an exit sign is from an external source, it shall have an intensity of not less than five (5) foot-candles from either lamp. Internally illuminated exit signs shall provide an equivalent luminance. ()

b. Electric current supply to one (1) of the lamps for exit signs shall be provided by the premises wiring system. Electric power to the other lamp shall be from storage batteries or an on-site generator set. The system shall be installed in accordance with this standard and the National Electrical Code. ()

c. exit signs using batteries to provide back-up illumination shall use only reliable types of storage batteries, provided with suitable systems for maintenance in a properly charged condition. Exit signs with batteries shall be tested for operability monthly and a record of such tests shall be kept. ()

043. CONFINED SPACE ENTRY REQUIREMENTS.

01. Scope: This section contains requirements for practices and procedures to protect employees from those hazards dealing with entry into and work within confined spaces. ()

02. Definitions. For other definitions of terms used in this Section, see IDAPA 17.10.01.010. ()

a. Acceptable entry conditions are conditions that must exist in a confined space to allow safe entry and to ensure that employees can safely work in a confined space. ()

b,. Attendant is an individual stationed outside the confined space who is trained as required by this section and who monitors the authorized entrants inside the confined space. ()

c. Authorized entrant is an employee who is authorized by the employer to enter a confined space. ()

d. Blanking or Blinding means the absolute closure of a pipe, line, or duct by the fastening of a solid plate that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate. ()

e. Confined Space is a space that is large enough and so configured that an employee can bodily enter and perform work; and has limited or restricted means for entry or exit; and is not designated for continuous employee occupancy and has one (1) or more of the following hazards or potential hazards: contains or has the potential to contain a hazardous atmosphere; contains a material with the potential for engulfment; has an internal configuration such that an employee could be trapped or asphyxiated by inwardly converging walls, or a floor that slopes downward and tapers to a smaller cross section; or contains any other recognized safety or health hazard. ()

f. Double Block and Bleed is the closure of a line, duct, or pipe by closing and locking or tagging two (2) in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves. ()

g. Emergency is when any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the confined space that could endanger entrants. ()

h. Engulfment is the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force to cause death by strangulation, constricting, or crushing. ()

i. Entry is the action by which a person passes through an opening into a confined space. Entry includes the ensuing work activities in the confined space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of the opening into the confined space. ()

j. Inerting is the displacement of the atmosphere in a confined space by a noncombustible gas to such

an extent that the resulting atmosphere is noncombustible. ()

k. Isolation is the process by which a confined space is removed from service and completely protected against the release of energy and material into the confined space by such means as; blanking or blinding, misaligning or removing sections of lines, pipes, or ducts; double lock and bleed system; lock or tag out of all sources of energy; or blocking or disconnecting all mechanical linkages. ()

l. Line Breaking is the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury. ()

m. Oxygen Deficient Atmosphere is a atmosphere containing less than nineteen and one-half percent (19.5%) oxygen by volume. ()

n. Oxygen Enriched Atmosphere is an atmosphere containing more than twenty-three and one-half percent (23.5%) oxygen by volume. ()

o. Rescue Service are the personnel designated to rescue employees from a confined space. ()

p. Retrieval System is the equipment including a retrieval line, chest or full-body harness, wristlets, and if appropriate a lifting device or anchor for use in a non-entry rescue of persons from a confined space. ()

q. Testing is the process by which the hazards that may confront entrants in a confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the confined space. ()

03. General Requirements: ()

a. The employer shall evaluate the workplace to identify any confined spaces. ()

b. The employer shall inform exposed employees, by posting danger signs or by any other equally effective means of the existence and location of and danger posed by the confined space(s). ()

c. If employees are not to enter the confined space, the employer shall take effective measures to prevent employees from entering the confined space. ()

d. If employees are to enter the confined space the employer shall develop a written confined space program with standardized checklists. The written program shall be available for inspection by employees and their authorized representatives. ()

e. When there are changes in the use or configuration of a confined space that might increase or decrease the hazards to the entrants, the employer shall reevaluate that space and update the written confined space program/checklists as necessary. ()

f. When an employer (host employer) arranges to have employees of another employer (contractor) perform work that involves confined space entry, the host employer shall: inform the contractor that the workplace contained confined space(s); apprise the contractor of the elements, including the hazards identified and the host employer's experience with the confined space; apprise the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near the confined spaces where contractor personnel will be working; and coordinate operations with the contractor, when both host and employer and contractor personnel will be working in or near confined spaces. ()

04. Development and Implementation: ()

a. The employer shall develop and implement the means, procedures, and practices necessary for safe confined space entry operations, including, but not limited to, the following: specifying acceptable entry conditions; isolating the confined space; Purging, Inerting, flushing, or ventilating the confined space as necessary to eliminate or control atmospheric hazards; and verifying that conditions in the confined space are acceptable for entry throughout

the duration of an authorized entry. ()

b. The employer shall provide the following equipment at no cost to the employees, maintain that equipment properly, and ensure that employees use the equipment properly: testing and monitoring equipment; ventilating equipment needed to obtain acceptable entry conditions; communications equipment; personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees; lighting equipment needed to enable employees to see well enough to work safely and to exit the confined space quickly in an emergency; barriers and shields; equipment such as ladders, needed for safe ingress and egress by entrants; rescue and emergency equipment, except to the extent that the equipment is provided by rescue services; and any other equipment necessary for safe entry into and rescue from a confined space. ()

c. The employer shall have confined space conditions evaluated when entry operations are conducted: conditions in the confined space shall be tested to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where entrants are working; test or monitor the confined space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations; and when testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors. ()

d. The employer shall provide at least one (1) attendant outside the confined space into which entry is authorized and for the duration of the entry operations. ()

e. If multiple confined spaces are to be monitored by a single attendant, include in the written program the means and procedures to enable the attendant to respond to an emergency affecting one (1) or more of the confined spaces being monitored without distraction from the attendant's responsibilities ()

f. Designate the persons who are to have an active roles in confined space operations, identify the duties and responsibilities of these of each such employee, and provide each such employee with the training required for the duty. ()

g. Develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from confined spaces, for providing necessary emergency services to rescued employees, and from preventing unauthorized personnel from attempting a rescue. ()

h. Develop and implement procedures to coordinate confined space entry operations when employees of more than one (1) employer are working simultaneously are authorized entrants in a confined space, so that employees of one (1) employer do not endanger the employees of any other employer. ()

i. Review confined space entry procedures when the employer or employees have reason to believe that the measures in the confined space program may not protect employees and revise the program to correct deficiencies found to exist before subsequent confined space entries are authorized. ()

05. Training: ()

a. The employer shall provide training so that all employees whose work involves confined spaces acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned relative to confined spaces. ()

b. Training shall be provided to each effected employee: before the employee is first assigned to duties involving confined spaces; before there is a change in assigned duties; whenever there is a change in confined space operations that presents a hazard about which an employee has not previously been trained; whenever there is reason to believe that there are deviations from the entry procedures or there are inadequacies in the use of the procedures. ()

c. The training shall establish employee proficiency in the duties assigned relative to confined space operations and shall introduce new or revised procedures as necessary for compliance with this section. ()

06. Duties of Entrants: ()
- a. The entrant shall know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure. ()
 - b. The entrant shall ensure that all required equipment is available and used. ()
 - c. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the confined space. ()
 - d. Alert the attendant whenever: the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or the entrant detects a dangerous condition. ()
 - e. Exit from the confined space as quickly as possible whenever: an order to evacuate is given by the attendant or supervisor; the entrant recognizes any warning sign or symptom of exposure to a dangerous situation; or the entrant detects a prohibited condition. ()
07. Duties of Attendants: ()
- a. The attendant shall know the hazards that may be faced during confined space entry, including information on the mode, signs or symptoms, and consequences of exposure. ()
 - b. The attendant shall be aware of the possible behavioral effects of hazard exposure in entrants. ()
 - c. The attendant shall continuously maintain an accurate count of entrants in the confined space. ()
 - d. The attendant shall remain outside the confined space during confined space operations until relieved by another attendant. ()
 - e. The attendant shall maintain communications with entrants to monitor entrant status and to alert entrants of the need to evacuate the confined space. ()
 - f. The attendant shall monitor activities in side and outside the confined space to determine if it is safe for the entrants to remain in the space and orders the entrants to evacuate the confined space immediately under any of the following conditions: if the attendant detects a prohibited condition; if the attendant detects the behavioral effects of hazard exposure; if the attendant detects a situation outside the confined space that could endanger the entrants; or if the attendant cannot effectively and safely perform all the required duties. ()
 - g. The attendant shall summon rescue and other emergency services as soon as it is determined that entrants may need assistance to escape from the confined space. ()
 - h. The attendant shall take the following actions when unauthorized persons approach or enter a confined space during confined space operations: warn the unauthorized persons that they must stay away from the confined space; advise the unauthorized persons that they must exit immediately if they have entered the confined space; and inform the authorized entrants and the supervisor that unauthorized persons have entered the confined space. ()
 - i. The attendant may perform non-entry rescues as specified by the employer's rescue procedure if trained to do so. ()
 - j. The attendant shall not perform any other duties that might interfere with the attendant's primary duty to monitor and protect the entrants. ()
08. Duties of Supervisors: ()

a. The supervisor shall know the hazards that may be faced during confined space entry, including information on the mode, signs or symptoms, and consequences of the exposure. ()

b. The supervisor shall verify that all required tests have been performed, that all procedures have been followed, and that required equipment is available and used before allowing entry into confined spaces. ()

c. The supervisor shall verify that rescue services are available and that the means for summoning them are available. ()

d. The supervisor shall remove unauthorized individuals who enter or attempt to enter the confined space during confined space operations. ()

e. The supervisor shall ensure that confined space entry operations remain consistent with the employer's program and that acceptable entry conditions are maintained. ()

09. Rescue and Emergency Services: ()

a. The employer shall ensure that each member of the employer's rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from confined spaces. ()

b. Each member of the employer's rescue service shall receive the training required for entrants in IDAPA 17.10.04.043.05. ()

c. When an employer (host employer) arranges to have persons other than the host employer's employees perform confined space rescue, the host employer shall: inform the rescue service of the hazards they may confront when called on to perform rescue at the host employer's facility, and provide the rescue service with access to all confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations. ()

d. Each member of the rescue service shall practice making confined space rescues at least once every twelve (12) months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual or representative confined spaces. ()

e. Each member of the rescue service shall be trained in basic first-aid and in cardiopulmonary resuscitation (CPR). ()

f. To facilitate non-entry, retrieval systems or methods shall be used whenever an entrant enters a confined space, unless the retrieval equipment would increase the overall risk of confined space entry or would not contribute to the rescue of the entrant. ()

g. Retrieval systems shall meet the following requirements: each entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near the shoulder level, or above the entrant's head, (wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative); The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the confined space in such a manner that rescue can begin as soon as the attendant becomes aware that rescue is necessary; a mechanical device shall be available to retrieve personnel from vertical type confined spaces more than five (5) feet deep. ()

h. If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the work-site, that MSDS or other similar written information shall be made available to the medical facility treating the exposed entrant. ()

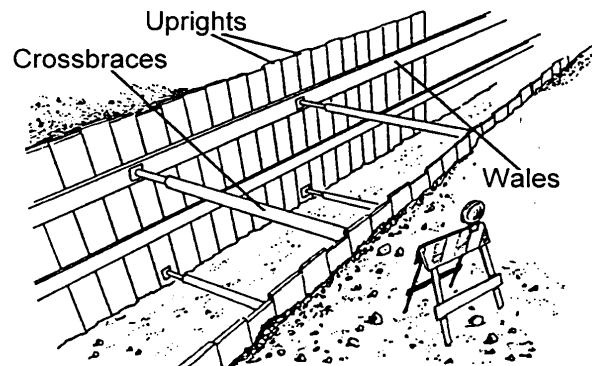
044. SAFETY REQUIREMENTS FOR EXCAVATIONS.

01. Scope: ()
- a. Excavations shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()
- b. This section applies to all open excavations made in the earth's surface. Excavations shall include trenches. ()
02. Definitions Applicable to this Section: ()
- a. Accepted Engineering Practices are those requirements which are compatible with standards required by a licensed professional engineer. ()
- b. Aluminum Hydraulic Shoring is a pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (wales). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins. See Figure 044.02-A. ()
- c. Bell Bottom Pier Hole is a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a belled shape. ()
- d. Benching (Benching System) is a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels. ()
- e. Cave-In is the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or other wise injure and immobilize a person. ()
- f. Cemented Soil is a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand size sample cannot be crushed into powder or individual soil particles by finger pressure. ()
- g. Cohesive Soil is clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, clay, and organic clay. ()
- h. Cross Braces are the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales. See Figure 044.02-A. ()
- i. Dry Soil is soil that does not exhibit visible of moisture content. ()
- j. Excavation is any man made cut, cavity, trench, or depression in the earth's surface, formed by earth removal. ()
- k. Faces or Sides are the vertical or inclined earth surfaces formed as a result of excavation work. ()
- l. Failure is the breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities. ()
- m. Fissured is a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface. ()

- n. Granular soil is gravel, sand, or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry. ()
- o. Hazardous Atmosphere is an atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury. ()
- p. Kick-out is the accidental release or failure of a cross brace. ()
- q. Layered System is two (2) or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered. ()
- r. Moist Soil is a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles. ()
- s. Plastic is a property of a soil which allows the soil to be deformed or molded without cracking, or appreciable volume change. ()
- t. Protective System is a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. ()
- u. Protective Systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection. ()
- v. Ramp is an inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials such as steel or wood. ()
- w. Saturated Soil is a soil in which the voids are filled with water. saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or shear vane. ()
- x. Sheeting is the members of a shoring system that retaining the earth in position and in turn are supported by other members of the shoring system. See Figure 044.02-A. ()
- y. Shield (Shield System) is a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either premanufactured or job built.()
- z. Shoring (Shoring System) is a structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins. ()
- aa. Sloping (Sloping System) is a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads. ()
- bb. Soil Classification System is, for the purpose of this Section, a method of categorizing soil and rock deposits in a hierarchy as follows: Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and characteristics of the deposits and the environmental conditions of exposure. ()
- cc. Stable Rock is natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. ()
- dd. Structural Ramp is a ramp built of steel or wood, usually used for vehicle access. Ramps made of

- soil or rock are not considered structural ramps. ()
- ee. Submerged Soil is soil which is underwater or is free seeping. ()
- ff. Support System is a structure such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation. ()
- gg. Tabulated Data is tables and charts approved by a licensed professional engineer and used to design and construct a protective system. ()
- hh. Trench (Trench Excavation) is a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than fifteen (15)-feet or less (measured at the bottom of the excavation), the excavation is also considered to be a trench. ()
- ii. Unconfined Compressive Strength is the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods. ()
- jj. Unstable Rock is considered to be stable when the rock material on the side or sides of the excavation is secured against cave-in or movement by rock bolts or by another protective system that has been designed by a licensed professional engineer. ()
- kk. Uprights are the vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called sheeting. See Figure 044.02-A. ()
- ll. Wales are horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth. See Figure 044.02-A. ()
- mm. Wet Soil is soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flake when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet. ()

FIGURE 044.02-A



03. General Requirements: ()

a. Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails shall be provided where walkways are thirty (30)-inches or more above lower levels. ()

b. Adequate barrier physical protection shall be provided at all remotely located excavations. All wells, pits, shafts, etc., shall be barricaded or covered. Upon completion of exploration and other similar operations, temporary wells, pits, shafts, etc., shall be backfilled. ()

04. Surface Encumbrances: ()

a. All surface encumbrances that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safe guard employees. ()

05. Underground Installations: ()

a. The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation. ()

b. Utility companies or owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to request to locate underground utility installations within twenty-four (24)-hours (unless a longer period is required by local law), or cannot establish the exact location of these installations, the employer may proceed, provided the employer does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used. ()

c. When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means. ()

d. While the excavation is open, underground installation shall be protected, supported or removed as necessary to safeguard employees. ()

06. Access and Egress: ()

a. Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed in accordance with the design. ()

b. Ramps and runways constructed of two (2) or more structural members shall have the structural members connected together to prevent displacement. ()

c. Structural members used for ramps and runways shall be of uniform thickness. ()

d. Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping. ()

e. Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments to the top surface to prevent slipping. ()

f. A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are 4-feet or more in depth so as to require no more than twenty-five (25)-feet of lateral travel for employees. ()

07. Exposure to Vehicular Traffic: ()

a. Employees exposed to public vehicular traffic shall be provided with, and shall wear, warning vests or other suitable garments marked with or made of reflectorized or high visibility material. ()

08. Exposure to Falling Loads: ()
- a. No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped to provide adequate protection for the operator during loading and unloading operations.()
09. Warning System for Mobile Equipment: ()
- a. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation. ()
10. Hazardous Atmospheres: ()
- a. The atmosphere of the excavation shall be tested to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions. ()
- b. Where oxygen deficiency (atmospheres containing less than nineteen and one-half (19.5)-percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavation greater than four (4)-feet in depth. ()
- c. Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than nineteen and one-half (19.5)-percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation. ()
- d. Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of twenty percent (20%) of the lower flammable limit of the gas. ()
- e. When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe. ()
11. Emergency Rescue Equipment: ()
- a. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use. ()
- b. Employees entering bell bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials, and shall be individually attached at all times while the employee(s) wearing lifeline is in the excavation. ()
12. Protection from Hazards Associated with Water Accumulation: ()
- a. Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline. ()
- b. If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.()

c. If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with IDAPA 17.10.04.044.12. ()

13. Stability of Adjacent Structures: ()

a. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of employees. ()

b. Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except when: a support system, such as underpinning, is provided to ensuring the safety of employees and the stability of the structure; or the excavation is in stable rock; or a licensed professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or a licensed professional engineer has approved the determination that such excavation work will not pose a hazard to employees. ()

c. Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from possible collapse of such structures. ()

14. Protecting Employees from Loose Rock or Soil: ()

a. Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection. ()

b. Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2-feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary. ()

c. Employees on excavations four (4)-feet or deeper shall wear head protection. ()

15. Inspections: ()

a. Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated. ()

b. Where the competent person finds evidence of a situation that could result in a possible cave in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. ()

16. Protection of Employees in Excavations: ()

a. Each employee in an excavation shall be protected from cave ins by an adequate protective system designed in accordance with IDAPA 17.10.04.044.17 and 044.18 except when: excavations are made entirely in stable rock; or excavations are less than 5-feet in depth and examination of the ground by a competent person provides no indication of a potential cave in. ()

b. Protective systems shall have the capacity to resist without failure all loads that are intended or

could reasonably be expected to be applied or transmitted to the system. ()

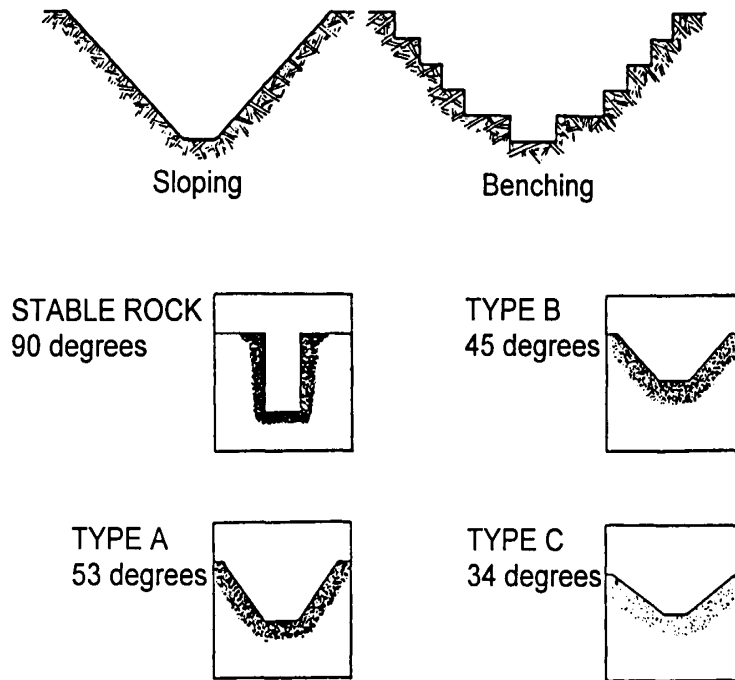
17. Design of Sloping and Benching Systems: ()

a. Employees shall not be permitted to work on faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment. ()

b. The slopes and configurations of sloping and benching systems shall be selected and constructed by the employer or designee and shall be in accordance with the requirements of one (1) of the following alternatives. ()

c. Option - one (1) Excavations shall be sloped at an angle not steeper than one and one-half (1 1/2)-horizontal to one (1)-vertical (thirty-four (34)-degrees measured from the horizontal), unless the employer uses one of the other options listed below. This sloping shall be excavated to form configurations that are in accordance with slopes shown for type C soil in Figure 044.17-A. ()

FIGURE 044.17-A



d. Option - two (2) Maximum allowable slopes, and allowable configurations for sloping and benching systems, shall be determined in accordance with conditions and requirements of IDAPA 17.10.04.044.22 and 29CFR1926 Subpart P Appendix B, Sloping and Breaching. ()

e. Option - three (3) Designs of sloping or benching systems shall be selected from and in accordance with tabulated data, such as tables and charts. The tabulated data shall be in written form and shall include all of the following: identification of the parameters that affect the selection of a sloping or benching system drawn from such

data; identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe; and explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data. At least 1-copy of the tabulated data which identifies the licensed professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to representatives of the Department upon request. ()

f. Option - four (4) Sloping and benching systems not utilizing options one (1), two (2), or three (3) shall be approved by a licensed professional engineer. ()

g. Designs shall be in written form and shall include at least the following: the magnitude of the slopes that were determined to be safe for the particular project; the configurations that were determined to be safe for the particular project; and the identity of the registered licensed engineer approving the design. ()

h. At least one (1) copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite, but a copy shall be made available to Department representatives upon request. ()

18. Design of Support Systems: ()

a. Designs of support systems, shield systems, and other protective systems shall be selected and constructed by the employer or designee and shall be in accordance with the requirements of this subsection. ()

b. Option - one (1) Designs for timber shoring in trenches shall be determined in accordance with the conditions and requirements set forth in IDAPA 17.10.04.044.22 and 29CFR1926 Subpart P Appendix C, Timber Shoring for Trenches. Designs for aluminum hydraulic shoring in trenches shall be determined in accordance with the conditions and requirements set forth in IDAPA 17.10.04.044.22 and 29CFR1926 Subpart P Appendix D, Aluminum Hydraulic Shoring for Trenches. ()

c. Option - two (2) Designs of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer. Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval. Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite, but a copy shall be made available to representatives of the Department upon request. ()

d. Option - three (3) Designs of support systems, shield systems, or other protective systems shall be selected from and be in accordance with tabulated data, such as tables and charts. The tabulated data shall be in written form and shall include all the following: identification of the parameters that affect the selection of a protective system drawn from such data; identification of the limits of use of the data; explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data. At least one (1) copy of the tabulated data, which identifies the licensed professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite, but a copy of the data shall be made available to representatives of the Department upon request. ()

e. Option - four (4) Sloping and benching systems not utilizing options one (1), two (2), or three (3) shall be approved by a licensed professional engineer. Designs shall be in written form and shall include the following: a plan indicating the size, types, and configurations of the materials to be used in the protective system; and the identity of the licensed registered professional engineer approving the design. At least one (1) copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, but a copy of the design shall be made available to representatives of the Department upon request. ()

19. Materials and Equipment: ()

a. Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function. ()

b. Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards. ()

c. When material or equipment that is used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service, and shall be evaluated and approved by a licensed professional engineer before being returned to service. ()

20. Installation and Removal of Support: ()

a. Members of support systems shall be securely connected together to prevent sliding, falling, kick-outs, or other predictable failure. ()

b. Support systems shall be installed and removed in a manner that protects employees from cave ins, structural collapses, or from being struck by members of the support system. ()

c. Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system. ()

d. Removal shall begin at, and progress from the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave in of the sides of the excavation. ()

e. Backfilling shall progress with the removal of support systems from excavations. ()

f. Excavation of material to a level no greater than two (2)-feet below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications, while the trench is open, of a possible loss of soil from behind or below the bottom of the support system. ()

g. Installation of a support system shall be closely coordinated with the excavation of trenches. ()

21. Shield Systems: ()

a. Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand. ()

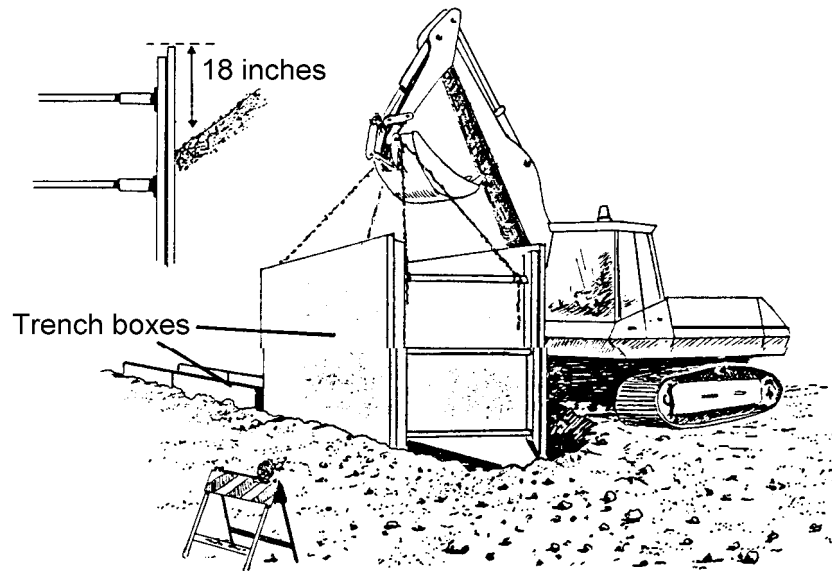
b. Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads. ()

c. Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields. ()

d. Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically. ()

e. Shields shall project at least eighteen (18)-inches above the lowest point where the excavation face begins to slope. See Figure 044.21-A. ()

FIGURE 044.21-A



f. Excavations of earth material to a level not greater than two (2) feet below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and where there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield. ()

22. Soil Classification: ()

a. This subsection describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. ()

b. Each soil and rock deposits shall be classified by a competent person as Stable Rock, Type A, Type B, or Type C in accordance with the requirements of IDAPA 17.10.04.044.22.c., 044.22.d., and 044.22.e. ()

c. Type A soils are cohesive soils with an unconfined, compressive strength of one and one-half (1.5)-ton per square foot or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, and in some cases, silty clay loam, and sandy clay loam. Cemented soils such as caleche and hard pan are also considered Type a soil. However, no soil is type A if: the soil si fissured; or the soil is subject to vibration from heavy traffic, pile driving, or similar effects; or the soil has been previously disturbed; or the soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four (4)-horizontal to one (1)-vertical or greater; or the material is subject to other factors that would require it to be classified as less stable material. See Figure 044.22-A. ()

d. Type B soils are cohesive soils with an unconfined, compressive strength greater than one-half (0.5)-tons per square foot but less than one and one-half (1.5)-tons per square foot or granular cohesionless soils including angular gravel (similar to crushed rock), silt, silt loam, sandy loam, and in some cases, silty clay loam, and sandy clay loam. Type B soils shall also include previously disturbed soils (except those which would otherwise be classified as Type C soil); soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; dry rock that is not stable; or material that is part of a slope, layered system where the layers dip into the excavation on a slope less steep than four (4)-horizontal to one (1)-vertical, but only if the material would otherwise be classified as Type B. See Figure 044.22-A. ()

e. Type C soils are cohesive soils with an unconfined, compressive strength of zero point five (0.5)-tons per square foot or less; or granular soils including gravel, sand, and loamy sand; or submerged soil or soil from

which water is freely seeping; submerged rock that is not stable; or material in a sloped, layered system where the layers dip into the excavation or a slope of four (4)-horizontal to one (1)-vertical or steeper. See Figure 044.22-A.

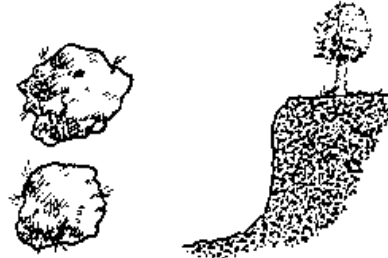
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FIGURE 044.22-A

Stable Rock
Solid mineral matter



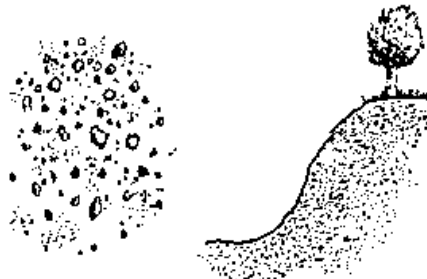
Type A
Cohesive soils, such as clay, silty clay, and hardpan



Type B
Granular soils, silt, sandy loam, unstable rock, any unstable or fissured Type A soil



Type C
Gravel, loamy soil, submerged soil, sand, and any soil that is part of a layered, steeply sloped system



f. The classification of the deposits shall be made based on the results of at least one (1) visual and at least one (1) manual analysis. Such analyses shall be conducted by a competent person using tests described in IDAPA 17.10.04.044.22.k. and 044.22.m., or in other recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Department of Agriculture textural classification system.

()

g. The visual and manual analyses, such as those as being acceptable in IDAPA 17.10.04.044.22.f., shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits. ()

h. In a layered system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer. ()

i. If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances. ()

j. Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material. ()

k. The following observations and determinations shall be made: observe samples of soil that are excavated and soil in the sides of the excavation and estimate the range of particle sizes and relative amounts of the particle sizes, (Soil that is primarily composed of fine grained material is cohesive material and soil composed primarily of coarse grained sand or gravel is granular material.); observe soil as it is excavated, soil that remains in clumps is cohesive, (Soil that breaks up easily and does not stay in clumps is granular material.); observe the side of the opened excavation and the surface area adjacent to the excavation for crack like openings such as tension cracks that could indicate fissured material, (If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.); observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil; observe the open side of the excavation to identify layered systems, (Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.); observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table; and observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face. ()

l. Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly. ()

m. The following tests and determinations shall be made: plasticity test - mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as one-eighth (1/8)-inch in diameter, (Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a two (2)-inch length of one-eighth (1/8)-inch thread can be held on one end without tearing, the soil is cohesive.); dry strength test - if the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt), (If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand, or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.); thumb penetration test - can be used to estimate the unconfined compressive strength of cohesive soils, (This test is based on the thumb penetration test on ASTM D2488.) (Type A soils can be penetrated by the thumb only with very great effort. Type C soils can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test shall be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences such as rain or flooding, the classification of the soil must be changed accordingly.); other strength tests - estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand operated shearvane; drying test - is to differentiate between cohesive material with fissures, unfissured cohesive material, (The procedure for the drying test involves drying a sample of soil that is approximately one (1)-inch thick and six (6)-inches in diameter until it is thoroughly dry: if the sample develops cracks as it dries, significant fissures are indicated; samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as an unfissured cohesive material and the unconfined compressive strength shall be determined. If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried

clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular. ()

045. -- 999. (RESERVED).

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.05 - GENERAL SAFETY AND HEALTH STANDARDS-PERSONAL PROTECTION
DOCKET NO. 17-1005-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 28, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards dealing with personal protective equipment for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 17-1005-9601

IDAPA 17
TITLE 10
Chapter 05

17.10.05 - GENERAL SAFETY AND HEALTH STANDARDS -- PERSONAL PROTECTION

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72-508, 72-720, 72-721, 72-722, and 72-723, Idaho Code ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 05, General Safety and Health Standards --Personal Protection. For purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as

defined in Sections 72-205 and 72-207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts, and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing their official duties. ()

02. County/City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteers. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service at by a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72-722 and 72-714 through 72-718, Idaho Code. ()

004. -- 049. (RESERVED).

050. PERSONAL PROTECTIVE EQUIPMENT.

01. Scope: ()

02. Definitions Applicable to this Section: ()

a. Facepiece is the portion of a respirator that covers the wearer's nose and mouth in a half-mask facepiece or nose, mouth, and eyes in a full facepiece. It is designed to make a gas-tight or dust-tight fit with the face and includes the headbands, exhalation valve(s) and connections for air-purifying device or respirable-gas source or both. ()

b. Respirator is an apparatus worn over the face to protect the wearer from inhalation of harmful atmospheres. ()

03. General Requirements: ()

a. Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation, or physical

contact. ()

b. Equipment. Personal safety equipment or clothing such as non-prescription safety glasses, prescription safety glasses, hard hats, ear protection, respirators, rubber gloves, rubber boots, safety shoes, leggings, aprons, safety harnesses, positioning belts, life lines, and buoyant vests, when exposed to hazards where such devices may be expected to prevent injury, all of which equipment, except safety shoes and prescription safety glasses, shall be made without cost to the employee, and where safety shoes and prescription safety glasses are made available by the employer, the same shall be provided at cost price to the employee. ()

c. Any safety equipment or apparel so furnished by the employer as required above shall, upon termination of employment of any employee, be immediately returned to the employer. ()

d. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper fit, maintenance, and sanitation of such equipment. ()

e. All personal protective equipment shall be of safe design and construction for the work to be performed. ()

f. The employer shall assess the workplace to determine if hazards are present, or likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall: select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazards assessment; communicate the selection decision to each affected employee; and , select PPE that properly fits each affected employee. The employer shall use material safety data sheets, product labels, operators manuals, industry standards, this standard, and any other applicable nationally recognized standards in performing the workplace hazard assessment. ()

g. Defective and damaged personal protective equipment shall not be used. ()

h. The employer shall provide training to each employee who is required by this standard to use personal protective equipment. Each such employee shall be trained to know at least the following: when personal protective equipment is necessary; what personal protective equipment is necessary; how to properly don, doff, adjust, use, and wear personal protective equipment; the limitation of the personal protective equipment; and the proper care, maintenance, useful life , and disposal of the personal protective equipment. Each affected employee shall demonstrate an understanding, ability, and skill required by this subsection, to use personal protective equipment properly, before being allowed to perform work requiring the use of personal protective equipment. When the employer has reason to believe that any affected employee, who has already been trained, does not have the understanding and skill required by this subsection, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where: changes in the workplace render previous training obsolete; or changes in the types of personal protective equipment to be used render previous training obsolete; or inadequacies in an affected employee's knowledge or use of assigned personal protective equipment indicate that the employee has not retained the requisite understanding or skill. ()

04. Eye and Face Protection: ()

a. Protective eye and face equipment shall be required and used where there is a reasonable probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of eye and face protector suitable for the work to be performed, and employees shall use such protectors. No unprotected person shall knowingly be subjected to a hazardous environmental condition. Suitable eye and face protectors shall be provided where machines or operations present the hazard of flying particles, molten metal, glare, liquid chemicals, acids or caustic liquids, liquids with biological contamination, chemical gases or vapors, injurious light radiation, or a combination of these hazards. ()

b. Each affected employee shall use appropriate eye and face protection when exposed to eye and face hazards. ()

c. Each affected employee shall use eye protection that provides side protection when there is a hazard from flying objects. Detachable side protection (e.g. clip-on or slide-on side shields) meeting pertinent

requirements of this subsection are acceptable. ()

d. Each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or shall wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses. ()

e. Eye and face personal protective equipment shall be distinctly marked to facilitate identification of type of protection and manufacturer. ()

f. Eye and face protectors shall: provide adequate protection against the particular hazards for which they are designed; be reasonably comfortable when worn under the designated conditions; fit snugly and shall not unduly interfere with the movement of the wearer; be durable; be capable of being disinfected; be easily cleanable. ()

g. Protectors shall be kept clean and in good repair. ()

h. When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed. ()

i. Each affected employee shall use protective equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation, see Table 050.04-A. ()

| TABLE 050.04-A | | | |
|--|--------------------------------|--------------------|---|
| FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY | | | |
| Operations | Electrode Size 1/32 in. | Arc Current | Minimum¹ Protective Shade |
| Shielded metal arc welding | less than 3 | less than 60 | 7 |
| | 3 - 5 | 60 - 160 | 8 |
| | 5 - 8 | 160 - 250 | 10 |
| | more than 8 | 250 - 550 | 11 |
| Gas metal arc welding and flux cored arc welding | | less than 60 | 7 |
| | | 60 - 160 | 10 |
| | | 160 - 250 | 10 |
| | | 250 - 500 | 10 |
| Gas Tungsten arc welding | | less than 50 | 8 |
| | | 50 - 150 | 8 |
| | | 150 - 500 | 10 |
| Air carbon | (light) | less than 500 | 10 |
| Arc cutting | (heavy) | 500 - 1000 | 11 |

| TABLE 050.04-A | | | |
|---|--------------------------------|--------------------|---|
| FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY | | | |
| Operations | Electrode Size 1/32 in. | Arc Current | Minimum¹ Protective Shade |
| Plasma arc welding | | less than 20 | 6 |
| | | 20 - 100 | 8 |
| | | 100 - 400 | 10 |
| | | 400 - 800 | 11 |
| Plasma arc cutting | (light) ² | less than 300 | 8 |
| | (medium) ² | 300 - 400 | 9 |
| | (heavy) ² | 400 - 800 | 10 |
| Torch brazing | | | 3 |
| Torch soldering | | | 2 |
| Carbon arc welding | | | 14 |
| Gas Welding | | | |
| Light | under 1/8 | under 3.2 | 4 |
| Medium | 1/8 to 1/2 | 3.2 to 12.7 | 5 |
| Heavy | over 1/2 | over 12.7 | 6 |
| Oxygen cutting | | | |
| Light | under 1 | under 25 | 3 |
| Medium | 1 to 6 | 25 to 150 | 4 |
| Heavy | over 6 | over 150 | 5 |
| ¹ As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation. | | | |
| ² These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the work piece | | | |

j. Protective eye and face devices purchased after July 5, 1994 shall comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection," or shall be demonstrated by the employer to be equally effective. Protective eye and face protection purchased before July 5, 1994 shall comply with ANSI Z87.1-1968, "American National Standard for Occupational and Educational Eye and Face Protection," or shall be demonstrated by the employer to be equally effective. ()

05. Respiratory Protection: ()

a. Permissible practice. In the control of those occupational diseases caused by breathing air

contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials.) When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements: ()

b. Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in IDAPA 17.10.050.05.d. ()

c. The employee shall use the provided respiratory protection in accordance with instructions and training received. ()

d. Requirements for a minimally acceptable respiratory protection program shall include the following: written standard operating procedures governing the selection and use of respirators shall be established; respirators shall be selected on the basis of hazards to which the worker is exposed; the user shall be instructed and trained in the proper use of respirators and their limitations; respirators shall be regularly cleaned and disinfected; those issued for the exclusive use of one (1) worker shall be cleaned after each day's use, or more often if necessary; where practicable, the respirators shall be assigned to individual workers for their exclusive use; those used by more than one (1) worker shall be thoroughly cleaned and disinfected after each use; respirators shall be stored in a convenient, clean and sanitary location; respirators used routinely shall be inspected during cleaning, worn or deteriorated parts shall be replaced; respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use; appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained; there shall be regular inspection and evaluation to determine the continued effectiveness of the program; persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. (The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically, for instance, annually); respirators shall be selected from among those jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. ()

e. Selection of respirators. Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969. ()

f. Air quality. Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing Air shall meet at least the requirements of the specification for graded breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966.* Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen shall not be used with air line respirators. *This document describes the specification requirements for air, including atmospheric air and air synthesized by blending oxygen and nitrogen in the proper proportions. It is different from other gas specifications because atmospheric air is not a manufactured product but is naturally occurring. Atmospheric air contains a large variety of trace constituents on many of which it is impractical to set individual limits. However, this specification qualifies certain grades of air by limiting the concentrations of specific trace constituents. ()

g. Breathing air may be supplied to respirators from cylinders or air compressors. Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation 49 CFR Part 178. The compressor for supplying air shall be equipped with necessary safety and standby devices described in this item. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbet beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in the event of compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall be equipped with suitable in-line air purifying absorbent beds, filters, high temperature alarm, and carbon monoxide alarm. ()

h. Air lines couplings shall be incompatible with outlets for other gas or nonbreathing air systems to

prevent inadvertent supplying of air line respirators with nonrespirable gases or oxygen. ()

i. Breathing gas containers shall be marked in accordance with American National Standard ANSI/CGA C-4; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained. ()

06. Use of Respirators: ()

a. Standard written procedures shall be developed for respirator use. These procedures shall include all information and guidance necessary for their proper selection, use and care. Possible emergency and routine uses of respirators shall be anticipated and planned for in the standard written procedures. ()

b. The correct respirator shall be specified for each job. The respirator type shall be specified in the work procedures by a qualified individual supervising the respiratory protection program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual shall be durably marked to indicate to whom it was assigned. This mark shall not affect the respirator performance in any way. The date of respirator issuance shall be recorded. ()

c. Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators. ()

d. In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one (1) additional person shall be present. Communications (visual, voice or signal line) shall be maintained between both or all individuals present. Planning shall be such that one (1) individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency. ()

e. When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby person(s) with suitable self-contained breathing apparatus must be present at the nearest fresh air source with suitable rescue equipment. ()

f. Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. A standby person(s) with suitable self-contained breathing apparatus shall be at the nearest fresh air source for emergency rescue. ()

g. Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned and maintained. ()

h. For safe use of respirators, it is essential that both supervisors and workers be properly instructed in respirator selection, use, and maintenance and shall be instructed by persons trained to so instruct. Training shall provide the workers an opportunity to handle the respirator, have it fitted properly, test its face piece-to-face seal, wear it in normal air for a long familiarity period, and finally, to wear it in a test atmosphere. ()

i. The employer shall provide fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn under the following conditions: a growth of beard, sideburns, a skull cap, or temple pieces of glasses that projects under the face-piece. Also, the absence of one (1) or both dentures can seriously affect the fit of a face-piece. The worker's diligence in observing these factors shall be evaluated by periodic check. To assure the proper protection, the face-piece shall be checked by the wearer each time he puts on the respirator. This may be done by following the manufacturer's face-piece fitting instructions. ()

j. Providing respiratory protection for individuals wearing corrective eye glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full face-piece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's

head. Wearing of contact lenses in contaminated atmospheres with a respirator shall be allowed. Systems have been developed for mounting corrective lenses inside full face-piece respirator. When a worker must wear corrective lenses as part of the face-piece, the face-piece and lenses shall be fitted by qualified individuals to provide good vision comfort and a gas-tight seal. ()

k. If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the face-piece. Proper selection of equipment will minimize or avoid the problem. ()

07. Maintenance and Care of Respirators: ()

a. A program for maintenance and care of respirators shall be initiated and be adjusted to the type of work place, working conditions, and hazards involved and shall include the following basic services: inspection for defects (including a leak check); cleaning and disinfecting; repair; and storage. ()

b. Respiratory equipment shall be properly maintained to retain its original effectiveness. All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition. Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly. Respirator inspection shall include a check of the tightness of the connections and the condition of the face-piece, head bands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage. ()

c. A record shall be kept of inspection dates and findings for all respirators. The inspection record for respirators maintained for emergency use shall be kept with the respirator. ()

d. A respirator that has been used shall be cleaned and disinfected before it is issued. Routinely used respirators shall be collected, cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker shall be briefed on the cleaning procedure and be assured of receiving a clean and disinfected respirator. ()

e. Respirators maintained for emergency use shall be cleaned and disinfected after each use. ()

f. Replacement or repairs shall be done only by experienced person with parts designed for the respirator. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations. No interchange of parts or fittings from one type of respirator to another shall be made. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustments or repair. ()

g. After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments shall be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators shall not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons. Respirators shall be packed or stored so that the facepiece and valve assemblies will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position. NOTE: Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid. ()

08. Identifications of Gas Mask/Respirator Canisters: ()

a. The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code. ()

b. Employers or their representative who issue or use gas masks/respirators falling within the scope of this subsection shall see that all gas mask/respirator canisters purchased or used by them are properly labeled and

colored in accordance with these requirements before they are placed in service and that the labels and color codes are properly maintained at all times thereafter until the canisters have completely served their purpose. ()

c. On each canister shall appear in bold letters the following:

Canister for or Type N Gas Mask

Canister. (Name for atmospheric contaminant)

In addition, essentially the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than percent by volume of .
(Name of atmospheric contaminant)

All of the markings specified above should be placed on the most conspicuous surface or surfaces of the canister. ()

d. Canisters having a special high-efficiency filter for protection against radio-nuclide and other highly toxic particles shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of the canister. The degree of protection shall be marked as the percent of penetration of the canister filter medium by a zero point three (0.3)-micron diameter dioctylphthalate (DOP) smoke at a flow rate of eight five (85) liters per minute. ()

e. Each canister shall have a label warning that gas masks/respirators should be used only in atmospheres containing sufficient oxygen to support life (at least sixteen (16) percent by volume), since gas mask/respirator canisters are only designed to neutralize or remove contaminants from the air. ()

f. Each gas mask canister shall be coated with a distinctive color or combination of colors indicated in Table 050.08-A. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, facing, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes. ()

| TABLE 050.08-A | |
|---|--|
| ATMOSPHERIC CONTAMINANTS TO BE PROTECTED AGAINST | COLORS ASSIGNED* |
| Acid Gases | White |
| Hydrocyanic Acid Gas | White with 1/2-inch Green Stripe completely around the canister near the bottom |
| Chlorine Gas | White with 1/2-inch Yellow Stripe completely around the canister near the bottom |
| Organic Vapors | Black |
| Ammonia Gas | Green |
| Acid Gases and Ammonia Gas | Green with 1/2-inch White Stripe completely around the canister near the bottom |
| Carbon Monoxide | Blue |
| Acid Gases and Organic Vapors | Yellow |
| Hydrocyanic Acid Gas and Chloropicrin Vapor | Yellow with 1/2-inch Blue Stripe completely around the canister near the bottom |
| Acid Gases, Organic Vapors, and Ammonia Gases | Brown |

| TABLE 050.08-A | |
|--|--|
| ATMOSPHERIC CONTAMINANTS TO BE PROTECTED AGAINST | COLORS ASSIGNED* |
| Radioactive Materials, excepting Tritium and Noble Gases | Purple (Magenta) |
| Asbestos Fibers | Purple (Magenta) |
| Particulates (Dusts, Fumes, Mists, Fogs, or Smokes) in combination with any of the above Gases or Vapors | Canister color for contaminant, as designated above, with ½-inch Gray Stripe completely around the canister near the top |
| All of the above atmospheric Contaminants | Red with ½-inch Gray Stripe completely around the canister near the top |
| * Gray shall not be assigned as the main color for a canister designed to remove acids or vapors. | |

NOTE: Orange shall be used as a complete body or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford. ()

09. Occupational Head Protection: ()

a. Each affected employee shall wear protective helmets when working in areas where there is a potential for injury to the head. ()

b. Protective helmets designed to reduce electrical shock hazard shall be worn by each effected employee when near exposed electrical conductors which could contact the head. ()

c. Helmets for the protection of employees against impact, penetration of falling and flying objects, and from limited electric shock and burn shall meet the specifications contained in American National Standards Institute, Z89.1, Protective Head-wear for Industrial Workers. ()

d. Persons working in the shops around machinery or in locations which present a hair catching or hair fire hazard shall wear caps or other types of head covering which completely covers the hair. Caps with metal buttons or metal visors shall not be worn around electrical hazards. ()

e. Helmets shall be worn by employees who work around or under scaffolds or other overhead structures or who are otherwise exposed to the hazards of falling materials and propelled objects. ()

10. Personal Flotation Devices: ()

a. Employees working on, over, or along water where the danger of drowning exists shall be provided with and shall wear approved personal flotation devices. ()

b. Personal flotation devices shall be of types approved by the United States Coast Guard, pursuant to 46CFR 160, Coast Guard Life Saving Equipment Specifications and 23CFR 175, Personal Flotation Devices. Personal flotation devices are categorized into types according to their performance characteristics: Type I - Life Preserver - has the greatest required buoyancy, twenty-two (22)-pounds, and is designed to turn most unconscious persons in the water from face down to a vertical and slightly backward position, and maintain them in that position. The Type I - Life Preserver is suitable for all waters, especially where there is a possibility of delayed rescue. The Type I - Life Preserver is easiest to don in an emergency because it is reversible and has a maximum of three (3) fasteners. The Type I - Life Preserver is the bulkiest and most uncomfortable to wear. Type II - Buoyant Vest - has fifteen point five (15.5) pounds of buoyancy, and is designed to turn the wearer to a vertical and slightly backward position in the water. The turning action is not as pronounced as with the Type I Life Preserver and will not turn as many persons under the same conditions as the Type I - Life Preserver. The Type II - Buoyant Vest is normally sized for ease of emergency donning. The Type II - Buoyant Vest is usually more comfortable to wear. Type III - Marine Buoyant Device - has fifteen point five (15.5) pounds of buoyancy, and is not designed to turn an unconscious victim

to a vertical or slightly backward position in the water. However, once a person assumes this position, this flotation device will maintain the position. The Type III - Marine Buoyant Device is normally the most comfortable to wear. Type IV - Throwable Flotation Device - is designed to be grasped or held by the user or thrown to a person in the water. This type of flotation device is suitable only where there is probability of quick rescue. The effects of fatigue or hypothermia make it very difficult to hold on to a Type IV flotation device for an extended period. The Type IV flotation device is a poor choice for non-swimmers. Type V - Restricted Special Purpose Flotation Devices - are approved only for the purposes listed on the label. ()

c. Employees are not considered exposed to danger of drowning when: the water depth is known to be less than chest deep on the exposed individual; working behind standard height and strength guardrails; working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water; wearing approved safety harness belts with lifeline attached so as to preclude the possibility of falling into the water. ()

d. Type III, Type V, or better personal flotation devices shall be provided and worn by all persons wherever there is a drowning hazard: when on floating pipelines, pontoons, rafts, or float stages; when alone at night where there are drowning hazards regardless of other safeguards provided; and in skiffs, small boats, or launches. ()

e. Requirements for personal flotation devices in boats are as follows: boats less than sixteen (16)-feet in length, all canoes, and kayaks shall be equipped with one (1) Type I, II, III, or V for each person on board; boats sixteen (16)-feet or over in length must be equipped with one (1) Type I, II, III, or V for each person on board plus one (1) Type IV throwable flotation device in case someone falls overboard; a Type V personal flotation device may be carried in lieu of any personal flotation device but only if the Type V is approved for the activity in which the boat is being used. ()

f. Ski belts and inflatable type personal flotation devices are specifically prohibited. ()

g. Prior to and after each use, personal flotation devices shall be inspected for defects which would reduce their designed effectiveness. Flotation devices shall be periodically tested for buoyancy. Buoyancy material shall be inspected for absorption of or retention of water. Straps shall be examined to make sure they are attached securely. The buckles and metal fasteners must be functional and free of rust. The fabric shall not be torn or ripped. Defective personal flotation devices shall not be used. ()

h. Personal flotation devices will last many years if given reasonable care. During winter storage, remove them from boats and work-sites. Always dry personal flotation devices before storing them. Store personal flotation devices in a dry, well ventilated accessible place. Do not store personal flotation devices near oil or grease as these materials deteriorate flotation devices reducing their performance. Never use personal flotation devices as boat fenders as this will crush them rendering them unusable. Personal flotation devices are survival equipment and shall be treated as such. ()

i. Life rings, buoys, and waterlights are required; along docks, walkways, or other fixed installations, or adjacent to open water more than five feet deep, approved life rings, buoys, or waterlights with line attached shall be provided; to be spaced at intervals not to exceed two hundred (200) feet and shall be kept in easily visible and readily accessible locations; when employees are assigned work at other casual locations where the exposure to drowning exists, at least one (1) approved life rings, buoys, and waterlights with line attached shall be provided in the immediate vicinity of the work assigned; when work is assigned over water where the vertical drop from an accidental fall would exceed twenty-five (25) feet, shall be subject to specific procedures as outlined in this subsection; to have lines attached and shall be at least ninety (90) feet in length, at least one fourth (1/4) inch in diameter and have a minimum breaking strength of five hundred (500) pounds; to be United States Coast Guard approved Type V personal flotation devices; along with attached lines must be maintained to retain at least seventy-five percent (75%) of their designed buoyancy and strength. ()

11. Safety Harness, Lifelines, Lanyards, and Nets: ()

a. Safety Harnesses, Lifelines, and Lanyards shall: be used only for employee safeguarding; be secured above the point of operations to an anchorage or structural member capable of supporting a minimal dead weight of five thousand four hundred (5,400) pounds; have drop forged or pressed steel cadmium plated hardware in

accordance with Type L, Class B plating specified in Federal Specification QQ-P-416 with smooth surfaces and free of sharp edges; have hardware (except rivets) capable of withstanding a tensile loading of four thousand (4,000) lbs. without cracking, breaking, or taking a permanent deformation; and be inspected periodically by the supervisor in charge and daily by the user. Any defective safety harnesses, life lines or lanyards shall be discarded or repaired before use. Lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of seven-eighths (7/8) inch wire core manila rope. For all other lifeline applications, a minimum, breaking strength of five thousand four hundred (5,400) lbs. shall be used. Safety belt lanyard shall be a minimum of one-half (1/2) inch nylon or equivalent with a maximum length to provide for a fall of not greater than 6 feet. The rope shall have a nominal breaking strength of two thousand four hundred (2,400) pounds. Safety belts are not approved for use. ()

b. Safety nets shall be provided when work places are more than twenty-five (25) feet above the ground or water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety harnesses are impractical. Where safety net protection is required by this subsection, operations shall not be undertaken until the net is in place and has been tested. Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working but in no case more than twenty-five (25)-feet below such level. Nets shall be hung with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test specified in this subsection. It is intended that only one (1) level of nets be required for bridge construction. Safety nets shall extend outward from the outermost projection of the work surface where employees are exposed, see Table 050.11-A. The mesh size of nets shall not exceed six by six (6 X 6) inches. All new nets shall meet accepted performance standards of seventeen thousand five hundred (17,500) foot pound minimum impact resistance as determined and certified by the manufacturer, and shall bear a label of proof test. Edge ropes shall provide a minimum breaking strength of five thousand (5,000) pounds. Forged steel safety hooks or shackles shall be used to fasten the net to its support. Connections between the net panels shall develop the full strength of the net. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Safety nets shall also be inspected after any occurrence which could affect the integrity of the safety net system. Materials, scrap pieces, equipment, and tools which have fallen into the safety net shall be removed as soon as possible from the net and at least before the next work shift. The drop-test shall consist of a four hundred (400)-pound bag of sand thirty (30) (+/- two (2))-inches in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not less than forty-two (42)-inches above that level. Defective nets shall not be used. ()

| TABLE 050.11-A | |
|--|---|
| Vertical distance from working level to horizontal plane of net | Minimum required horizontal distance of outer edge of net from the edge of the working surface |
| Up to 5 feet | 8 feet |
| More than 5 feet up to 10 feet | 10 feet |
| More than 10 feet | 13 feet |

c. Employees working over or near water where the danger of drowning exists, shall be subject to the provisions of IDAPA 17.10.05. 050.10. ()

12. Occupational Foot and Leg Protection: ()

a. Employees shall wear foot and/or leg protection for the work assigned and the hazards that may reasonably be encountered. ()

b. Workers who work in areas where there is a possibility of foot injury due to falling or rolling objects, or objects piercing the sole, and where employee's feet are exposed to electrical hazards shall wear safety-type footwear. Where safety-type footwear are made available by the employer, the same shall be provided at

no cost or at cost price to the employee. Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Protective Footwear, Z41. ()

c. Workers who work in areas where there is a possibility of falls due to slipping shall wear sharp caulk soled boots or other suitable footwear that will afford reasonable protection from slipping. ()

d. Special types or designs of shoes or foot guards shall be worn under those conditions where their use is required. ()

e. Leggings or high top boots of leather, rubber, or other suitable material shall be worn by climbers, persons exposed to hot substances, cryogenic materials, caustic or acid solutions, and where poisonous snakes may be encountered. ()

f. Employees who are required to operate chain saws shall wear ballistic nylon, leather, or equivalent protection covering each leg from upper thigh to boot top except when working from a bucket truck. ()

13. Electrical Protective Devices. ()

a. Electrical protective devices made of rubber shall meet the following requirements: blankets, gloves, and sleeves shall be produced by a seamless process; each item shall be clearly marked as specified in Table 050.13-A; markings shall be nonconducting and shall be applied in such a manner as not to impair the insulating qualities of the device; and markings on gloves shall be confined to the cuff portion of the glove. ()

| TABLE 050.13-A | |
|--|----------------|
| Classification | Marking |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| Non-ozone-resistant equipment other than matting | Type I |
| Ozone-resistant equipment other than matting | Type II |

b. Rubber protective devices for electrical workers shall conform to the requirements established in the American Society for Testing and Materials as specified in Table 050.13-B. ()

| TABLE 050.13-B | |
|--|-----------------|
| ITEM | STANDARD |
| Rubber Insulating Gloves | ASTM D 120 |
| Rubber Matting for use around Electric Apparatus | ASTM D 178 |
| Rubber Insulating Blankets | ASTM D 1048 |
| Rubber Insulating Covers | ASTM D 1049 |
| Rubber Insulating Line Hose | ASTM D 1050 |

| TABLE 050.13-B | |
|--|-----------------|
| ITEM | STANDARD |
| Rubber Insulating Sleeves | ASTM D 1051 |
| In-Service Care of Insulating Line Hose and Covers | ASTM D 478 |
| In-Service Care of Insulating Blankets | ASTM D 479 |
| In-Service Care of Insulating Gloves and Sleeves | ASTM D 496 |

c. Electrical protective devices shall be capable of withstanding the a-c proof-test voltage or the d-c proof-test voltage specified in Table 050.13-C. The proof test shall reliably indicate that the devices can withstand the voltage involved. The specifications for conducting the various tests for electrical protective devices is contained in the standards in Table 050.13-B. Equipment that has been subjected to a minimum breakdown voltage test shall not be used for electrical protection. Material used for Type II insulating equipment shall be capable of withstanding an ozone test, with no visible effects. The ozone test shall reliably indicate that the material will resist ozone exposure in actual use. Any visible signs of ozone deterioration to the material, such as checking, cracking, breaks, or pitting, is evidence of failure to meet the requirements for ozone-resistant material. ()

| TABLE 050.13-C | | |
|---------------------------|-------------------------------------|-------------------------------|
| Class of equipment | Proof-test A-C voltage rms V | Proof-test D-C voltage |
| 0 | 5,000 | 20,000 |
| 1 | 10,000 | 40,000 |
| 2 | 20,000 | 50,000 |
| 3 | 30,000 | 60,000 |
| 4 | 40,000 | 70,000 |

d. Electrical protective equipment shall be free of harmful physical irregularities that can be detected by tests or inspections required under this subsection. Surface irregularities that may be present on all rubber goods because of imperfections on forms or molds or because of inherent difficulties in the manufacturing process and that may appear as indentations, protuberances, or imbedded foreign material are acceptable under the following conditions: the indentation or protuberance blends into a smooth slope when the material is stretched; the foreign material remains in place when the insulating material is folded and stretches with the insulating material surrounding it. ()

e. Electrical protective equipment shall be maintained in a safe and reliable condition. The following specific requirements shall apply to insulating blankets, covers, line hose, gloves, and sleeves made of rubber: maximum use voltages shall conform to those listed in Table 050.13-D; insulating equipment shall be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage; insulating gloves shall be given an air test along with a physical inspection. Insulating equipment with any of the following defects shall not be used: a hole, tear, puncture, or cut; ozone cutting or ozone checking; an embedded foreign object; swelling, softening, hardening, or becoming sticky or inelastic; any other defect that damages the insulating properties of the equipment. Insulating equipment found to have other defects that might affect its insulating properties shall be removed from service and returned for testing. Insulating equipment failing to pass inspections or electrical tests may not be used by employees, except as follows: rubber insulating line hose may be used in shorter lengths with the defective portion cut off; rubber insulating blankets may be repaired using a compatible patch that results in physical and electrical properties equal to those of the blanket; rubber insulating

blankets may be salvaged by severing the defective area from the undamaged portion of the blanket (The resulting undamaged area may not be smaller than twenty-two (22)-inches by twenty-two (22)-inches for Class 1, 2, 3, and 4 blankets.); rubber insulating gloves and sleeves with minor physical defects, such as small cuts, tears, or punctures, may be repaired by the application of a compatible patch; rubber insulating gloves may also be repaired with a compatible liquid compound. The patched area of gloves and sleeves shall have the same electrical and physical properties equal to those of the surrounding material. Repairs to gloves are permitted only in the area between the wrist and the reinforced edge of the opening. Repaired insulating equipment shall be retested before it may be used by employees. The employer shall certify that electrical protective equipment has been tested. The certification shall identify the equipment that passes the test and the date it was tested. (Note: Marking of equipment or entering the results of the tests and the dates of testing into logs are two (2) acceptable means of meeting this requirement.) ()

f. Insulating equipment shall be cleaned as needed to remove foreign substances. Insulating equipment shall be stored in such a location and in such a manner as to protect it from light, temperature extremes, excessive humidity, ozone, and other injurious substances and conditions. ()

g. Protector gloves shall be worn over insulating gloves except as follows: protector gloves need not be used with class zero (0) gloves, under limited use conditions, where small equipment and parts manipulation necessitate unusually high finger dexterity (Note: Extra care is needed in the visual inspection of gloves and in the avoidance of handling sharp objects when protector gloves are not used.); any other class of glove may be used for similar work without protector gloves if the employer can demonstrate that the possibility of physical damage to the gloves is small and if the class of glove is one (1) class higher than that required for the voltage involved. Insulating gloves that have been used without protector gloves may not be used at the higher rated voltage until they have been tested. ()

h. Electrical protective equipment shall be subjected to periodic electrical tests. Test voltages and the maximum intervals between tests shall be in accordance with Table 050.13-D and Table 050.13-E. ()

| TABLE 050.13-D | | | |
|--|--|---|---|
| RUBBER INSULATING EQUIPMENT VOLTAGE REQUIREMENTS | | | |
| Class of equipment | Maximum use voltage¹ A-C-rms | Retest voltage² A-C-rms | Retest voltage² D-C-rms |
| 0 | 1,000 | 5,000 | 20,000 |
| 1 | 75,000 | 10,000 | 40,000 |
| 2 | 17,000 | 20,000 | 50,000 |
| 3 | 26,500 | 30,000 | 60,000 |
| 4 | 36,000 | 40,000 | 70,000 |
| ¹ If there is no multi-phase exposure in a system area and if the voltage exposure is limited to the phase-to-ground potential; or if the electrical equipment and devices are insulated or isolated or both so that the multi phase exposure on a grounded wye circuit is removed. | | | |
| ² The proof-test voltage shall be applied continuously for at least 1 minute, but no more than 3 minutes. | | | |

| TABLE 050.13-E | |
|---|--|
| RUBBER INSULATING EQUIPMENT TEST INTERVALS | |
| Type of equipment | When to test |
| Rubber insulating line hose | Upon indication that insulating value is suspect. |
| Rubber insulating covers | Upon indication that insulating value is suspect. |
| Rubber insulating blankets | Before first issue and every 12 months thereafter ¹ |
| Rubber insulating gloves | Before first issue and every 6 months thereafter ¹ |
| Rubber insulating sleeves | Before first issue and every 12 months thereafter ¹ |
| ¹ If the insulating equipment has been electrically tested but not issued for service, it may not be placed into service unless it has been electrically tested within the previous 12 months. | |

i Where switches or fuses of more than one hundred and fifty (150) volts to ground are not guarded during ordinary operations, suitable insulating floors, mats or platforms shall be provided on which the operator must stand while handling the switches. ()

14. Work Clothing: ()

a. Clothing shall be worn that is appropriate to the work being performed and conditions encountered. ()

b. Loose sleeves, cuffs, or other loose or ragged clothing shall not be worn near moving machinery. ()

c. Clothing with exposed metal buttons, metal belt buckles, metal visors, or other conductive materials shall not be worn around exposed electrical conductors. ()

d. Persons handling cryogenic materials shall: wear chemical splash goggles with a full coverage face shield; wear gloves designed for use with cryogenic materials; wear a loose fitting lab coat or jacket with long sleeves and a long apron with over-sleeve arm protection; open pockets, trouser cuffs, and similar places where a liquid spill might lodge shall be avoided. Any bare part of the body shall be protected while handling cryogenic materials. Never touch noninsulated cold equipment with any unprotected part of the body. ()

e. Clothing contaminated, saturated, or impregnated with flammable liquids, corrosive substances, cryogenic materials, irritants, biological contaminants, toxic materials, or oxidizing agents shall be removed immediately and not worn again until properly cleaned. Cleaning of contaminated, saturated, or impregnated clothing shall be accomplished at the employer's site in facilities specifically for this purpose or sent to a commercial facility capable of performing the required cleaning/decontamination. In no case will contaminated materials be cleaned in facilities used to clean non-contaminated clothing. ()

051. -- 999. (RESERVED).

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.08 - GENERAL SAFETY AND HEALTH STANDARDS-FIRE SAFETY
DOCKET NO. 17-1008-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 28, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards dealing with fire safety, fire extinguishing systems, alarm systems, and departments for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 17-1008-9601

IDAPA 17
TITLE 10
Chapter 08

17.10.08 - GENERAL SAFETY AND HEALTH STANDARDS -- FIRE SAFETY

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72-508, 72-720, 72-721, 72-722, and 72-723, Idaho Code ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 8, General Safety and Health Standards -- Fire Safety. For

purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as defined in Sections 72-205 and 72-207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts, and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing their official duties. ()

02. County/City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteers. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service of a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72-722 and 72-714 through 72-718, Idaho Code. ()

004. -- 059. (RESERVED).

060. FIRE SAFETY.

01. Scope: ()

a. This Section prescribes policies consistent with nationally recognized good practice for the safeguarding to a reasonable degree of life and property from the hazards of fire and explosion arising from the storage, handling and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the use or occupancy of facilities, buildings, or premises. ()

02. Definitions Applicable to this Section: ()

a. Combustible material is any material that will readily ignite when heat sources are present. ()

b. High Piled Combustible Storage are combustible materials in closely packed piles or combustible materials on pallets or in racks more than twelve (12)-feet in height. For certain special hazard commodities such as rubber tires, plastics, some flammable liquids, idle pallets, etc., the pile height may be as low as six (6)-feet. ()

03. General Requirements: ()

a. The employer shall develop a fire prevention plan. The fire prevention plan as a minimum shall

include the following: a list of major work place fire hazards and their proper handling and storage procedures; housekeeping procedures; potential ignition sources such as welding, smoking, etc., and their control procedures; evacuation procedures; and the type of fire protection equipment and systems installed which can control a fire. The fire prevention plan shall be kept in the workplace and made available for employee review. ()

b. The employer shall control accumulations of flammable and combustible waste material and residues so that they do not contribute to a fire emergency. ()

c. The employer shall provide training to employees to cover the following as a minimum: the fire hazards of the materials and processes to which employees are exposed; review those parts of the fire prevention plan which the employees must know to protect the employee in the event of an emergency, (This shall be accomplished upon initial assignment and annually. ()

d. The employer shall regularly and properly maintain equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. ()

e. The employer shall ensure that all fire alarm systems, fire suppression equipment and systems are regularly and properly maintained and are available for immediate use. ()

f. Fire drills shall be conducted according to occupancy as follows: Group A shall be conducted quarterly and shall be for employees only; Group E shall be conducted at least once each month during school sessions and shall include the complete evacuation of all persons from the building or portion thereof used for educational purposes (EXCEPTION: During severe weather, fire drills may be postponed.); Group I shall be conducted quarterly for each shift, shall include staff members only, and shall be initiated by either the activation of the fire alarm system or a coded public announcement; Group R (Division 1) shall be conducted quarterly for each shift and shall be for staff members only; Group R (Division 4) shall be conducted at varying times and under varying conditions to simulate conditions that could occur during a fire or other emergency. All other occupancies shall have a fire drill at least once per calendar year. ()

04. General Fire Safety Precautions ()

a. Storage of combustible materials shall be orderly and maintained two (2)-feet from the ceiling and not less than eighteen (18)-inches below sprinkler head deflectors. ()

b. Combustible or flammable materials shall not be stored in exit corridors or exit enclosures. ()

c. Combustible or flammable material shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms. ()

d. Combustible or flammable material shall not be stored in attics, in under floor spaces, or in concealed spaces unless such areas are protected by one (1)-hour fire resistive construction or fire sprinkler system. ()

e. Combustible material shall not be used as wall or ceiling decorations where they may contribute to the spread of fire within a room or area. ()

f. Textile wall coverings, to include carpeting and similar materials, when used as an interior wall finish, including materials such as those having a napped, tufted, looped, non-woven, woven, or similar surface shall comply with the following: they shall have a flame spread of twenty five (25) or less (Uniform Building Code Standard 8-1) and shall be protected by automatic fire sprinklers; or the wall coverings shall meet the acceptance criteria of Uniform Building Code Standard 8-2. ()

g. Fueled equipment, including but not limited to motor cycles, mopeds, lawn care equipment, and portable cooking equipment shall not be stored, operated, or repaired within a facility, building, or structure unless that facility, building, or structure meets the requirements for such use. ()

h. Combustible or flammable rubbish kept or accumulated within or adjacent to facilities, buildings,

or structures shall be stored in approved containers, in rooms, or vaults constructed of noncombustible materials.

()

i. Oily rags and similar materials shall be stored in metal, metal lined, or other approved containers equipped with tight-fitting covers.

()

j. Combustible or flammable rubbish stored in containers shall be removed from facilities, buildings, or structures not less than once each working day.

()

k. Dumpsters and rubbish containers with an individual capacity of one and one-half (1.5)-cubic yards or more shall not be stored in buildings or placed within five (5)-feet of combustible walls, wall openings, or combustible roof eave lines.

()

l. Cut or uncut weeds, grass, vines, and other vegetation shall be removed when determined to be a fire hazard. When the total removal of growth is impractical due to size or environmental factors, approved fuel breaks shall be established. Designated areas shall be cleared of combustible vegetation to establish the fuel breaks.

()

m. Lighted matches, cigarettes, cigars, or other burning objects shall not be discarded in such a manner that could cause ignition of other combustible materials.

()

n. Hot ashes, cinders, smoldering coals, greasy or oily materials shall not be deposited in a combustible receptacle or a receptacle used for or containing combustible materials. EXCEPTION: The separation distance to other combustible materials is allowed to be reduced to two (2) feet when the dangerous material is deposited in covered metal or noncombustible receptacles which are placed on a noncombustible floor, ground surface, or stand.

()

o. Chimneys used with fireplaces, incinerators, or other heating appliances in which solid or liquid fuel is burned shall be maintained with a spark arrester. EXCEPTION: Chimneys which are located more than two hundred (200) feet from any mountainous, brush-covered, or forest-covered.

()

p. Heating appliances shall be installed and maintained, as per their listing, so as not to create a hazard and shall have tip over protection.

()

q. Vacant facilities, buildings, structures, and properties shall be free of accumulations of combustible or hazardous materials. Vacant facilities, buildings, and structures shall be maintained, securely locked or barricaded to prevent entry by unauthorized persons.

()

r. Above ground gas meters, regulators, piping, or tanks exposed to vehicular damage due to proximity to alleys, driveways, parking areas, or work areas shall be appropriately protected.

()

s. Above ground fixed tanks used to store propane or other LPG products, flammable liquids, or other flammable gases shall have signs stating "NO SMOKING WITHIN 15 FEET".

()

05. Protection of and Access to Fire Appurtenances

()

a. Fire hydrants and other fire protection equipment, when exposed to vehicular damage, shall be suitably protected.

()

b. Posts, fences, vehicles, growth, trash, storage, and other materials shall not be placed or kept near fire hydrants, fire department inlet connections, or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately visible. A three (3)-foot minimum clear space shall be maintained around the circumference of fire hydrants, fire department inlet connections, and fire protection system control valves.

()

c. The fire department shall not be hindered from gaining immediate access to fire protection equipment or fire hydrants.

()

d. Fire lanes/access roads shall not be obstructed in any manner including parking of vehicles. The minimum required widths and clearances shall be maintained at all times. ()

06. Open Flames: ()

a. Prior to commencement of open burning the fire department shall be notified. ()

b. Open burning of rubbish containing paper products is prohibited. ()

c. Open burning shall not be conducted within fifty (50)-feet of any facility, building, structure, or other combustible material. Conditions which could cause a fire to spread to within fifty (50)-feet of a facility, building, or structure shall be eliminated prior to ignition. ()

d. Recreational fires shall not be conducted within twenty five (25)-feet of a facility, building, structure, or combustibles unless contained in an approved barbecue pit. Conditions which could cause a fire to spread to within twenty five (25)-feet of a facility, building, or structure shall be eliminated prior to ignition. ()

e. Display fires within a facility, building, or structure shall be contingent upon the approval of the local fire jurisdiction. ()

f. A hose connected to a water supply or other approved fire extinguishing equipment shall be readily available for use. ()

g. Burning materials, recreational fires, or display fires shall be constantly attended by a person knowledgeable in the use of the provided fire extinguishing equipment. An attendant shall supervise the burning material until the fire has been extinguished. ()

07. Storage Types: ()

a. Class I Storage: "Class I Storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored over fifteen (15) feet but not more than twenty one (21) feet high in solid piles or over twelve (12) feet but not more than twenty one (21) feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification. ()

b. Class II Storage: "Class II Storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored not over fifteen (15) feet high in solid piles or not over twelve (12) feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification. ()

c. Class III Storage: "Class III Storage" is that in which the stored commodities, packaging, and storage aids are noncombustible or contain only a small concentration of combustibles which are incapable of producing a fire that would cause appreciable damage to the commodities stored or to noncombustible wall, floor, or roof construction. Ordinary combustible commodities in completely sealed noncombustible containers may qualify in this classification. General commodity storage that is subject to frequent changing and storage of combustible packaging and storage aids is excluded from this category. ()

08. Commercial Cooking Equipment Protection: ()

a. Commercial cooking equipment used in processes producing smoke or grease-laden vapors shall be equipped with an exhaust system complying and maintained in accordance with IDAPA 17.10.08.060.08.a. through 060.08.k. ()

b. A hood constructed of stainless steel or other approved material of equivalent strength, fire, and corrosion resistant with all seams, joints, and penetrations of the hood enclosure to its lower outer most perimeter that directs and captures smoke, grease-laden vapors, and exhaust gases having a liquid-tight continuous external weld,

(Internal hood joints, beams, filter support frames, and appendages need not be welded but shall be sealed or otherwise made grease tight.) Hoods shall be sized and configured to provide for the capture and removal of smoke and grease-laden vapors. ()

c. A ducting system constructed of and supported by carbon steel or stainless steel of suitable strength and fire and corrosion resistance. [Ducts shall not pass through fire walls or fire partitions. EXCEPTION: The use of rated shaft enclosure construction.] All ducts shall lead, as directly as possible, to the exterior of the facility, building, or structure. Duct systems shall not be interconnected with any other building ventilation or exhaust system. All ducts shall be installed without forming dips or traps that might collect residues. All interior surfaces of ducts shall be accessible for cleaning and inspection. A sign shall be placed on all access panels stating "ACCESS PANEL - DO NOT OBSTRUCT". The duct system shall be designed, constructed, and installed to provide an air velocity of not less than one thousand five hundred (1,500)-feet per minute nor more than two thousand five hundred (2,500)-feet per minute. ()

d. Grease removal devices such as liquid grease filters, baffles, or other approved grease removal devices for use with commercial cooking equipment shall be provided. Mesh filters shall not be used. Grease removal devices shall be protected from combustion gas outlets and from direct flame. Filters shall be tight fitting and firmly held in place. Filters shall be easily accessible and removable for cleaning. Filters shall be installed at an angle not less than forty-five (45)-degrees from the horizontal. Filters shall be equipped with a drip tray beneath the lower edge of the filters. The tray shall be kept to the minimum size needed to collect the grease and be pitched to drain to an enclosed metal container having a capacity not to exceed 1-gallon. ()

e. The exhaust system shall be equipped with fire extinguishing equipment that shall include both fixed automatic extinguishing systems and portable fire extinguishers. ()

f. An inspection and servicing of the fire extinguishing system by properly trained and qualified persons shall be made at least every six (6) months. Maintenance on fire extinguishing systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures. (It is recommended that such training and qualification be by the manufacturer of the equipment being inspected and serviced). Fire extinguishing system maintenance shall be accomplished in accordance with appropriate manufacturers service manuals. ()

g. All actuation components, including remote manual pull stations, mechanical or electrical devices, detectors, actuators, etc., shall be checked for proper operation during the inspection in accordance with the manufacturer's listed procedures. In addition to these requirements, specific inspection requirements in the applicable NFPA Standard shall also be followed. ()

h. Fusible links and automatic sprinkler heads shall be replaced at least annually or more frequently if necessary to assure proper operation of the system. Other detection devices shall be serviced or replaced in accordance with the manufacturer's recommendations. ()

i. Certificates of inspection and maintenance performed shall be kept on the premises. ()

j. The exhaust system shall be operated during all periods of cooking. Filter protected exhaust systems shall not be operated with the filters removed. Openings provided for replacing air exhausted through ventilating equipment shall not be restricted by any means that would reduce the operating efficiency of the exhaust system. Cooking equipment shall not be operated while its fire extinguishing system for the exhaust system is non-operational or other wise impaired. ()

k. Hoods, grease removal devices, fans, ducts, and other appurtenances shall be cleaned to bare metal at frequent intervals prior to surfaces becoming heavily contaminated with grease or oily sludge. They shall be inspected and cleaned at a minimum of every six (6) months. A record of cleanings shall be kept to include those areas or items not cleaned. Flammable solvents or other flammable cleaning aids shall not be used. Care shall be taken not to apply cleaning chemicals on fusible links or other detection devices of the automatic fire extinguishing system. ()

09. Non-Approved Fire Protection Equipment: ()

a. Carbon-tetrachloride or Chlorobromomethane shall not be used as a fire suppressant agent in any fire extinguishers. Vaporizing liquid extinguishers are not recognized in this code and reference to them has thus been deleted. ()

b. Inverting Types of Extinguishers. It is recommended that All inverting types of fire extinguishers utilizing soda-acid, foam, water cartridge, and loaded stream cartridge shall be discontinued from use. ()

c. Inverting types of extinguishers are not pressure vessels, but because they are not under pressure at all times, they were not designated to meet pressure vessel codes, as are other extinguishers. ()

d. Old inverting types of extinguishers are being stressed very close to their actual yield point, which means there is virtually no built-in reserve strength. ()

10. Christmas Trees: ()

a. The use of natural or resin-bearing cut trees in public buildings shall be in accordance with this Subsection. ()

b. Trees shall be properly treated with a flame retardant approved by the chief. EXCEPTION: Live vegetation approved by the chief. ()

c. The support device that holds the tree in an upright position shall be of the type that: does not damage the tree stem base; hold the tree securely and is of adequate size to avoid tipping over of the tree; and is capable of containing a two (2) day minimum supply of water, covering the stem at least two (2)-inches, and the quantity specified in Table 060.10-A. ()

| TABLE 060.10-A | | |
|--------------------|--|--|
| TREE HEIGHT (FEET) | MINIMUM SUPPORT STAND WATER CAPACITY (gallons) | TYPICAL DAILY WATER EVAPORATION AMOUNT (gallons) |
| Up to 6 1/2 | 1/2 | 1/8 to 1/4 |
| 6 1/2 to 10 | 1 | 1/4 to 1/2 |
| Over 10 | 3 | 1/2 to 1 1/2 |

d. Prior to setting up a tree, the trunk shall have a fresh butt cut on a diagonal at least one (1)-inch above the original cut. ()

e. Hot tap water shall be used when first filling the tree support stand. The water, level when filled, shall be at least two (2)-inches above the but of the tree. The water level shall not become lower than the but of the tree. If the water level should become lower than the but of the tree, the tree shall be removed immediately or the but recut as per IDAPA 17.10.08.060.10.d. ()

f. Trees shall be checked for dryness using the following method: stand in front of a branch, grasp it with reasonably firm pressure and pull your hand toward you, allowing the branch to slip through your grasp. If the needles fall off readily, the tree does not have adequate moisture content and shall be removed immediately. ()

g. Candles and open flames shall not be used on or near a tree. ()

h. Electrical decorations used on trees shall be listed. ()

i. Trees shall be inspected daily by a designated individual. Trees shall be tested for dryness in

accordance with IDAPA 17.10.08.060.10.f. and that adequate water level is maintained in accordance with IDAPA 17.10.08.060.10.e. ()

061. PORTABLE FIRE SUPPRESSION EQUIPMENT AND PORTABLE FIRE EXTINGUISHERS.

01. Scope. The provisions of this section apply to the selection, installation, inspection, maintenance, and testing of portable fire extinguishing equipment. These are minimum requirements. Portable fire extinguishers are intended as a first line of defense to cope with fires of limited size. They are required even if the facility, building, or structure is equipped with automatic sprinklers, stand pipe and hose, or other fixed fire protection equipment. ()

02. Definitions Applicable to this Section: ()

a. Approved means listed or approved by at least one (1) of the following nationally recognized testing laboratories: Factory Mutual Engineering Corp.; Underwriters Laboratories, Inc.; or Federal agencies such as Bureau of Mines, Dept. of the Interior, Dept. of Transportation, or U. S. Coast Guard, which issue approvals for such equipment. ()

b. Class A Fires are fires fueled by ordinary combustible materials such as wood, cloth, paper, and rubber. ()

c. Class B Fires are fires fueled by flammable liquids, gases, and greases. ()

d. Class C Fires are fires which involve energized electrical equipment where the electrical non-conductivity of the extinguishing media is of importance. (When electrical equipment is deenergized, a fire extinguisher for Class A or B fires may be used safely). ()

e. Class D Fires are fires fueled by combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium. ()

f. Light/Low Hazard is a location where the total amount of Class-A combustible materials, including furnishings, decorations, and contents, is of a minor quantity. This classification anticipates that the majority of the content items are either noncombustible or so arranged that a fire is not likely to spread rapidly. Small amounts of Class-B flammables, less than ten gallons, used for duplicating machines, art departments, etc., are included provided that they are kept in closed containers and safely stored. The amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, assembly halls, etc. ()

g. Ordinary/Moderate Hazard is a location where the total amount of Class-A combustibles and Class-B flammables are present in greater amounts than expected under light/low hazard locations. The amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc. ()

h. Extra/High Hazard is a location where the total amount of Class-A combustibles and Class-B flammables present in storage, production use, and/or finished product is over and above those expected and classed as ordinary/moderate hazards. The amount of combustibles or flammable materials or liquids present is such that fires of severe magnitude may be expected. These may include woodworking shops, auto repair shops, aircraft servicing areas, warehouses with high piled (twelve (12) feet or higher) stacks of combustibles, and areas where processes such as flammable liquid handling, painting, dipping, etc. are conducted. ()

i. Portable Fire Extinguishers are appliances that are classified for use on certain classes of fire and rated for relative extinguishing effectiveness at a temperature of plus seventy (70) degrees Fahrenheit by nationally recognized testing laboratories. ()

03. General Requirements: ()

a. Portable fire extinguishers shall be maintained in a fully charged and operable condition and kept in

their designated places at all times when they are not being used. ()

b. Fire extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. They shall be located along normal paths of travel, including exits from areas. ()

c. Fire extinguishers shall not be obstructed or obscured from view. In large rooms, and in certain locations where visual obstruction cannot be completely avoided, means shall be provided to indicate the location and intended use of extinguishers conspicuously. ()

d. If extinguishers intended for different classes of fire are grouped, their intended use shall be marked conspicuously to insure choice of the proper extinguisher at the time of a fire. Fire extinguisher operating instructions shall be located on the front of the fire extinguisher. Other labels and markings shall not be placed so as to obstruct the operating instructions. ()

e. Fire extinguishers shall be installed on the hangers or in the brackets supplied, or mounted in cabinets, unless the fire extinguishers are of the wheeled type. Fire extinguishers mounted in cabinets or wall recesses shall have their location conspicuously marked. Cabinets housing fire extinguishers shall not be locked unless the locked cabinet is provided with a means of emergency access. Fire extinguishers installed under conditions where they are subject to being dislodged shall be installed in brackets or cabinets specifically designed to cope with this problem. Fire extinguishers installed under conditions where they are subject to severe vibration shall be installed in brackets specifically designed to withstand the impact of vibration and to prevent the fire extinguisher from becoming dislodged. Fire extinguishers installed under conditions where they are subject to physical damage shall be protected from impact. ()

f. Fire extinguishers shall be suitable for use within a temperature range of at least plus forty (40)-degrees Fahrenheit to one hundred and twenty (120)-degrees Fahrenheit. When fire extinguishers are installed in locations subject to temperatures outside the proscribed temperature range, they shall be of a type approved or listed for the temperature to which they will be exposed or placed in an enclosure capable of maintaining the prescribed temperature range. ()

g. Where portable fire extinguishers are provided for employee use in the workplace, the employer shall provide an educational program to familiarize applicable employees with the general principals of fire extinguisher use and the hazards involved with incipient fire fighting. The employer shall provide fire extinguisher training upon initial employment and at least annually thereafter (for example: viewing a training video). ()

h. Height of Mounting. Extinguishers having a gross weight not exceeding forty (40) pounds shall be installed so that the top of the extinguisher is not more than five (5) feet above the floor. Extinguishers having a gross weight greater than forty (40) pounds (except wheeled types) shall be so installed that the top of the extinguisher is not more than three and one-half (3 1/2) feet above the floor. In no case shall the bottom of the fire extinguisher and the floor or ground be less than four (4)-inches. ()

04. Selection of Fire Extinguishers: ()

a. The selection of fire extinguishers for a given situation will depend upon the character of the fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions, and other factors. The number of extinguishers required shall be determined by reference to IDAPA 17.10.08.061.05. Approved fire extinguishers shall be used to meet the requirements of IDAPA 17.10.06.061.01 through 061.06. ()

b. Fire extinguishers shall be selected for the specific classes of hazards to be protected in accordance with the following: extinguishers for protecting Class A hazards shall be selected from the manufacturers recommended extinguishers for Class A fires; extinguishers for protection of Class B hazards shall be selected from the manufacturers recommended extinguishers for Class B fires; extinguishers for protection of Class C hazards shall be selected from the manufacturers recommended extinguishers for Class C fires. NOTE: Carbon dioxide extinguishers equipped with metal horns are not considered safe for use on fires in energized electrical equipment, and therefore, are not classified for use on Class C hazards; extinguishers and extinguishing agents for the protection

of Class A, B, C, and D hazards shall be of types approved for use on the specific combustible-metal hazard. ()

c. Table 061.04-A lists the equivalents for fire extinguishers by type and capacity. ()

| TABLE 061.04-A | |
|-----------------------------------|--------------------|
| Type and Capacity | Equivalency |
| All Water and Loaded Stream Types | |
| 1 1/4 to 1 3/4 Gal | 1-A |
| 2 1/2 Gal | 2-A |
| 4 Gal | 3-A |
| 5 Gal | 4-A |
| 17 Gal | 10-A |
| 33 Gal | 20-A |
| Foam | |
| 2 1/2 Gal | 2-B |
| 5 Gal | 5-B |
| 17 Gal | 10-B |
| 33 Gal | 20-B |
| Carbon Dioxide | |
| Under 7 lbs | 1-B |
| 7 lbs | 2-B |
| 10 to 12 lbs | 2-B |
| 15 to 20 lbs | 2-B |
| 25 to 26 lbs | 5-B |
| 50 lbs | 10-B |
| 75 lbs | 10-B |
| 100 lbs | 10-B |
| Dry Chemical | |
| 4 to 6 1/4 lbs | 2-B |
| 7 1/2 to 15 lbs | 5-B |
| 20 lbs | 10-B |
| 30 lbs | 20-B |
| 75 lbs and up | 40-B |

05. Distribution of Portable Fire Extinguishers: ()

a. The number of fire extinguishers needed to protect equipment or facilities shall be determined as prescribed herein, considering the area and arrangement of the building or occupancy, the severity of the hazard, the anticipated classes of fires, and the distances to be traveled to reach extinguishers. Fire extinguishers shall be provided for the protection of both the building structure, if combustible, and the occupancy hazards contained therein. Required building protection shall be provided by fire extinguishers suitable for Class A fires. Occupancy hazard protection shall be provided by fire extinguishers suitable for such Class A, B, C, or D fire potentials as may be present. Fire extinguishers provided for building protection may be considered also for the protection of occupancies having a Class A fire potential. Combustible buildings having an occupancy hazard subject to Class B, and/or Class C fires, shall have a standard complement of Class A fire extinguishers as required by Table 061.05-A for building protection, plus additional Class B and/or Class C extinguishers. Where fire extinguishers have more than one (1) letter classification they may be considered to satisfy the requirements of each letter class. Rooms or areas shall be graded generally as light hazard, ordinary hazard, or extra hazard. Limited areas of greater or lesser hazard shall be protected as required. All vehicles shall be provided with a fire extinguisher suitable for the fire potential involved. ()

b. Fire extinguisher size and placement for Class A hazards shall be as follows: minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table 061.05-A. Extinguishers shall be located so that the maximum travel distances shall not exceed seventy five (75)-feet. The protection requirements specified in Table 061.05-A may be fulfilled by several extinguishers of lower ratings for ordinary/moderate or extra/high-hazard occupancies. Where the floor area of a building is less than that specified in Table 061.05-A, at least one (1) extinguisher or the minimum size recommended shall be provided. The protection requirements may be fulfilled with extinguishers of higher rating provided the travel distance to such large extinguishers shall not exceed seventy five (75) feet. ()

| TABLE 061.05-A | | | | |
|--|--|--------------------------------------|---|--------------------------------------|
| AREAS TO BE PROTECTED PER EXTINGUISHER | | | | |
| Basic minimum extinguisher rating for area specified | Maximum travel distances to extinguishers (feet) | Light Hazard occupancy (square feet) | Ordinary hazard occupancy (square feet) | Extra hazard occupancy (square feet) |
| 1A | 75 | 3,000 | Note 1 | Note 1 |
| 2A | 75 | 6,000 | 3,000 | Note 1 |
| 3A | 75 | 9,000 | 4,500 | 3,000 |
| 4A | 75 | 11,250 | 6,000 | 4,000 |
| 6A | 75 | 11,250 | 9,000 | 6,000 |

Note 1: Not permitted except as specified in 061.05.b.

c. Fire extinguisher size and placement for Class B fire or other than for fire in flammable liquids of appreciable depth shall be as follows: Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table 061.05-B. Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in Table 061.05-B. Two (2) or more extinguishers of lower rating, shall not be used to fulfill the protection requirements of Table 061.03-B up to three (3) foam extinguishers of at least two and one-half (2 1/2)-gallons capacity may be used to fulfill light/low requirements. Up to three (3) aqueous film forming foam extinguishers of at least two and one-half (2 1/2)-gallon capacity may be used to fulfill extra/high hazard requirements. The protection requirements may be fulfilled with extinguishers of higher ratings provided the travel distance to such larger extinguishers shall not exceed fifty (50) feet. ()

| TABLE 061.05-B | | |
|-------------------|-----------------------------------|---|
| Type of Hazard | Basic minimum extinguisher rating | Maximum travel distance to extinguishers (feet) |
| Light/Low | 5 or 10B | 50 |
| Ordinary/Moderate | 20B | 50 |
| Extra/High | 40B | 50 |

d. Fire extinguisher size and placement for Class B fires in flammable liquids of appreciable depth shall be as follows: Portable fire extinguishers shall not be installed as the sole protection for flammable liquid hazards of appreciable depth. NOTE: Appreciable depth is defined as a depth of a liquid greater than 1/4 inch where the area exceeds 10-square feet. For flammable liquid hazards of appreciable depth (Class B), such as in dip or quench tanks, Class B fire extinguishers shall be provided on the basis of at least two (2) numerical units of Class B extinguishing potential per square foot of flammable liquid surface of the largest tank hazard within the area. Two (2) or more extinguishers of lower ratings shall not be used in lieu of the extinguisher required for the largest tank. Up to three (3) AFFF or AFFF-P foam extinguishers may be used to fulfill these requirements. Scattered or widely separated hazards shall be individually protected. Fire extinguishers in the proximity of a hazard shall be carefully located so as to be accessible in the presence of a fire without undue danger to the operator. ()

e. Fire extinguishers with Class C ratings shall be required where energized electrical equipment may be encountered which would require a nonconducting extinguishing media. This will include fire either directly involving or surrounding electrical equipment. Since the fire itself is a Class A or Class B hazard, the extinguishers are sized and located on the basis of the anticipated Class A or B hazard. ()

f. Fire extinguishers or extinguishing agents for Class D ratings shall be provided for fires involving combustible metals. Fire extinguishing equipment shall be located not more than seventy five (75)-feet from the hazard. ()

06. Inspection, Maintenance, and Hydrostatic Tests: ()

a. The owner or occupant of a property in which fire extinguishes are located shall be responsible for inspection, maintenance, and testing of the fire extinguishers. For details of conducting needed inspection, proper maintenance operations, and required tests, see NFPA No. 10, Portable Fire Extinguishers and the Uniform Fire Code Standard 10-1, Selection, Installation, Inspection, Maintenance, and Testing of Portable Fire Extinguishers. ()

b. Fire extinguishers shall be inspected/quick-checked monthly, or at more frequent intervals when circumstances require, to insure: they are in their designated places; they have not been actuated or tampered with; and to detect any obvious physical damage, corrosion, or other impairments. Any extinguishers showing defects shall be given a complete maintenance inspection. The inspection/quick-check shall include a check of the following items: the fire extinguisher is located in its designated place; there is no obstruction to access or visibility; visibly checking the sight gauge for fullness on extinguishers which have them; the operating instructions are legible and facing forward; the seals and tamper indicators are not broken or missing; weighing or hefting to determine fullness; examination for obvious physical damage, corrosion, leakage, or clogged nozzle/hose and record of having done so. ()

c. At regular intervals, not more than one (1)-year apart, or when specifically indicated by an inspection, fire extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety or replaced as needed. Fire extinguishers removed from the premises to be recharged shall be replaced by spare extinguishers during the period they are gone. Pails or drums of powder extinguishing agents for scoop or shovel application to metal fires shall be kept full at all times. Each fire extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person who performs this service. Maintenance on fire extinguishers shall be performed by a trained person who has undergone the training

necessary to reliably perform the required maintenance procedures. Fire extinguisher maintenance shall be accomplished in accordance with NFPA 10, UFCS 10-1, and appropriate manufacturers service manuals. ()

d. If, at any time, an extinguisher shows evidence of corrosion or mechanical injury, it shall be subjected to a hydrostatic pressure test, or replaced. At intervals not exceeding those specified in Table 061.06-A and this subsection, extinguishers shall be hydrostatically tested. The first hydrostatic retest may be conducted between the fifth and sixth years for those with a designated test interval of five (5)-years. For non-compressed gas type extinguishers the hydrostatic test date shall be recorded on a record tag of metal or equally durable material, or a suitable metallic decal which shall be affixed by a heated process to the shell of the extinguisher which passes the hydrostatic test. The record tag shall contain the following information: Date of the test, test pressure, and name or initials of person or agency making the test. For compressed gas type extinguishers the hydrostatic test date, (month and year), shall be recorded by being stamped into the cylinder. Extinguisher shells, cartridges, or cylinders which show leakage or permanent distortions in excess of specified limits, or which rupture shall be removed from service. Hydrostatic testing of fire extinguishers shall be accomplished by persons trained in pressure testing procedures and safeguards, and having available suitable testing equipment, facilities, and appropriate servicing manuals. Hydrostatic tests shall be performed in accordance with NFPA 10, UFCS 10-1, and manufacture’s maintenance manual. ()

| TABLE 061.06-A | |
|---|---------------------------|
| Extinguisher Type | Test Interval Year |
| Storage-Pressure Water, Loaded Stream, and/or Anti-freeze | 5 ² |
| Wetting Agent | 5 |
| Foam | 5 ¹ |
| AFFF (Aqueous Film Forming Foam) | 5 |
| FFFP (Film Forming Fluoroprotein Foam) | 5 |
| Dry Chemical Extinguishers with Stainless Steel Shells, | 5 |
| Carbon Dioxide Extinguishers | 5 |
| Dry chemical extinguishers with brazed-Brass shells, or mild-steel shells, or aluminum shells | 12 |
| Halogenated Agents | 12 |
| Dry Powder, Stored Pressure, Cartridge- or Cylinder Operated, with Mild Steel Shells | 12 |
| Note-1: Fire extinguishers with copper or brass shells joined by soft solder were prohibited from further hydrostatic testing effective May 18, 1978. Fire extinguishers with stainless steel or brazed brass shells that were permitted to remain in service had a 5-year hydrostatic test interval. Effective December 22, 1987, when the hydrostatic date arrives, all types of inverting fire extinguishers shall not be tested but removed from service. (As of January 1, 1992 all of these types of fire extinguishers shall be removed from service.) | |
| Note-2: Stored pressure water fire extinguishers with fiberglass shells are prohibited from hydrostatic testing and are prohibited from use. | |

062. STANDPIPE AND HOSE SYSTEMS.

- 01. Scope: ()
- 02. Definitions Applicable to this Section: ()

- a. Class I Service is a standpipe system equipped with two and one-half (2 1/2)-inch outlets. ()
- b. Class II Service is a standpipe system directly connected to a water supply and equipped with one and one-half (1 1/2)-inch outlets and hose. ()
- c. Class III Service is a standpipe system directly connected to a water supply and equipped with two and one-half (2 1/2)-inch outlets or two and one-half (2 1/2)-inch and one and one-half (1 1/2)-inch outlets when a one and one-half (1 1/2)-inch hose is required. Hose connections for class III systems may be made through two and one-half (2 1/2)-inch hose valves with easily removable two and one-half (2 1/2)-inch by one and one-half (1 1/2)-inch reducers. ()
- d. Standpipe System is a wet or dry system of piping, valves, outlets, and related equipment designed to provide water at specified pressures and installed exclusively for the fighting of fires. ()
03. General Requirements: ()
- a. Where standpipe and hose systems are required by the Uniform Building Code, they shall meet the design requirements of the National Fire Protection Association's Standard for the Installation of Standpipe and Hose Systems NFPA 14, the Uniform Building Code Standard 9-1, and the requirements of IDAPA 17.10.08.062.01 through 062.06. ()
- b. Cabinets used to contain fire hose shall be of sufficient size to permit the installation of the necessary equipment at those stations, and so designed as not to interfere with the prompt handling of the hose valve, hose, and equipment at time of fire. They shall be used for fire equipment only. Each hose cabinet shall be conspicuously identified. ()
- c. Protection of Standpipes. Standpipes shall be so located that they are protected against mechanical and fire damage. ()
04. Hose Outlets: ()
- a. Hose outlets shall be within easy reach of a person standing on the floor and in no case shall be over-six (6) feet from the floor. Hose stations shall be located conspicuously within the immediate area and where not likely to be obstructed. Hose may be located at one side of the standpipe and supplied by short lateral connections to the standpipe where necessary to avoid obstructions. ()
05. Hose Connections: ()
- a. Some local jurisdictions do not want hoses attached to a stand pipe system unless a trained fire brigade is present. ()
- b. Standpipes for Class I service shall be provided with two and one-half (2 1/2)-inch hose connections/outlets at every floor level landing of every required stairway above or below grade and on each side of the wall adjacent to the exit opening of a horizontal exit. Hose connections/outlets at stairways shall be located within the exit enclosure or, in the case of pressurized enclosures, within the vestibule or exterior balcony, giving access to the stairway. Risers and laterals of Class I standpipe systems not located within an enclosed stairway or smoke proof enclosure shall be protected by a degree of fire resistance equal to that required for vertical enclosures in the building in which they are located. EXCEPTION: In buildings equipped with an approved automatic fire sprinkler system, risers and laterals which are not located within an enclosed stairway or smoke proof enclosure need not be enclosed within fire resistive construction. In facilities, buildings, and structures where more than one (1) standpipe is provided, the standpipe shall be interconnected at the bottom. ()
- c. Standpipes for Class II service shall be provided with 1 1/2-inch hose connections/outlets which shall be accessible and shall be located so that all portions of the facility, building, or structure are within thirty (30)-feet of a nozzle attached to one hundred (100)-feet of hose. In any facility, building, structure, or portion thereof having an assembly room with an occupant load of three hundred (300) or more without a legitimate stage, including

such facilities, buildings, or structures used for educational purposes but not classified as such or a facility, building, structure, or portion thereof with a legitimate stage and an occupant load of one thousand (1,000) or more shall have hose connections/outlets on each side of any stage, on each side of the rear of the auditorium, and on each side of the balcony. Fire resistant protection of risers and laterals is not required. ()

d. Standpipes for Class III service shall be provided with hose connections/outlets as required for Class I and Class II systems as required in IDAPA 17.10.08.062.05. Risers and laterals shall be protected as required for Class I systems. EXCEPTIONS: In facilities, buildings, and structures equipped with an approved automatic sprinkler system, risers and laterals which are not located within an enclosed stairway or pressurized enclosure need not be enclosed within fire resistive construction. Laterals for Class II hose connections/outlets on Class III standpipe systems need not be fire protected. In facilities, buildings, or structures where more than one (1) Class III standpipe is provided, the standpipes shall be interconnected at the bottom. ()

e. Each hose outlet, when provided for the use of building occupants, shall be equipped with approved small (one and one-half (1 1/2) inch) fire hose attached and ready for use. The maximum total length of lined hose shall be one hundred (100) feet. Such hose shall be equipped with a listed variable fog nozzle. ()

f. Hose Racks or Reels. Each station, when provided with small (one and one-half (1 1/2) inch) hose shall be equipped with an approved rack, or an approved reel, securely fastened in position. Each rack or storage facility for small (one and one-half (1 1/2) inch) fire hose shall be provided with a label affixed to include "Fire Hose For Use By Occupants". Hose racks and reels shall be protected against mechanical damage. ()

| TABLE 062.05-A | | | | |
|---|--|-------------------------|---|-------------------------|
| STANDPIPE REQUIRED SYSTEMS | | | | |
| Occupancy | Nonsprinklered Building¹ | | Sprinklered Building^{2,3} | |
| X 304.8 for mm X0.0929 for m² | Standpipe Class | Hose Requirement | Standpipe Class | Hose Requirement |
| Occupancies exceeding 150 ft. in height and more than one story | III | Yes | I | No |
| Occupancies 4 stories or more but less than 150 ft. in height, except Group R, Division 3 ⁷ | [I and II ⁴] (or III ⁵) | Yes | I | No |
| Group A Occupancies with occupant load exceeding 1,000 ⁶ | II | Yes | No requirement | No |
| Group A, Division 2.1 Occupancies over 5,000 square feet in area used for exhibition | II | Yes | II | Yes |
| Group I; H; B; S; M; F, Division 1 Occupancies less than 4 stories in height but greater than 20,000 square feet per floor ⁷ | II ⁴ | Yes | No requirement | No |
| Stages more than 1,000 square feet in area | II | No | III | No |
| ¹ Except as otherwise specified in Item 4 of this Table, Class II standpipes need not be provided in basements having an automatic fire-extinguishing system throughout. | | | | |

| TABLE 062.05-A | | | | |
|--|--------------------------------------|------------------|-------------------------------------|------------------|
| STANDPIPE REQUIRED SYSTEMS | | | | |
| Occupancy | Nonsprinklered Building ¹ | | Sprinklered Building ^{2,3} | |
| X 304.8 for mm X0.0929 for m ² | Standpipe Class | Hose Requirement | Standpipe Class | Hose Requirement |
| ² The standpipe system may be combined with the automatic sprinkler system. | | | | |
| ³ Portions of otherwise sprinklered buildings which are not protected by automatic sprinklers shall have Class II standpipes installed as required for the unsprinklered portions. | | | | |
| ⁴ In open structures where Class II standpipes may be damaged by freezing, the building official may authorize the use of Class I standpipes which are located as required for Class II standpipes. | | | | |
| ⁵ Hose is required for Class II standpipes only. | | | | |
| ⁶ Class II standpipes need not be provided in assembly areas used solely for worship. | | | | |
| ⁷ For the purpose of this Table, occupied roofs of parking structures shall be considered an additional story. In parking structures, a tier is a story. | | | | |

g. An approved hose valve shall be provided at each outlet for attachment of hose. Hose valves shall not be obstructed. ()

h. Each hose connection on dry standpipes shall be provided with a conspicuous, durable, and permanently legible sign reading "Dry Standpipe for Fire Department Use Only." ()

06. Tests and Maintenance. ()

a. Maintenance on standpipe systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures. Standpipe maintenance shall be accomplished in accordance with NFPA 14, UFC Appendix 3-C, and appropriate manufactures service manuals. ()

b. Storage tanks shall be kept properly filled, and where pressure tanks are employed, a pressure of at least 75-pounds per square inch shall be maintained at all times. NOTE: For further details, see Standard for Water Tanks for Private Fire Protection, NFPA No.22. ()

c. The valves in the main connection to the automatic sources of water supply shall be open at all times. The hose valves should be frequently examined to see that they are tight. NOTE: For further details, see Care, Use, and Maintenance of Fire Hose, NFPA 1962. ()

063. FIXED FIRE SUPPRESSION EQUIPMENT.

01. Scope: ()

02. Definitions Applicable to this Section: ()

03. General Requirements: ()

04. Water Systems: ()

a. Automatic sprinkler systems shall meet design requirements of the National Fire Protection Association's Standard, current appropriate addition, for the Installation of Sprinkler Systems. All systems shall be

installed and maintained by a state licensed contractor in conformity with the Regulation G.2 of the State Fire Marshal's Office and the requirements of IDAPA 17.10.08.063.04.a through 063.04.h. ()

b. Every automatic sprinkler system shall have at least one (1) automatic water supply of adequate pressure, capacity, and reliability. ()

c. One (1) or more fire department connections shall be provided except on buildings located in remote areas. An approved check valve shall be installed in each fire department connection, located as near as practicable to the point where it joins the system. There shall be no shutoff valve in the fire department connection. The piping between the check valve and the outside hose coupling shall be equipped with an approved automatic drip. ()

d. Hose connections shall be of approved type. Hose coupling threads shall conform to those used by the local fire department. National Standard Fire Hose Coupling Screw Threads shall be used whenever they will fit the local fire department hose. Hose connections shall be equipped with caps, properly secured and arranged for easy removal by fire departments. Hose connections shall be located and arranged so that hose lines can be readily and conveniently attached to the inlets without interference from any nearby objects including buildings, fences, posts, or other fire department connections. Hose connections shall be designated by a sign having raised letters at least 1 inch in size, cast on plate, or fitting reading for service designated: "AUTO SPKR". ()

e. Water flow alarms shall be provided on all sprinkler installations so that any flow of water equal to or greater than the smallest orifice size installed on the system shall result in an audible alarm on the premises within five (5) minutes. An alarm unit shall include an approved mechanical alarm, horn, or siren, or an approved weatherproof electric gong, bell, horn, or siren on the outside of the building or approved electric gongs, bells, horns, or sirens inside the building, or a combination of such devices. Sprinkler activated alarms shall be monitored by persons at constantly attended locations: when there are twenty (20) or more sprinkler heads in nurseries accommodating more than five (5) persons for the full time care of children under the age of six (6)-years, hospitals, sanitariums, nursing homes with non-ambulatory patients and similar buildings each accommodating more than five (5) persons, and health care centers for ambulatory patients receiving out patient medical care which may render the patient incapable of unassisted self-preservation when each tenant space accommodates more than five (5) patients, or when there are one hundred (100) or more sprinkler heads in other occupancies. ()

f. The alarm apparatus for a wet pipe system shall consist of an approved listed alarm check valve or other listed water flow detecting alarm device with the necessary attachments required to give an alarm. The alarm apparatus for a dry pipe system shall consist of listed alarm attachments to the dry-pipe valve. When a dry pipe valve is located on the system side of an alarm valve, the actuating device of the alarms for the dry pipe valve may be connected to the alarms on the wet pipe system. The alarm apparatus for pre-action and deluge systems shall consist of a listed alarm attachments, actuated by the detection system independently of flow of water in the system. ()

g. Drains from alarm devices shall be so arranged that there will be no danger of freezing, and so that there will be no overflowing at the alarm apparatus, at domestic connections or elsewhere with the sprinkler drains wide open and under pressure. ()

h. A water sprinkler system installed under this standard shall be properly maintained for efficient service. The employer is responsible for the condition of the sprinkler system and must use due diligence in keeping the system in good operating condition. Maintenance on sprinkler systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures, has available testing equipment. Fire sprinkler maintenance shall be accomplished in accordance with current appropriate NFPA, Idaho State Fire Marshal Regulation G.2, and appropriate manufactures service manuals. A stock of spare sprinkler heads, of each type used, shall be maintained on the premises, never less than six (6). Also, a special sprinkler head wrench shall be available. Sprinkler heads that are so located as to be subject to mechanical damage shall be protected with a listed guard. Sprinkler heads shall not be painted and any sprinkler heads that have been painted shall be replaced. Items not pertaining to the operation, maintenance, protection, or installation of sprinkler heads or piping shall not be attached to, suspended from, or stored on sprinkler piping or sprinkler heads. A clearance of at least 18-inches shall be maintained between sprinkler head deflectors and the top of storage or fixtures to reduce the possibility of obstruction to the distribution of water. ()

05. Dry Chemical Systems: ()

a. When dry chemical extinguishing systems are provided they shall meet the design requirements of the National Fire Protection Association's "Standard for Dry Chemical Extinguishing Systems" NFPA 17 and the requirements of IDAPA 17.10.08.063.05.a through 063.05.e. ()

b. Where there is a possibility that personnel may be exposed to a dry chemical discharge, suitable safeguards shall be provided to insure prompt evacuation of such locations, and also to provide means for prompt rescue of any trapped personnel. Safety items shall include, but not limited to, personnel training, warning signs, discharge alarms, pre-discharge alarms, and respiratory protection as required. ()

c. Alarms and/or indicators are used to indicate the operation of the system, hazard to personnel, or failure of any supervised device or equipment. The devices shall be audible and visual. The type, number, and location of the devices shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system should be charged. Alarms indicating failure of supervised devices or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. ()

d. Between the regular semiannual inspection or tests, the system shall be inspected visually or otherwise by competent personnel on a monthly schedule. As a minimum, an inspection/quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; the maintenance tag or certificate is in place; there is no obvious physical damage or other condition that may prevent proper operation; and the pressure gage(s), if provided, are in the operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to include the date and initials of the person performing the inspection/quick check. Persons making inspections/quick checks shall keep records for those extinguishing systems that were found to require corrective action. ()

e. At least semiannually, maintenance shall be conducted in accordance with NFPA 17 and the manufacturer's maintenance manual. Maintenance on dry chemical extinguishing systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures and having available suitable testing equipment. ()

06. Carbon Dioxide Extinguishing Systems: ()

a. When carbon dioxide extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard on Carbon Dioxide Extinguishing Systems" NFPA No. 12 and the requirements of IDAPA 17.10.08.063.06.a through 063.06.e. ()

b. In any use of carbon dioxide where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a carbon dioxide discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. ()

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. ()

d. At least annually, all carbon dioxide systems shall be thoroughly inspected and tested for proper operation by a trained person who has undergone the training necessary to reliably perform the required maintenance procedures and having available suitable testing equipment. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition

until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection/quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provided, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. At least semiannually, all high pressure cylinders shall be weighed. If at any time, a container shows a loss in net content of more than 10 percent, it shall be refilled or replaced. If, at any time, a low pressure container shows a loss of more than 10 percent, it shall be refilled, unless the minimum gas requirements are still provided. ()

e. Carbon dioxide systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 12. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on carbon dioxide systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12, and appropriate manufactures service manuals. ()

07. Halon 1301 Systems: ()

a. When Halon 1301 extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard for Halon 1301 Extinguishing Systems" NFPA No. 12A and the requirements of IDAPA 17.10.08.063.06.a through 063.06.e. ()

b. In any use of Halon 1301 where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a Halon discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. ()

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. ()

d. At least semiannually, all Halon 1301 systems shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection /quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provided, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. ()

e. At least semiannually, maintenance shall be conducted. Halon 1301 systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 12A. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Halon 1301 systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has

undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12, and appropriate manufactures service manuals. ()

08. Halon 1211 Systems: ()

a. When Halon 1211 extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard for Halon 1211 Extinguishing Systems" NFPA No. 12B and the requirements of IDAPA 17.10.08.063.06.a through 063.06.e. ()

b. In any use of Halon 1211 where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a Halon discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, pre-discharge alarms, and breathing apparatus shall be considered. ()

c. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. ()

d. At least semiannually, all Halon 1211 systems shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection/quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; and the pressure gage(s), if provided, are in operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. ()

e. At least semiannually, maintenance shall be conducted. Halon 1211 systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 12B. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Halon 1211 systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 12B, and appropriate manufactures service manuals. ()

09. Wet Chemical Systems: ()

a. When Wet Chemical extinguishing systems are provided, they shall meet the design requirements of the National Fire Protection Association's Standard for "Wet Chemical Fire Extinguishing Systems", NFPA 17A, and the requirements of IDAPA 17.10.08.063.09.a. through 063.09.f. ()

b. Hazards and equipment that can be protected using wet chemical extinguishing systems include; restaurant, commercial, and institutional hoods; plenums, ducts, and associated cooking appliances. ()

c. Wet chemical solutions are relatively harmless and normally have no lasting effects on skin, respiratory system, or clothing. They may produce mild, temporary irritation but the symptoms usually will disappear when contact is eliminated. Irritation of the eyes should be treated by flushing the eyes continuously for 15-minutes

or longer with water. Any condition of prolonged irritation shall be referred to a physician for treatment. ()

d. Alarms and/or indicators shall be used to indicate the operation of the system, a hazard to personnel, or the failure of a supervised device or equipment. The alarm/indicator shall be audible and visual. The type, number, and location of the alarms/indicators shall be such that their purpose is satisfactorily accomplished. An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system needs to be charged. Alarms indicating the failure of a supervised device or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions. ()

e. At least semiannually, all Wet Chemical systems including alarms, shutdowns, and other associated equipment shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector. The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection. Suitable discharge tests shall be made when any inspection indicates their advisability. Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent person on a monthly schedule. As a minimum, this inspection / quick check shall include the following: the extinguishing system is in its proper location; the manual actuators are unobstructed; the tamper indicators and seals are intact; there is no obvious physical damage or condition that may prevent operation of the system; nozzle blow off caps are intact and undamaged; and the pressure gage(s), if provided, are operable range. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to indicate the date and initials of the person performing the inspection/quick check and shall keep records for those extinguishing systems that were found to require corrective action. ()

f. At least semiannually, maintenance shall be conducted. Wet Chemical systems shall be maintained in full operating condition at all times in accordance with the manufacture's maintenance manual and NFPA 17A. Any troubles or impairments shall be corrected at once by competent personnel. Maintenance on Wet Chemical systems shall be performed by a trained person who has available suitable testing equipment, appropriate servicing manuals and has undergone the training necessary to reliably perform the required maintenance procedures. Maintenance on carbon dioxide extinguishing systems shall be accomplished in accordance with NFPA 17A, and appropriate manufactures service manuals. ()

064. FIRE ALARM SYSTEMS.

01. Scope: ()

02. Definitions Applicable to this Section: ()

03. General Requirements: ()

a. Where fire alarm systems are required, they shall meet the design requirements of the National Fire Protection Association's "National Fire Alarm Code", NFPA No. 72, and the requirements of IDAPA 17.10.08.064.01 through 064.11. ()

b. An approved manual, automatic, or combination manual and automatic fire alarm signaling system shall be provided in accordance with this section. ()

c. When actuated, alarm initiating devices shall activate an alarm signal which is audible and visible throughout the facility, building, or structure. ()

04. Assembly Occupancies: ()

a. Any assembly building or portion of a building having an assembly room with a legitimate stage and any building or portion of a building having an assembly room with an occupant load of three hundred (300) or more shall also be provided with a manual fire alarm system. EXCEPTION: When the assembly occupancy is part of an educational occupancy, that assembly is allowed to have the alarms as required for the educational occupancy. ()

b. Activation of the manual fire alarm system shall immediately initiate an approved prerecorded message announcement using an approved electrically supervised voice communication or public address system which is audible above the ambient noise level of the occupancy. The voice communication and public address systems shall be provided with an approved emergency power supply. EXCEPTION: When approved by the local fire official, the prerecorded announcement is allowed to be manually deactivated for a period not to exceed three (3)-minutes for the purpose of allowing a live voice announcement from an approved, constantly attended station. NOTE: This requirement is required in fire alarm systems installed after April 1, 1992, and is recommended for installations prior to April 1992. ()

05. Business Occupancies: ()

a. Drinking and dining establishments having an occupant load of less than fifty (50) persons, wholesale and retail stores, office buildings, printing plants, police and fire stations, factories and workshops using materials not highly flammable or combustible, storage and sales room for combustible goods, paint stores without bulk handling, facilities, buildings, structures, or portions thereof having rooms used for educational purposes beyond the twelfth grade with less than fifty (50) occupants in any room shall be provided with fire alarm systems in accordance with IDAPA 17.10.08.064.06. ()

b. When required by Article 81 of the Uniform Fire Code, high-piled combustible storage areas shall be provided with an approved automatic smoke detector system. ()

c. When special egress control devices are installed on exit doors, an automatic smoke detection system shall be installed throughout the building. ()

d. When corridors in an office occupancy serve an occupant load of one hundred (100) persons or less and the corridors are not 1-hour fire resistive construction, an automatic smoke detection system shall be provided in such corridors. Corridor walls and ceilings need not be of fire-resistive construction within office spaces having an occupant load of one hundred (100) or less when the entire story in which the space is located is equipped with an automatic sprinkler system throughout and an automatic smoke-detection system installed within the corridor. ()

e. High-rise office occupancies shall be provided with a fire alarm system in accordance with Section 403.5 of the Uniform Building Code. ()

f. When required by Article 88 of the Uniform Fire Code, aerosol storage rooms and general purpose warehouses containing aerosols shall be provided with an approved manual fire alarm system. ()

06. Educational Occupancies: ()

a. Any facility, building, or structure used for educational purposes through the twelfth grade by fifty (50) or more persons for more than twelve (12)-hours per week or four (4)-hours in any one (1) day or any facility, building, structure, or portion thereof used for day care purposes for fifty (50) or more persons shall be provided with an approved manual fire alarm system. When automatic sprinkler systems or smoke detector systems are installed, such systems or detectors shall be connected to the facility, building, or structure fire alarm system, and the facility, building, or structure fire alarm system shall be both automatic and manual. ()

b. Manual fire alarm boxes shall be installed and maintained in accordance with IDAPA 17.10.08.064.10. ()

c. Smoke detectors shall be installed when the distance from any point in a room is more than seventy five (75)-feet but not more than 90-feet or when any location within the facility, building, or structure is more than one hundred and fifty (150) feet but not more than one hundred and seventy five (175)-feet from an exit corridor, an enclosed stairway, or the exterior of the facility, building, or structure when the facility, building, or structure is not over two (2)-stories in height and is unsprinklered. ()

d. Smoke detectors shall be installed when interior rooms exit through adjoining or intervening rooms provided the total distance of travel through such rooms is more than seventy five (75)-feet but not more than one

hundred and ten (110)-feet provided the exit route is direct, obvious, and unobstructed. Such routes of exit travel shall not pass through kitchens, storerooms, restrooms, closets, laboratories using hazardous materials, industrial shops, or other similar places. ()

07. Hazardous Occupancies: ()

a. Any facility, building, structure, or portion thereof where materials or processes used present an explosive, accelerated burning, high fire hazard, physical hazard, or health hazard as defined by Section 307 of the Uniform Building Code or Article 80 of the Uniform Fire Code shall be provided with fire alarm systems in accordance with this subsection. ()

b. Facilities, buildings, or structures where organic coating processes are used shall also be provided with a manual fire alarm system. ()

c. When required by Article 80 of the Uniform Fire Code, rooms or areas used for storage, dispensing, use or handling of highly toxic compressed gases, liquid and solid oxidizers, and class I, II, III, or IV organic peroxides shall be provided with an automatic smoke detection system. ()

08. Institutional Occupancies: ()

a. Nurseries for the full time care of children under the age of six (6)-years; hospitals, sanitariums, nursing homes with non-ambulatory patients and similar buildings; health care centers for ambulatory patients receiving outpatient medical care which may render the patient incapable of unassisted self-preservation; nursing homes for ambulatory patients, homes for children six (6)-years of age or older each accommodating more than five (5)-persons; and mental hospitals, mental sanitariums, jails, prisons, reformatories, and facilities, buildings, or structures where personal liberties of inmates are similarly restrained shall additionally be provided with a manual fire alarm system. ()

b. Manual fire alarm boxes shall be located in accordance with IDAPA 17.10.08.064.10. ()

c. Smoke detectors shall be provided as follows: at automatic closing doors in smoke barriers and one (1)-hour fire-resistive occupancy separations; in ducts penetrating smoke barriers, EXCEPTION: When a duct is located above smoke barrier doors, smoke detectors located as required to actuate the smoke barrier doors are allowed to substitute for duct detectors; and in waiting areas which are open to corridors. ()

d. When actuated, alarm initiating devices shall activate an alarm signal which is both audible and visual throughout the facility, building, or structure. EXCEPTION: visual alarm signaling devices are allowed to substitute for audible devices in patient use areas. ()

e. Approved single station smoke detectors shall be installed in patient sleeping rooms in hospitals and nursing homes. Such detectors shall receive primary power from the building electrical wiring. When activated, single station detectors shall: cause a visual display in the corridor adjacent to the door to the room in which the detector is located; cause an audible and visual signal at the respective nurses' station, EXCEPTION: In rooms equipped with automatic door closures having integral smoke detectors of the room side of the door, the integral smoke detector is allowed to substitute for the room smoke detector. The door closure detector shall initiate the alerting functions specified in this subsection; and when single station detectors and related devices are combined with the nursing call system, the system is not required to be electrically supervised. ()

09. Residential Occupancies: ()

a. Apartment houses three (3) or more stories in height or containing sixteen (16) or more dwelling units, in hotels three (3) or more stories in height or containing twenty (20) or more guest rooms, and in congregate residences three (3) or more stories in height or having an occupant load of twenty (20) or more persons shall be provided with a manual and automatic fire alarm system. EXCEPTIONS: A manual fire alarm system need not be provided in buildings not over two (2)-stories in height when all individual dwelling units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least one (1)-hour fire resistive occupancy separations and each individual dwelling unit or guest room has an exit directly to a public way, exit court,

or yard. A separate fire alarm system need not be provided in buildings which are protected throughout by an approved supervised fire sprinkler system conforming with the Uniform Building Code and having a local alarm to notify all occupants. ()

b. Manual fire alarm boxes shall be located in accordance with IDAPA 17.10.08.064.10. EXCEPTION: Manual fire alarm boxes are not required for interior corridors having smoke detectors. ()

c. In facilities, buildings, or structures, regardless of occupant load, size, or height, a smoke detector shall be installed in each sleeping room and at a point centrally located in the corridor or area giving access to each sleeping room/area. In all common areas and interior corridors serving as a required exit for an occupant load of 10 or more shall have smoke detectors. ()

d. Heat detectors shall be provided in common areas such as recreation rooms, laundry rooms, furnace rooms, and similar areas in accordance with the Uniform Fire Code Standard 10-3. ()

e. When activated, alarm initiating devices shall activate an alarm signal which is audible and visual throughout designated portions of the building. ()

f. Single station detectors shall be installed in accordance with the provisions of the Uniform Building Code. ()

10. Jails And Prisons. ()

a. Jails and prisons shall be provided with a fire alarm system. ()

b. All required fire alarm systems shall be electrically supervised. EXCEPTION: Existing nonelectrically supervised systems shall be permitted in buildings protected by a complete automatic extinguishing system. ()

c. All fire alarm systems and detection systems required by this subsection shall be provided with a secondary power supply, and the installation shall be in accordance with NFPA 72. ()

d. Initiation of the required fire alarm system shall be by manual means and by means of any required detection devices or detection systems. EXCEPTIONS: Manual fire alarm boxes shall be permitted to be locked, provided that staff is present within the subject area when occupied and has keys readily available to unlock the boxes. Manual fire alarm boxes shall be permitted to be located in a staff location, provided that the staff location is attended when the building is occupied and that the staff attendant has direct supervision of the sleeping area. ()

e. Occupant notification shall be accomplished automatically. Presignal systems are prohibited. A positive alarm sequence is permitted. EXCEPTION: Any smoke detectors required by this subsection shall be permitted to be arranged to alarm at a constantly attended location only and shall not be required to accomplish general alarm notification. ()

f. Fire department notification shall be accomplished in accordance with an approved plan. The fire plan shall include provisions for logging of alarms and immediate notification of the fire department. EXCEPTIONS: Any smoke detectors required by this subsection shall not be required to transmit an alarm to the fire department. Where staff is provided at a constantly attended location that has the capability to promptly notify the fire department or has direct communication with a control room having direct access to the fire department then an automatic means of notification is not required. ()

g. An approved, automatic smoke detection system shall be installed throughout all resident housing areas. EXCEPTION: Smoke detectors may be arranged to prevent damage or tampering, or for other purposes, provided the function for detecting any fire is not degraded. ()

h. Where required facilities shall be protected throughout by an approved, supervised automatic fire sprinkler system. Where this subsection permits exceptions for fully sprinklered jails and prisons the sprinkler system shall be in complete accordance with NFPA 13, electrically connected to the fire alarm system, and fully supervised.

- ()
11. Manual Fire Alarm Boxes: ()
- a. General. Manual fire alarm boxes shall be listed for the particular application and shall be used only for the fire protective signaling purposes. Combined fire alarm and watchman's signaling boxes are acceptable. ()
- b. Each box shall be securely mounted. ()
- c. Manual fire alarm boxes shall be distributed throughout the protected area so that they are unobstructed, readily accessible, and located in the normal path of exit from the area at every exit from every level. Additional boxes shall be provided on each floor to obtain a maximum horizontal travel distance of two hundred (200) feet to the nearest box. ()
12. Maintenance: ()
- a. All fire alarm systems and components shall be inspected and tested at least annually unless otherwise specified. All smoke detectors shall be tested at least annually. Flame detectors and spark/ember detectors shall be inspected and tested at least semiannually. All fire-gas detectors and other fire detectors shall be inspected and tested at least semiannually. All tests shall be in accordance with NFPA 72, Uniform Fire Code Standard 10-4, requirements of the State Fire Marshal's Office, and the manufacturer's instructions. ()
- b. All detectors suspected of exposure to a fire condition shall be inspected and tested. ()
- c. Detectors shall be periodically cleaned in accordance with the manufacture's instructions to remove dust or dirt. The frequency of cleaning will depend on the type of detector and local ambient conditions. ()
- d. Maintenance on fire alarm systems shall be performed by a trained person who has undergone the training necessary to reliably perform the required inspection, testing, and maintenance procedures. Fire alarm systems maintenance shall be accomplished in accordance with NFPA 72, UFCS 10-2, 10-3, and 10-4, and appropriate manufactures service manuals. ()
- e. Between the required annual inspection or tests of the fire alarm system, the system shall be inspected visually or otherwise by competent personnel on a monthly schedule. As a minimum, this inspection/quick check shall include the following: manual actuators are unobstructed; tamper indicators and seals are in tact; the maintenance tag or certificate is current; there is no obvious physical damage or condition existing that could prevent operation. If any deficiencies are found, appropriate corrective action shall be taken immediately. Persons making inspections/quick checks shall maintain a record to include the date and initials of the person performing the inspection/quick check. ()

065. FIRE DEPARTMENTS AND BRIGADES.

01. Scope: ()
- a. This section contains information and basic requirements common to all fire departments and fire brigades, but does not intend to specify specific requirements for specific operations. ()
- b. This section provides basic guidance with regard to operational safety, training, and protective equipment. ()
02. Definitions Applicable to this Section: ()
- a. Fire Brigade is a private fire department usually made up of an organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations. ()
- b. Fire Department is an organized group of professional fire fighters, volunteer fire fighters, or a combination of professional and volunteer fire fighters who are knowledgeable, trained, and skilled in advanced fire

fighting operations. ()

03. General Requirements: ()

a. The fire department or the employer of a fire brigade shall prepare and maintain a statement or written policy which establishes the basic organizational structure; the type, amount, and frequency of training to be provided fire fighters; and the functions that the department/brigades to perform. ()

b. The employer shall assure that employees who are expected to fight fires, perform rescues, or work on hazardous materials incidents are physically capable of performing the duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema, to participate in emergency activities unless a physician's certificate of the employees' fitness to participate in such activities is provided. ()

c. The employer shall provide training and education for all employees who are expected to fight fires, perform rescues, or work on hazardous materials incidents. Such training and education shall be provided to employees before they perform duties which may be assigned to them during emergencies. Fire department/brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the department/brigade. ()

d. The employer shall assure that training and education is conducted frequently enough to assure that each employee is able to perform their assigned duties and functions satisfactorily and in a safe manner so as not to endanger other employees or the public. All fire department/brigade members shall be provided with training at least annually. In addition, fire department/brigade members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly. ()

e. The quality of the training and education shall be similar to that conducted by nationally recognized fire training schools. ()

f. The employer shall inform fire department/brigade members of special hazards to which they may be exposed during fire and other emergencies. Fire department/brigade members shall also be advised of any changes that occur in relation to the special hazards. The employer shall develop, maintain, and make available for inspection by fire department/brigade members, written procedures that describe the actions to be taken in situations involving the special hazards and shall include these in the training and education program. ()

g. The employer shall maintain and inspect, at least annually, equipment to assure the safe operational condition of the equipment. Fire fighting equipment, rescue equipment, hazardous material cleanup equipment, and personal protective equipment that is in a damaged or unserviceable condition shall be removed from service and replaced. ()

h. The employer shall provide at no cost to the employee and assure the use of protective clothing and equipment that complies with the requirements of this standard. The employer shall assure that protective clothing and equipment protects the head, body, and extremities, and consist of at least the following components: foot and leg protection; hand protection; body protection; eye, face, respiratory, face, and head protection. Protective clothing and equipment shall protect against special hazards that fire department/brigade members may be exposed during fire and other emergencies. ()

04. Requirements for Fire Fighter's Protective Clothing: ()

a. Foot and leg protection may be achieved by either of the following methods: fully extended boots which provide protection for the legs; or protective shoes or boots worn in combination with protective trousers that meet the requirements of IDAPA 17.10.08.065.04.b. Protective footwear shall meet the requirements of IDAPA 17.10.05.050.12 and ANSI Z41 "American National Standard for Personal Protection-Protective Footwear" for Class seventy five (75) footwear. In addition, protective footwear shall be water-resistant for at least five (5)-inches above the bottom of the heel and shall be equipped with slip-resistant outer soles. Protective footwear shall be listed and shall provide protection against penetration of the mid sole by a size 8D common nail when at least three hundred (300)-pounds of static force is applied to the nail. ()

b. Body protection shall be coordinated with foot and leg protection to ensure full body protection for the wearer. This shall be achieved by one (1) of the following methods: wearing of a fire resistive coat meeting the requirements of this subsection in combination with fully extended boots meeting the requirements or IDAPA 17.10.08.065.04.a.; or wearing of a fire resistive coat in combination with protective trousers both of which meet the requirements of this subsection. The performance, construction, and testing of fire resistive coats and protective trousers shall be at least equivalent to the requirements of the National Fire Protection Association standard NFPA 1971 "Protective Clothing for Structural Fire Fighting". ()

c. Hand protection shall consist of protective gloves or glove system which will provide protection against cut, puncture, and heat penetration. Gloves or glove system shall be tested in accordance with the test methods contained in the National Institute for Occupational Safety and Health, NIOSH, publication "The Development of Criteria for Fire Fighter's Gloves, Test Methods". ()

d. Head protection shall consist of a protective head device with ear flaps and chin strap which meet the performance, construction, and testing requirements of the National Fire Safety and Research Office of the U. S. Fire Administration, U. S. Department of Commerce, which are contained in the "Model Performance Criteria for Structural Firefighters' Helmets". ()

e. Protective eye and face protection shall be used when performing operations where the hazards of flying or falling materials which may cause eye and face injuries are present. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted when such devices meet the requirements of IDAPA 17.10.05.050.04. Full face pieces, helmets, or hoods of breathing apparatus which meet the requirements of IDAPA 17.10.05.050.04 shall be acceptable as meeting the eye and face requirements of this subsection. ()

f. Respiratory protection devices which comply with the requirements of this subsection and IDAPA 17.10.05.050.05, 050.06, 050.07, and 050.08 and certified under 30 CFR part 11, shall be provided at no cost to employees and their use shall be assured. An approved self-contained breathing apparatus with full-face piece, or with approved helmet or hood configuration, shall be provided to and worn by employees while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency may be present. Such apparatus shall also be worn during emergency situations involving toxic substances. ()

g. Approved self-contained breathing apparatus may be equipped with either a "buddy-breathing" device or a quick disconnect valve, even if these devices are not certified by NIOSH. If these accessories are used, they shall not cause damage to the apparatus, or restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus. ()

h. Self contained breathing apparatus shall have a minimum service life rating of thirty (30)-minutes in accordance with the methods and requirements of the Mine Safety Administration and NIOSH. EXCEPTION: Escape self-contained breathing apparatus used only for emergency escape purposes. ()

i. The employer shall assure that self-contained breathing apparatus for use by firefighters performing interior structural fire fighting operations, are of the pressure demand or other positive pressure type. This subsection does not prohibit the use of a self-contained breathing apparatus where the apparatus can be switched from a demand to a positive pressure mode. However, such apparatus shall be in the positive pressure mode when performing interior structural fire fighting operations. A negative pressure self-contained breathing apparatus with a rated service life of more than two (2)-hours and which have a minimum protection factor of five thousand (5,000), as determined by an acceptable quantitative fit test performed on each individual, is acceptable for use only during those interior structural fire fighting situations for which the employer demonstrates that a long duration breathing apparatus is necessary. ()

066 - 999. (RESERVED).

IDAPA 17 - INDUSTRIAL COMMISSION
17.10.10 - GENERAL SAFETY AND HEALTH STANDARDS-WORK PLACE STANDARDS
DOCKET NO. 17-1010-9601
NOTICE OF PROPOSED RULES

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has proposed rule-making. The action is authorized pursuant to §72-508 and §§72-720, 721, 722, and 723, Idaho Code.

PUBLIC HEARING SCHEDULE: Public hearing(s) concerning this rule-making will be scheduled if requested in writing by twenty-five (25) persons, a political subdivision, or an agency, not later than August 28, 1996. The hearing site(s) will be accessible to persons with disabilities. Requests for accommodation must be made not later than five (5) days prior to the hearing, to Patricia S. Ramey, Secretary, Industrial Commission, P. O. Box 83720, Boise, ID 83720-0041. Telephone and fax numbers are listed below.

DESCRIPTIVE SUMMARY: The following is a statement in nontechnical language of the substance of the proposed rule:

The Industrial Commission, in cooperation with the Division of Building Safety, proposes the adoption of rules to replace IDAPA 17.04.01, General Safety and Health Standards Code 1, which is being repealed in its entirety. The proposed rules update the state's minimum safety and health standards dealing with walking working surfaces, fixed stairs and ramps, ladders, scaffolding, fall protection, and powered platforms for the public sector and bring them into line with generally accepted safety and health standards in the private sector.

ASSISTANCE ON TECHNICAL QUESTIONS, SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning these proposed rules, contact Mike Poulin, Bureau of Logging and Industrial Safety, at (208) 334-2129.

Anyone may submit written comments regarding this rule. All written comments and data concerning the rule must be directed to the undersigned and must be postmarked or delivered on or before August 28, 1996.

DATED this 3rd day of June, 1996.

Patricia S. Ramey, Commission Secretary
Industrial Commission
P. O. Box 83720
Boise, Idaho 83720-0041
Telephone: (208) 334-6000
Fax: (208) 334-5145

TEXT OF DOCKET NO. 17-1010-9601

IDAPA 17
TITLE 10
Chapter 10

17.10.10 - GENERAL SAFETY AND HEALTH STANDARDS WORK PLACE STANDARDS

000. LEGAL AUTHORITY.

These rules presented in IDAPA 17, Title 10, are promulgated pursuant to the authority granted the Industrial Commission by Sections 72 508, 72 720, 72 721, 72 722, and 72 723, Idaho Code ()

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 17, Title 10, Chapter 10, General Safety and Health Standards Work Place Standards. For purposes of IDAPA 17, Title 10, these rules shall be applicable to places of public employment, as

defined in Sections 72 205 and 72 207, Idaho Code, by the State of Idaho and its political subdivisions i.e. counties, cities, public school districts, and other taxing entities as follows: ()

01. State. Every person in the service of the state or of any political subdivision thereof, under any contract of hire, express or implied, and every official or officer thereof, whether elected or appointed, while performing his official duties. ()

02. County/City. Every person in the service of a county, city, or any political subdivision thereof, or of any municipal corporation. ()

03. National Guard. Members of the Idaho National Guard while on duty. ()

04. Youth Conservation. Participants in Idaho youth conservation project under the supervision of the Idaho State Forester. ()

05. Volunteers. Every person who is a member of volunteer fire, police department, or ambulance service shall be deemed to be in the employment of the political subdivision or municipality where the department is organized. ()

06. Civil Defense. Every person who is a regularly enrolled volunteer member or trainee of the Department of Disaster and Civil Defense, or of a civil defense corps, shall be deemed to be in the employment of the state. ()

07. Public School. Every person who is in the service of a public school or school district shall be deemed to be in the employment of the state. ()

002. WRITTEN INTERPRETATIONS.

For purposes of IDAPA 17, Title 10, there are no written statements which pertain to the interpretation of these rules. ()

003. ADMINISTRATIVE APPEALS.

For purposes of IDAPA 17, Title 10, there are no provisions for administrative appeal of these rules. The procedure for appeals in safety matters is prescribed by Sections 72 722 and 72 714 through 72 718, Idaho Code. ()

004.-- 069. (RESERVED).

070. WALKING WORKING SURFACES.

01. Scope: ()

02. Definitions Applicable to this Section: ()

a. Dockboard, Bridge Plate is a device utilized to span the gap between highway vehicles, highway vehicles and loading dock or platform, highway vehicles and railroad cars, railroad cars and loading dock or platform. The dockboard or bridge plate may be fixed, adjustable, portable, powered, or unpowered. ()

b. Floor Hole is an opening measuring less than twelve (12) inches but more than 1 inch in its least dimension in any floor, platform, pavement, or yard, through which materials but not persons may fall, such as a belt hole, pipe opening, or slot opening. ()

c. Floor Opening is an opening measuring twelve (12) inches or more in its least dimension in any floor, platform, pavement, or yard, through which persons may fall, such as a hatchway, stair or ladder opening, pit, or large utility opening. ()

d. Guardrail is a vertical barrier erected along the open side of elevated walking surfaces, open side of stairs, or open side of ramps for the purpose of minimizing the possibility of an accidental fall from the walking surface to the lower level. ()

- e. Handrail is a single railing provided for grasping with the hand, supported on brackets from a wall or partition, to provide support for persons using a stairway or ramp. ()
- f. Landing is an extended step or platform breaking a continuous run of stairs. ()
- g. Nose, Nosing is that portion of a stair tread projecting beyond the face of the stair riser immediately below. ()
- h. Open Riser is the air space between the threads of stairways without upright members. ()
- i. Platform is a working space for persons, elevated above the surrounding floor or ground, such as a balcony, or platform for the operation or maintenance of machinery and equipment. ()
- j. Rise is the vertical distance from the top of a stair tread to the top of the next higher stair tread. ()
- k. Riser is the upright member of a step situated at the back of a lower stair tread and near the leading edge of the next higher stair tread. ()
- l. Runway is a passageway for persons, elevated above the surrounding floor or ground level, such as a foot walk along shafting or a walkway between buildings. ()
- m. Standard Strength and Construction is any construction of railings, covers, or other guards that meets the requirements of this section. ()
- n. Stairs, Stairway is a series of steps leading from one level to an other, or leading to platform, pits, boiler rooms, crossovers, or around machinery , tanks, and other equipment that is used more or less continuously or routinely by employees, or occasionally by specific individuals. A series of steps and landings having two (2), three (3) or more risers constitutes stairs or stairway. ()
- o. Stair Railing is a vertical barrier erected along exposed sides of a stairway to prevent falls of persons. ()
- p. Toeboard is a vertical barrier erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials. ()
- q. Tread, Tread Run is the horizontal distance from the leading edge of a stair tread to the leading edge of an adjacent stair tread. ()
- r. Tread Width is the horizontal distance from the front to the back of the tread including nosing when used. ()
- s. Wall Hole is an opening less than thirty (30) inches but more than one (1) inch high of unrestricted width in any wall or partition, such as a ventilation hole or drainage scupper. ()
- t. Wall Opening is an opening at least thirty (30) inches high and eighteen (18) inches wide in any wall or partition through which persons may fall, such as yard arm doorway or chute opening. ()
03. General Requirements: ()
- a. This section contains fundamental requirements essential to providing a safe work area. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than the minimum requirements specified herein. ()
04. Aisles and Passageways: ()

a. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways, and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Shelving and rack units shall be protected from collision. ()

b. Permanent aisles and passageways shall be appropriately marked. ()

c. All trestles in connection with industrial plants on which cars run, which are also used as walkways, shall be equipped with a walkway on the outer edge, so located as to give a safe minimum clearance of three (3) feet to cars. Such walkways shall be equipped with standard rails. Where a trestle crosses a driveway or passageway, the trestle over such points shall be solidly boarded over. ()

05. Covers and Guardrails: ()

a. Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc. All open vats and tanks into which workers may fall shall be guarded with railings or screen guards. ()

b. All open vats and tanks where workers are employed shall have a platform or walkway forty-two (42) inches below the top of the vat or tank or where the walkway is flush with the top of the vat or tank, a standard guardrail off forty-two (42) inches high shall be constructed. ()

c. Every open tank over five (5) feet deep, excluding where agitators are used or where products may be damaged by ladders, shall have a ladder fixed on the inside so placed as to connect with means of access from the outside. Rungs shall have a clearance of at least 7 inches measured between the rung and the side of the tank. For ladder requirements see IDAPA 17.10.10.072. ()

06. Floor Loading Protection: ()

a. In every building or structure, or part thereof, used for mercantile, business, industrial, or storage purposes, the loads approved by the building official shall be marked on plates of approved design which shall be supplied and securely affixed by the owner of the building, or his duly authorized agent, in a conspicuous place in each space to which they relate. Such plates shall not be removed or defaced but, if lost, removed, or defaced, shall be replaced by the owner or his agent. ()

b. No person shall place, cause, or permit to be placed on any floor, roof of a building, or other structure a load greater than that for which such floor or roof is approved by the building official. ()

07. Hot Pipes: ()

a. All steam pipes and pipes heated by any other means to a sufficient temperature to burn a person and which are within seven (7) feet of a floor or platform, or within fifteen (15) inches measured horizontally from stairways, ramps, or fixed ladders, if exposed to contact, shall be guarded with an appropriate guard. ()

b. Protection from Hot Pipes. All exposed hot pipes within seven (7) feet of the floor or working platform, or within fifteen (15) inches measured horizontally from stairways, ramps, or fixed ladders, shall be covered with an insulating material or be guarded in such a manner as to prevent contact. ()

08. Buildings and Floors: ()

a. All buildings, docks, walkways, and other structures shall be so designed, constructed, and maintained as to provide a safety factor of four (4). This means that all members shall be capable of supporting four (4) times the maximum strain to be imposed. ()

b. The floors of all buildings, platforms, walks, driveways, storage yards, docks, etc., and all parts thereof, and all supporting members shall be of substantial construction, kept in good repair, and free from accumulations of debris. Floors which are maintained in a polished condition shall be polished with a non slip

preparation of an approved type. ()

c. Flooring of buildings, ramps, docks, trestles, and other structures required to support motive equipment shall be approved for the specific load and safety requirements. ()

09. Dockboards and Bridge Plates: ()

a. Portable and powered dockboards and bridge plates shall be strong enough to carry the load imposed on them. ()

b. Portable dockboards and bridge plates shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping. ()

c. Powered dockboards and bridge plates shall be designed and constructed in accordance with Commercial Standard CS202-56 (1961) Industrial Lifts and Hinged Loading Ramps: published by the U.S. Department of Commerce. ()

d. Handholds, or other effective means, shall be provided on portable dockboards and bridge plates to permit safe handling. ()

e. Positive protection shall be provided to prevent trucks and railroad cars from being moved while dockboards or bridge plates are in position. ()

f. Dockboards or bridge plates shall be driven over carefully and slowly and their rated capacity shall not be exceeded. ()

10. Other Working Walking Surfaces: ()

a. Industrial Machine Areas shall have machines so located as to give enough clearance between machines so that the movement of one (1) operator will not interfere with the work of another. Ample room shall be provided for cleaning machines and handling the work, including material and scrap. ()

b. The arrangement of machines shall be such that operators will not stand in required aisle ways. ()

c. Aisles shall be provided with sufficient width to permit the free movement of employees bringing and removing material. This aisle space is to be independent of working and storage space and shall be defined by marking. ()

d. Wood platforms used on the floor in front of machines shall be of substantial construction with nonslip surfaces. ()

11. Protection for Floor Openings: ()

a. Every stairway floor opening shall be guarded by a standard railing constructed in accordance with IDAPA 17.10.10.070.14. A guardrailing shall be provided on all exposed sides of a stairway except at the entrance to the stairway. For infrequently used stairways where traffic across the opening prevents the use of fixed standard guardrails such as when located in aisle spaces, etc., the guard shall consist of a hinged floor opening cover of standard strength and construction and removable standard guardrails on all exposed sides except at the entrance to the stairway. ()

b. Every ladder way floor or platform opening shall be guarded by a standard guardrail with standard toeboard on all exposed sides except at the entrance to the opening, with the passage through the guardrail either provided with a swinging gate or so offset that a person cannot walk directly into the opening. ()

c. Every hatchway and chute floor opening shall be guarded by one (1) of the following: hinged floor opening cover of standard strength and construction equipped with standard guardrails or permanently attached

guardrails so as to leave only one (1) exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded by removable standard guardrails. A removable guardrail with toeboard on not more than two (2) sides of the opening and fixed standard guardrails with toeboards on all other exposed sides. The removable guardrails shall be kept in place when the opening is not in use and shall preferably be hinged or otherwise mounted so as to be conveniently replaceable. Where operating conditions necessitate the feeding of material into any hatchway or chute opening, protection shall be provided to prevent a person from falling through the opening. ()

d. The area under floor openings shall, where practical, be fenced off. When this is not practical, the areas shall be plainly marked with yellow lines and telltales shall be installed to hang within five and one-half (5 1/2) feet of the ground or floor level. ()

e. Where floor openings are used to drop materials from one (1) level to another, audible warning systems shall be installed and used to indicate to employees on the lower level that material is to be dropped. ()

f. Every skylight opening and hole shall be guarded by a standard skylight screen or a fixed standard guardrail on all exposed sides. ()

g. Every pit and floor opening, infrequently used, shall be guarded by a floor opening cover of standard strength and construction which shall be hinged or otherwise retained in place. While the cover is not in place, the pit or floor opening shall be constantly attended by someone or shall be protected on all sides by removable standard guardrails. ()

h. Every utility floor opening shall be guarded by a standard utility cover which need not be hinged in place. While the cover is not in place, the utility opening shall be constantly attended by or shall be protected by removable standard guardrails. ()

i. Every temporary floor opening shall have standard guardrails, or shall be constantly attended by someone. ()

j. Every floor hole into which persons can accidentally walk shall be guarded by either: a standard guardrail with standard toeboard on all exposed sides, or a floor hole cover of standard strength and construction that shall be hinged or otherwise secured in place. While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard guardrail. ()

k. Every floor hole into which persons cannot accidentally walk due to fixed machinery, equipment, or wells shall be protected by a cover that leaves no openings more than one (1) inch wide. The cover shall be securely held in place to prevent tools or materials from falling through. ()

l. Where doors or gates open directly on a stairway, the requirements of IDAPA 17.10.04.040.18 shall apply. ()

12. Protection for Wall Openings and Holes: ()

a. Every wall opening from which there is a drop of more than thirty (30) inches shall be guarded by one (1) of the following: guardrail, roller, picket fence, half door, or equivalent barrier. The guard may be removable but should preferably be hinged or otherwise mounted so as to be conveniently replaceable. where there is exposure below to falling materials, a removable toeboard or the equivalent shall also be provided. When the opening is not in use for handling materials, the guard shall be kept in position regardless of a door on the opening. In addition, a grab handle shall be provided on each side of the opening with its center approximately forty-two (42) inches above the floor level and of standard strength and mounting. ()

b. An extension platform onto which materials can be hoisted for handling, shall have guardrails or equivalent guards. ()

c. Every chute wall opening from which there is a drop of more than thirty (30) inches shall be guarded by a standard guardrail or equivalent barriers or as required by the conditions. ()

d. Every window wall opening at a stairway landing, floor, platform, or balcony shall comply with the following: windows or openings with glazing shall meet the requirements of IDAPA 17.10.04.040.21; if the opening is 30 inches above the next level it shall have a standard guardrail and toeboard. ()

e. Every temporary wall opening shall have adequate guards of sufficient height but these need not be of standard construction. ()

f. Where there is a hazard of materials falling through a wall hole, the hole shall be protected by a standard toeboard or enclosing screen when persons can pass under, there is moving machinery, or there is equipment with which falling materials could create a hazard. ()

13. Protection of Open Sided Floors, Platforms, and Runways: ()

a. Every open sided floor or platform 30 inches or more above adjacent floor or ground level shall be guarded by a standard guardrail or the equivalent as specified in IDAPA 17.10.10.070.14 and 17.10.10.070.16 on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The guardrail shall be provided with a toeboard wherever, beneath the open sides, persons can pass, there is moving machinery, or there is equipment with which falling materials could create a hazard. EXCEPTIONS: on the loading side of loading docks and on the auditorium side of a stage or performance side of an enclosed platform. ()

b. Every runway shall be guarded by a standard guardrail or the equivalent as specified in IDAPA 17.10.10.070.14 and 17.10.10.070.16 on all open sides thirty (30) inches or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side. ()

c. Runways used exclusively for special purposes such as oiling, maintenance, or filling tanks may have the railing on one (1) side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway of not less than 18 inches wide. Persons, utilizing runways, exposed to machinery, electrical equipment, or other danger shall require additional guarding. ()

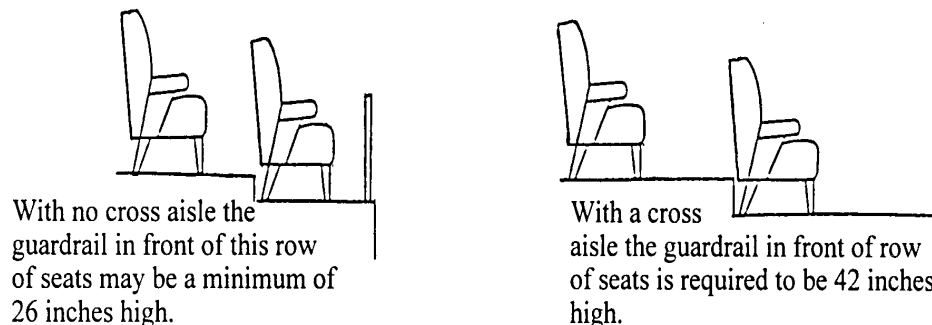
d. Regardless of height, open sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling, or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard guardrail and toeboard. ()

e. Tools and loose materials shall not be left on overhead platforms, walkways, and scaffolds. ()

14. Guardrail Details: ()

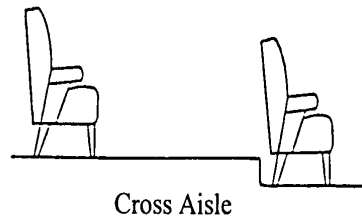
a. Guardrails shall be not less than forty-two (42) inches high. EXCEPTION: The top of guardrails on a balcony immediately in front of the first row of seats when there is no cross aisle in front of these seats shall not be less than 26 inches in height. See Figure 070.14 A. ()

FIGURE 070.14-A

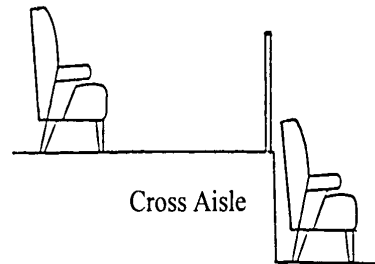


With a cross aisle the guardrail in front of row of seats is required to be forty-two (42) inches high. EXCEPTION: The top of guardrails along a cross aisle where the seat backs are lower than twenty-four (24) inches shall not be less than twenty-six (26) inches in height. See Figure 070.14 B. ()

FIGURE 070.14-B



The back of this seat must be at least 24 inches high.



Minimum 26 inch high guardrail required when this seat back is less than 24 inches high.

Minimum twenty-six (26) inch high guardrail required when this seat back is less than twenty-four (24) inches high. EXCEPTION: The top guardrails for stairs, exclusive of their landings, may be not less than thirty-four (34) inches high. EXCEPTION: The top of guardrails for dwellings and lodging houses, private garages, private car ports, private sheds, and interior guardrails within individual units of congregate residences and guest rooms may be not less than thirty-six (36) inches high. ()

b. Guardrails shall be so constructed that the area in the plane of the guardrail from the top of floor, riser, or curb to the minimum required height of guardrail shall be subdivided or filled in one (1) of the following manners. Open guardrails shall have intermediate rails or ornamental pattern such that: in areas not accessible to the public a sphere twelve (12) inches in diameter cannot pass through; in areas accessible to the public, where the guardrails were constructed after January 1, 1992, a sphere four (4) inches in diameter cannot pass through; in areas accessible to the public, where the guardrails were constructed before January 1, 1992, a sphere six (6) inches in diameter cannot pass through; and the triangular opening formed by the riser, tread, and bottom element of a guardrail at the open side of a stairway shall be of a size that a sphere six (6) inches in diameter cannot pass through. ()

c. Masonry walls may be used for any portion of the guardrail. ()

d. Enclosure walls and guards consisting of masonry, railings, or other construction either shall be designed for loads transmitted by attached handrails or shall be designed to resist a horizontal force of fifty (50) pounds per level foot applied at the top of the guard, whichever condition produces maximum stresses. For walls or guards higher than minimum height the specified force shall be applied at a height forty-two (42) inches above the floor or tread. ()

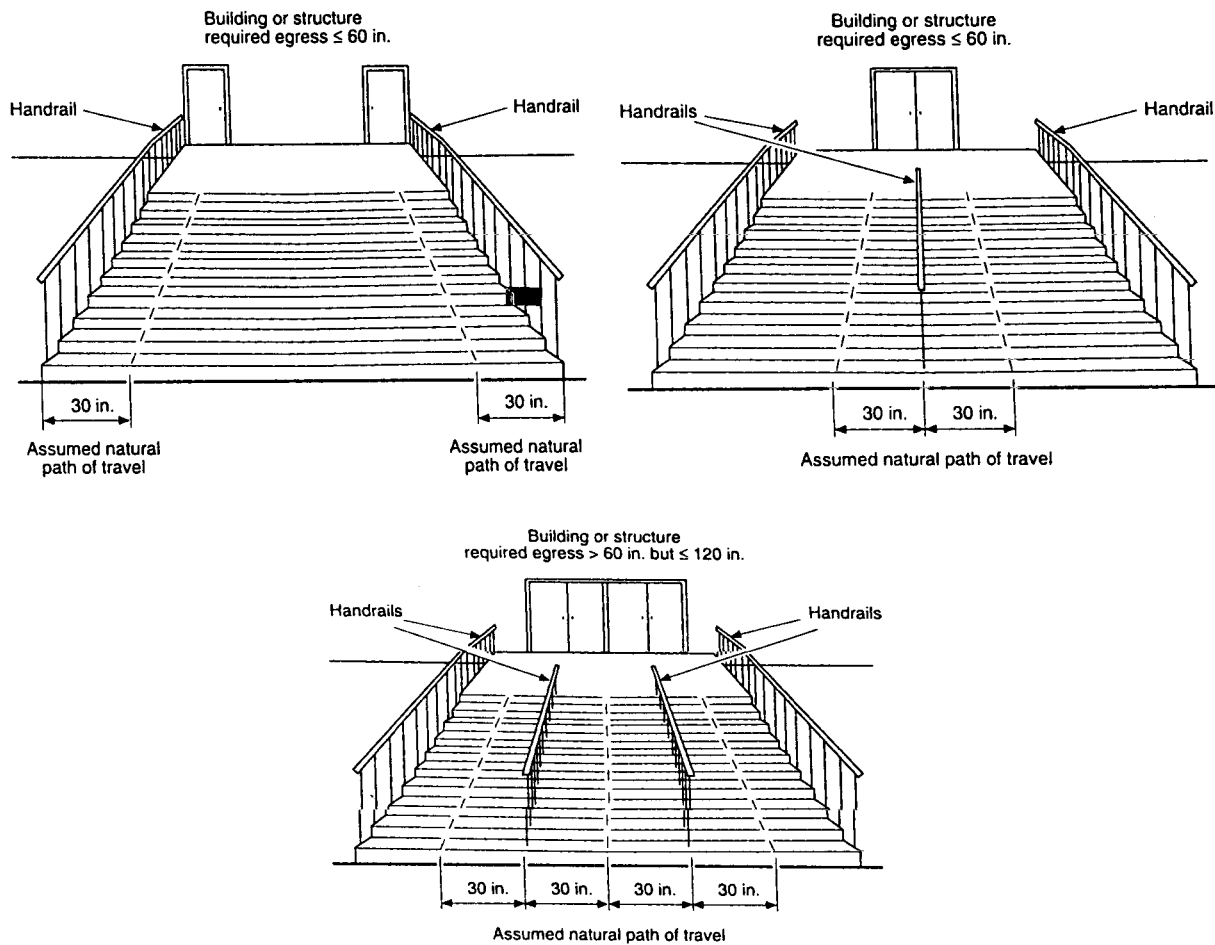
e. Intermediate rails, balusters and panel fillers shall be designed for a uniform load of not less than twenty-five (25) pounds per square foot over the gross area of the guardrail. ()

15. Stairway Handrails and Guardrails: ()

a. Every flight of stairs having four (4) or more risers or rising more than thirty (30) inches shall be equipped with standard stair railings and standard handrails as specified in this subsection, the width of the stair is to be measured clear of all obstructions except handrails. ()

- b. On stairways less than forty-four (44) inches wide having both sides enclosed, at least one (1) handrail, preferably on the right side descending shall be installed. ()
- c. On stairways less than forty-four (44) inches wide having one (1) side open, at least one (1) stair handrail on the open side shall be installed. ()
- d. On stairways less than forty-four (44) inches wide having both sides open, one (1) stair railing on each side shall be installed. ()
- e. On stairways more than forty-four (44) inches wide but less than eighty-eight (88) inches wide, one (1) handrail on each side regardless of whether the sides are open or enclosed shall be installed. ()
- f. On stairways eighty-eight (88) or more inches wide, one (1) handrail on each side regardless of whether the sides are open or enclosed and one (1) intermediate stair railing located approximately midway of the width shall be installed. EXCEPTION: stairs of a decorative nature in excess of that required for the occupant load of the area served by the stairs need only have intermediate handrails as needed to serve the occupant load of the stairs. See Figure 070.15 A. ()

FIGURE 070.15-A



Assumed natural paths of travel on monumental stairs with various handrail locations.

g. Winding stairs shall be equipped with a handrail off set to prevent walking on all portions of the treads having width less than six (6) inches. ()

16. Guardrail, Handrail, Toeboard and Cover Specifications: ()

a. A standard guardrail shall consist of top rail, intermediate rails, ornamental grid, and posts. The standard guardrail shall have a vertical height of forty-two (42) inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth surfaced throughout the length of the guardrail. The intermediate rails, balusters, or ornamental grid shall meet the requirements of IDAPA 17.10.10.070.12. The ends of the guardrails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard. ()

b. Minimum requirements for standard guardrails of various types of construction are specified herein. For wood guardrails, the posts shall be of at least two (2) inch by four (4) inch nominal stock spaced not to exceed six (6) feet; the top and intermediate rails shall be of at least two (2) inch by four (4) inch nominal stock. If top rail is made of two (2) right angle pieces of one (1)-inch by four (4) inch stock, posts may be spaced on eight (8) foot centers, with two (2) inch by four (4) inch intermediate rails. For pipe guardrails, posts, and top and intermediate railings shall be at least one and one-half (1 1/2) inches nominal diameter with posts spaced not more than eight (8) feet on centers. For structural steel guardrails, posts, and top and intermediate rails shall be of two (2) inch by two (2) inch by three eighths (3/8) inch angles or other metal shapes of equivalent bending strength with posts spaced not more than eight (8) feet on centers. The anchoring of posts and framing of members for guardrails of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least two hundred (200) pounds applied in any direction at any point on the top rail. Other types, sizes and arrangements of guardrail construction are acceptable provided they meet the following conditions. A smooth surfaced top rail at a height above floor, platform, runway, or ramp level forty-two (42) inches nominal; a strength to withstand at least the minimum requirement of two hundred (200) pounds top rail pressure; protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent to at least that afforded by a standard intermediate rail; elimination of overhang of rail ends unless such overhang does not constitute a hazard; such as, baluster railings, scrollwork railings, paneled railings. ()

c. A standard toeboard shall be a minimum of four (4) inches nominal in vertical height from its top edge to the level of the floor, platform, runway or ramp. It shall be securely fastened in place and with not more than one fourth (1/4) inch clearance above floor level. It may be made of any substantial material either solid or with openings not over 1 inch in greatest dimension. Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to intermediate rail, or to top rail shall be provided. ()

d. A stair handrail/guardrail shall be of construction similar to a standard guardrail but the vertical height shall be not more than thirty-eight (38) inches nor less than 34 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread. ()

e. A handrail shall consist of a length wise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. ()

f. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. Handrails shall be continuous the full length of the stairs and, except for private stairways, at least one (1) handrail shall extend in the direction of the stair run not less than twelve (12) inches beyond the top riser and not less than twelve (12) inches beyond the bottom riser. The ends shall be returned or shall terminate in newel posts or safety terminals. See Figures 070.14 A and 070.14 B. See Figure 070.16 A & B. ()

FIGURE 070.16-A

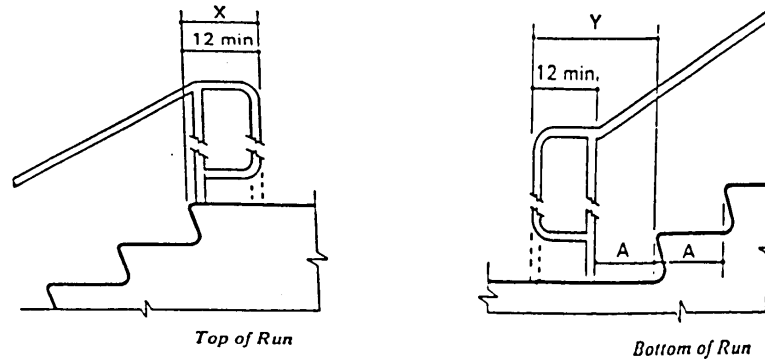
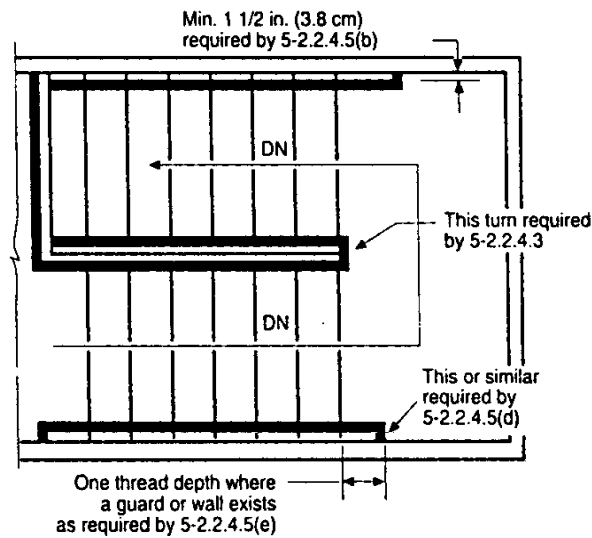
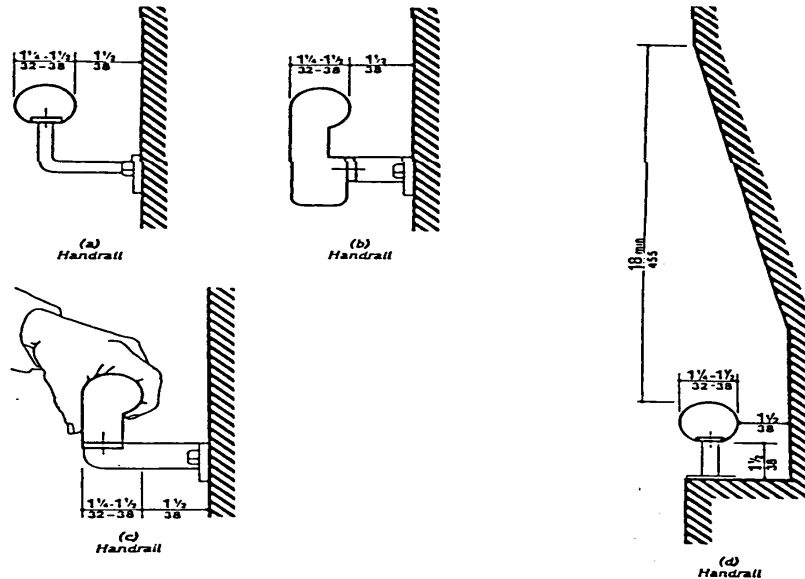


FIGURE 070.16-B



g. Minimum requirements for handrails of various types of construction are specified herein. The height of handrails shall be not more than thirty-eight (38) inches nor less than thirty-four (34) inches from upper surface of handrail to surface of the tread in line with face of riser or to surface of ramp. The size of handrails shall be: When of hardwood, shall be one and one-fourth (1 1/4) inch minimum to two (2) inches maximum in diameter; when of metal pipe, at least one and one-half (1 1/2) inches minimum to two (2) inches maximum in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least one and one-half (1 1/2) inches. The spacing of brackets shall not exceed eight (8) feet. Handrail brackets shall be such that the completed structure is capable of withstanding a load of at least two hundred (200) pounds applied in any direction at any point on the rail. See Figure 070.16 C. ()

FIGURE 070.16-C



h. Floor opening covers may be of any material that meets the following strength requirements: Trench or conduit covers and their supports, when located in roadways, shall be designed to carry a truck rear axle load of at least twenty thousand (20,000) pounds. Utility access covers and their supports when located in roadways, shall comply with local standard highway requirements, if any; otherwise, they shall be designed to carry a truck rear axle of at least twenty thousand (20,000) pounds. The construction of floor opening covers may be of any material that meets the strength requirements. Covers projecting not more than one (1) inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over thirty (30) degrees. All hinges, handles, bolts, or other parts shall set flush with the floor or cover surface. ()

i. Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred (200) pounds applied perpendicularly at any one (1) area on the screen. They shall also be of such construction and mounting that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. The construction shall be of grillwork with openings not more than four (4) inches long or of slat work with openings not more than two (2) inches wide with length unrestricted. ()

j. Wall opening barriers shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail or corresponding member. ()

k. Wall openings grab handles shall be not less than twelve (12) inches in length and shall be so mounted as to give one and one-half (1 1/2) inches clearance from the side framing of the wall opening. The size, material and anchoring of the grab handle shall be such that the completed structure is capable of withstanding a load of at least two hundred (200) pounds applied in any direction at any point of the handle. ()

l. Wall opening screens shall be of such construction and mounting that they are capable of withstanding a load of at least two hundred (200) pounds applied horizontally at any point on the near side of the screen. They shall be of solid construction, grill work with openings not more than eight (8) inches long, or slatwork with openings not more than four (4) inches wide with length unrestricted. ()

071. FIXED STAIRS AND RAMPS.

01. Scope. This section contains specifications for the safe design and construction of fixed stairs and ramps. This classification includes interior and exterior stairs around machinery, tanks and other equipment, and stairs leading to or from floors, platforms, or pits. ()
02. Definitions Applicable to this Section: ()
- a. Handrail is a single railing provided for grasping with the hand, supported on brackets from a wall or partition, to provide support for persons using a stairway or ramp. ()
 - b. Landing is an extended step or platform breaking a continuous run of stairs. ()
 - c. Nose, Nosing is that portion of a tread projecting beyond the face of the riser immediately below. ()
 - d. Open Riser is the air space between the treads of stairways without upright members (risers). ()
 - e. Platform is a working space for persons, elevated above the surrounding floor or ground, such as a balcony, or platform for the operation or maintenance of machinery and equipment. ()
 - f. Ramp is a walking surface in an accessible space that has a running slope greater than twenty (20) horizontal to every one (1) vertical (1:20). ()
 - g. Rise is the vertical distance from the top of a tread to the top of the next higher tread. ()
 - h. Riser is the upright member of a step situated at the back of a lower tread and near the leading edge of the next higher tread. ()
 - i. Stairs, Stairway is a series of steps leading from one (1) level floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or routinely by employees, or only occasionally by specific individuals. A series of steps and landings having two (2) or more risers constitutes stairs or stairway. ()
 - j. Stair railing is a vertical barrier erected along exposed sides of a stairway to prevent falls of persons. ()
 - k. Tread is the horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread. ()
 - l. Tread run is the horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread. ()
 - m. Tread width is the horizontal distance from front to back of tread including nosing when used. ()
03. General Requirements: ()
- a. Where fixed stairs or ramps are required they shall conform to the requirements of this section. ()
 - b. Every stairway having two (2) or more risers shall conform to the requirements of this section. ()
 - c. Every ramp with a rise greater than 1:20 shall conform with the requirements of this section. ()
 - d. Fixed stairs shall be provided for access from one (1) structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any equipment which requires

attention routinely during operations. Fixed stairs shall also be provided where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose employees to acids, caustics, gases, or to the harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required. It is not the intent of this section to preclude the use of fixed ladders for access to elevated tanks, towers and similar structures, overhead traveling cranes, etc., where the use of fixed ladders is common practice. Spiral stairways shall not be permitted except for special limited usage and secondary access situations where it is not practical to provide a conventional stairway. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five (5) feet. ()

04. Stair Strength. Fixed stairways shall be designed and constructed to carry a load of five (5) times the normal live load anticipated but never of less strength than to carry safely a moving concentrated load of one thousand (1,000) pounds. ()

05. Stair Width: ()

a. Stairs serving an occupant load of fifty (50) or more shall have a minimum width of not less than forty-four (44) inches and meet the requirements of IDAPA 17.10.04.040.08.m. ()

b. Stairs serving an occupant load of forty-nine (49) or less may have a minimum width of not less than thirty-six (36) inches and meet the requirements of IDAPA 17.10.04.040.08.m. ()

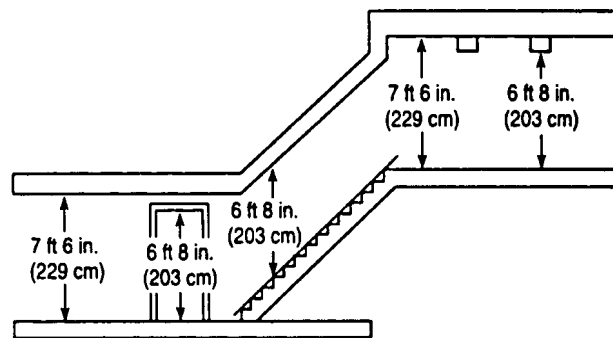
c. Stairs used to attend equipment shall have a minimum width of twenty-two (22) inches. ()

06. Stairway Rise and Run: ()

a. Fixed stairs shall be installed at an angle to the horizontal of not more than fifty (50) degrees. ()

b. Every stairway shall have a headroom clearance of not less than six (6) feet eight (8) inches except as specifically permitted else where in this standard. Headroom clearances shall be measured vertically from a plane parallel and tangent to the stairway tread nosing to the soffit above all points. See Figure 071.06 A. ()

FIGURE 071.06-A

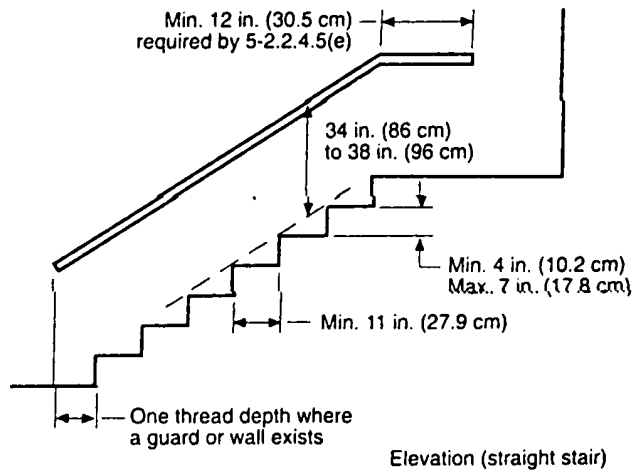


Measuring headroom. The nominal six (6) ft. eight (8) in. dimension is permitted for projections descending from the ceiling and for stairs.

c. The rise of every step in a stairway shall not be less than four (4) inches or greater than seven (7) inches except as specifically permitted else where in this standard. ()

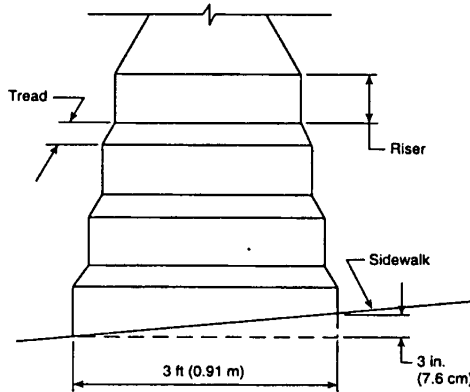
d. The run of each step shall not be less than eleven (11) inches as measured horizontally between the vertical planes of the furthestmost projection of adjacent threads except as specifically permitted else where in this standard. See Figure 071.06 B. ()

FIGURE 071.06-B



e. The rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one (1) or more treads of the stairs. The greatest riser height within any flight of stairs shall not exceed the smallest by more than three eighths (3/8) inch with no variation in height exceeding three sixteenths (3/16) inch between adjacent risers except as specifically permitted else where in this standard. The largest tread width within any flight of stairs shall not exceed the smallest by more than three eighths (3/8) inch except as specifically permitted else where in this standard. EXCEPTION: Where the bottom or top riser adjoins a sloping public way, walk, or driveway having an established grade and serving as a landing, the bottom or top riser may be reduced along the slope to less than four (4) inches in height with the variation in height of the bottom or top riser not to exceed three (3) inches in every three (3) feet of stairway width. See Figure 071.06 C ()

FIGURE 071.06C



Permissible across-the-stair slope.

Permissible across the stair slope.

f. Each tread and the top landing of a stairway, where risers are used, shall not have a nose which extends more than one-half (1/2) inch one (1) inch beyond the face of the lower riser. Noses should have an even leading edge. All treads shall be reasonably slip resistant and the nosings shall be of nonslip finish. Welded bar grating treads without nosings are acceptable providing the leading edge can be readily identified by personnel descending the stairway and provided the tread is serrated or is of definite nonslip design. Open grating type treads are desirable for outside stairs. ()

g. Fixed stairs used to access maintenance areas, access unoccupied roofs, and used for construction shall be installed at angles to the horizontal of between thirty (30) degrees and fifty (50) degrees. Any uniform combination of rise/tread dimensions may be used that will result in a stairway at any angle to the horizontal within the permissible range. Table 071.06 A gives rise/tread dimensions which will produce a stairway within the permissible range, stating the angle to the horizontal produced by each combination. However, the rise/tread combinations are not limited to those given in Table 071.06 A. ()

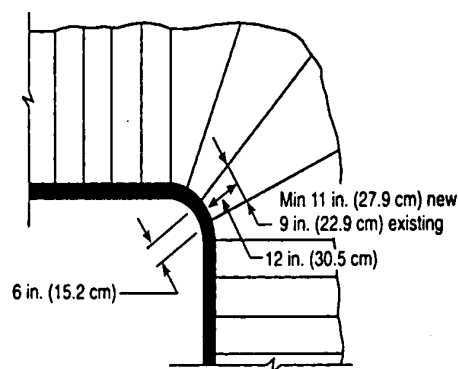
| TABLE 071.06 A | | |
|---------------------|------------------|-----------------------|
| Angle to Horizontal | Rise (in inches) | Tread run (in inches) |
| 30 Deg 35' | 6 1/2 | 11 |
| 32 Deg 08' | 6 3/4 | 10 3/4 |
| 33 Deg 41' | 7 | 10 1/2 |
| 35 Deg 16' | 7 1/4 | 10 1/4 |
| 36 Deg 52' | 7 1/2 | 10 |
| 38 Deg 29' | 7 3/4 | 9 3/4 |
| 40 Deg 08' | 8 | 9 1/2 |
| 41 Deg 44' | 8 1/4 | 9 1/4 |

| TABLE 071.06 A | | |
|---------------------|------------------|-----------------------|
| Angle to Horizontal | Rise (in inches) | Tread run (in inches) |
| 43 Deg 22' | 8 1/2 | 9 |
| 45 Deg 00' | 8 3/4 | 8 3/4 |
| 46 Deg 38' | 9 | 8 1/2 |
| 48 Deg 16' | 9 1/4 | 8 1/4 |
| 49 Deg 54' | 9 1/2 | 8 |

07. Aisles: Aisles, with a slope steeper than one (1) vertical to eight horizontal, in assembly rooms shall have steps, that shall consist of a series of risers and treads extending across the entire width of the aisle. The height of the risers shall not be more than seven (7) inches or less than four (4) inches and the tread run shall not be less than one hundred and twelve (112) inches. The riser height shall be uniform within each flight and the tread run shall be uniform throughout the aisle. Variations in run or height between adjacent treads or risers shall not exceed three sixteenths (3/16) inch. A contrasting marking stripe or other approved marking shall be provided on each tread at the nosing or leading edge such that the location of each tread is readily apparent when viewed in descent. Such stripe shall be a minimum of one (1) inch wide and a maximum of two (2) inches wide. EXCEPTION: When the slope of the aisle steps and the adjoining seating area is the same, the riser heights may be increased to a maximum of nine (9) inches and may be nonuniform but only to the extent necessitated by changes in the slope of the adjoining seating area to maintain adequate sight lines. ()

08. Winding Stairs: Winding stairs shall not be allowed except as specifically permitted else where in this standard. Where allowed winders may be used if the required width of run, eleven (11) inches, is provided at a point not more than twelve (12) inches from the side of the stairway where the tread are narrower, but in no case shall any width of run be less than 6 inches at any point. Winding stairs are permitted to be used in dwellings, lodging houses, and congregate residencies accommodating ten or less persons and as private stairways in hotels, apartment houses, and congregate residencies accommodating more than ten persons. See figure 071.08 A. ()

FIGURE 071.08-A

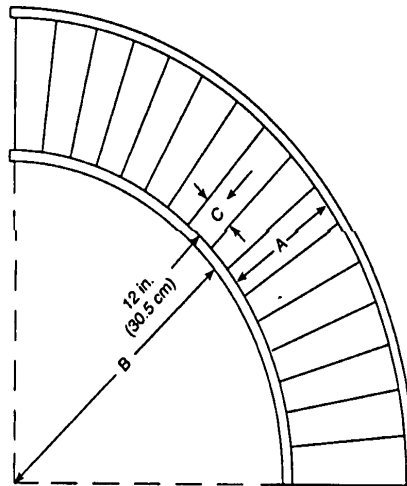


Acceptable winders.

Acceptable winders.

09. Curved or Circular Stairways: Curved or circular stairways may be used as an exit component, provided the minimum width of the run is not less than ten (10) inches and the smaller radius is not less than twice the width of the stairway. Riser height and tread width shall meet the requirements of IDAPA 17.10.10.071.06. See figure 071.09 A. ()

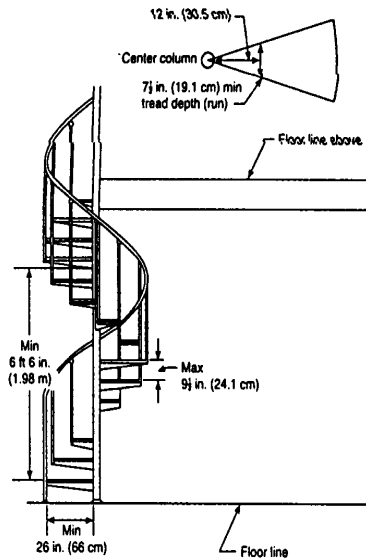
FIGURE 071.09-A



Curved stairs. Dimension B must be at least twice A. Dimension C must be at least 11 inches.

10. Spiral Stairways: Spiral stairways may be used, for access to mechanical and maintenance areas, in dwellings, lodging houses, and congregate residences accommodating ten or less persons and as private stairways in hotels, apartment houses, and congregate residences accommodating more than ten persons. Spiral stairways may be used, where allowed, for required exits when the area served is limited to four hundred (400) square feet. The tread must provide a clear walking area measuring at least twenty-six (26) inches from the outer edge of the supporting column to the inner edge of the handrail. A run of at least seven and one-half (7 1/2) inches is to be provided at a point twelve (12) inches from where the tread is the narrowest. The rise must be sufficient to provide six (6) foot six (6) inch head clearance. The riser height shall not exceed nine and one-half (9 1/2) inches. See figure 071.10 A. ()

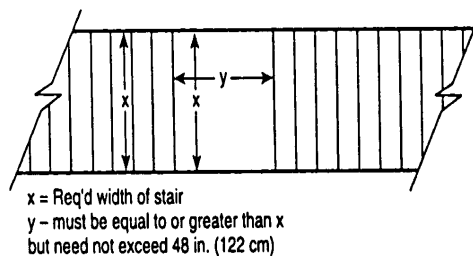
FIGURE 071.10-A



Spiral stairs. All treads must be identical, and the stair can serve a maximum occupant load of five persons.

11. Length of Stairways: There shall not be more than twelve (12) feet vertically between landings and the terminus of the stairs. Stairway landings shall be not less than the width of a stairway or the width of the door, which ever is the greater and a minimum of forty-four (44) inches in length measured in the direction of travel. See Figure 071.11 A. ()

FIGURE 071.11-A



Uniform width of stairs and intermediate landings. Intermediate landings provide level surfaces to facilitate recovering from trips and falls.

12. Ramps: ()
- a. Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp. The least possible slope shall be used for any ramp. The maximum slope of a ramp constructed after January 26, 1992 shall be

1:12. A ramp slope greater than 1:8 is not allowed. ()

b. The maximum slope for a service or construction ramp shall be 1:8. A ramp slope greater than 1:8 is not allowed. ()

c. The maximum rise for any ramp run shall be 30 inches between terminals, terminals and landings, or landings and landings. ()

d. The maximum rise for a service or construction ramp run shall be sixty (60) inches between terminals, terminals and landings, or landings and landings. ()

e. The width of ramps shall be a minimum of 44 inches when serving an occupant load of fifty (50) or more. Ramps serving an occupant load of forty-nine (49) or less may have a minimum width of thirty-six (36) inches. ()

f. Ramps shall have level landings at the top and bottom of the ramp and each ramp run Landings shall comply with the following: the landing shall be as wide as the ramp leading to it; the landing length shall be a minimum of sixty (60) inches; and when ramps change directions at landings, the minimum landing size shall be sixty (60) inches by sixty (60) inches. ()

g. Ramps having slopes greater than 1:15 and a rise greater than six (6) inches shall have handrails as required for stairways. Ramped aisles need not have handrails on sides serving fixed seating. ()

h. The surface of ramps shall be roughened or shall be of slip resistant materials. ()

i. Ramps shall have a headroom clearance of not less than seven (7) feet measured vertically from the finished floor surface of the ramp and landing to the soffit above at all points. ()

j. Ramps and landings shall be of substantial and reliable construction and shall be maintained in that condition. ()

k. Ramps and landings with drop offs shall have curbs, walls, guardrails, or projecting surfaces that prevent slipping off the ramp or landing. Curbs, when used, shall be a minimum of two (2) inches high. ()

l. Outdoor ramps, landings, and their approaches shall be designed and maintained so that water will not accumulate on the walking surface. ()

072. LADDERS.

01. Scope: ()

a. Ladders shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()

b. This section is intended to prescribe rules and establish minimum requirements for the construction, care, and use of common types of portable wood ladders, in order to ensure safety under normal conditions of usage. Other types of special ladders, fruit picker's ladders, combination step and extension ladders, stockroom step ladders, aisle way step ladders, shelf ladders, and library ladders are not specifically covered by this section however the general provision shall apply. ()

02. Definitions Applicable to this Section: ()

a. Angle of Inclination is the pitch angle between seventy-five (75) to ninety (90) degrees from the vertical for portable non self supporting ladders. ()

b. Back Leg (Rear Rail) are the support members of a self supporting portable ladder back section.

The back legs are joined by rungs, bars, rear braces, or other bracing to form the back section. ()

c. Cage is a guard that may be referred to as a cage or basket guard which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder. ()

d. Check is a lengthwise separation of wood, most of which occurs across the rings of annual growth. ()

e. Cleats are ladder crosspieces of rectangular cross section placed on edge on which a person may step in ascending or descending. ()

f. Combination Ladder is a portable ladder capable of being used as a step ladder or single or extension ladder. It may also be capable of being used as a trestle ladder or a stairwell ladder. Its components may be used as single ladders. ()

g. Compression Failure is a deformation (buckling) of the fibers due to excessive compression along the grain. ()

h. Compression Wood is an aberrant (abnormal) and highly variable type of wood structure occurring in softwood species. The wood commonly has density somewhat higher than does normal wood, but somewhat lower stiffness and density strength for its weight in addition to high longitudinal shrinkage. ()

i. Cross Grain (slope of grain) is a deviation of the fiber direction from a line parallel to the sides of the piece. ()

j. Decay is disintegration of wood substance due to action of wood destroying fungi. It is also known as dote or rot. ()

k. Double Front Ladder is a self supporting ladder, non adjustable in length, consisting of two (2) sections intended for climbing on both sides simultaneously, with steps for climbing hinged at the top to form angles with the base. ()

l. Duty Rating is the combination of factors, including, but not limited to, ladder type and design features which imply service capability. ()

m. Extension Ladder is a non self supporting portable ladder adjustable in length. It consists of two (2) or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails. ()

n. Extension Trestle Ladder is a self supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base. ()

o. Fastenings is a device to attach a ladder to a structure, building or equipment. ()

p. Fixed Ladder is a ladder permanently attached to a structure, building, or equipment. ()

q. Grab Bars are individual handholds placed adjacent to or as an extension above ladders for the purpose of providing access beyond the limits of the ladder. ()

r. Highest Standing Level is the vertical distance, expressed in feet and inches, from the uppermost step or rung the climber is allowed to use the horizontal plane of the ladder base support, with the portable ladder in the prescribed climbing position. ()

s. Individual Rung Ladder is a fixed ladder each rung of which is individually attached to a structure, building, or equipment. ()

- t. Inside Clear Width is the distance between the inside flanges of the siderails of a ladder. ()
- u. Knot is a branch or limb, imbedded in the tree and cut through in the process of lumber milling, classified according to size, quality, and occurrence. The size of the knot is determined as the average diameter on the surface of the piece. ()
- v. Ladder is a device usually consisting of two (2) side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending. ()
- w. Ladder Foot, Shoe, or Skid Resistant Bearing Surface is that component of ladder support that is in contact with the lower supporting surface. ()
- x. Ladder Safety Device is any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and which may incorporate such features as life belts, friction brakes, and sliding attachments. ()
- y. Ladder Type is the designation that identifies the working load. ()
- z. Low density Wood is that which is exceptionally light in weight and usually deficient in strength properties for the species. ()
- aa. Marking is any sign, label, stencil, or plate of a primary hazard or informational caricature, or both, affixed, painted, burned, stamped, or embossed on the ladder surface. ()
- bb. Maximum Extended Length or Maximum Working Length is the total length of the extension ladder when the middle or intermediate and top or fly sections are fully extended (maintaining the required overlap). ()
- cc. Permanent Deformation (set) is that deformation remaining in any part of a ladder after all loads have been removed. ()
- dd. Pitch. Pitch is the included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side. ()
- ee. Pitch and Bark Pockets is an opening extending parallel to the annual growth rings containing or that has contained, pitch, either solid or liquid. A bark pocket is an opening between annual growth rings that contains bark. ()
- ff. Platform is a landing surface that is used as a working or standing location. ()
- gg. Platform Ladder is a self supporting ladder of fixed size with a platform provided at the working level. The size is determined by the distance along the front rail from the platform to the base of the ladder. ()
- hh. Portable Ladder is a ladder that can readily be moved or carried, usually consisting of side rails joined at intervals by steps, rungs, or rear braces. ()
- ii. Rail is the side members joined at intervals by either rungs or steps. ()
- jj. Rear Braces are crosspieces or diagonals (in the back section of a self supporting ladder) not intended for climbing, which may be spaced at any interval. ()
- kk. Rungs are ladder cross pieces of circular or oval cross section on which a person may step in ascending or descending. ()
- ll. Section: Bottom or Base Section is the lowest section of a non self supporting portable ladder; Top or Fly Section is the uppermost section of a non self supporting portable ladder; Middle or Intermediate Section is the

section between the top (fly) and bottom (base) sections of a non self supporting portable ladder. ()

mm. Sectional Ladder is a non self supporting ladder, non adjustable in length, consisting of two (2) or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections. ()

nn. Shake is a separation along the grain, most of which occurs between the rings of annual growth. ()

oo. Ships Ladder is a cross between a ladder and stairs, typically it has handrails, steps, and a pitch of less than 75 degrees from the vertical. ()

pp. Side step Ladder is one from which a man getting off at the top must step sideways from the ladder in order to reach the landing. ()

qq. Side rolling Ladder is a semi fixed ladder, non adjustable in length, supported by attachments to a guide rail, which is generally fastened to shelving, the plane of the ladder being also the plane of motion. ()

rr. Single Ladder is a non self supporting portable ladder, non adjustable in length, consisting of but one (1) section. Its size is designated by the overall length of the side rails. ()

ss. Special Purpose Ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses. ()

tt. Steps are the flat cross pieces of a ladder on which a person may step in ascending or descending. ()

uu. Stepladder is a self supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails. ()

vv. Through Ladder is one from which a man getting off at the top must step through the ladder in order to reach the landing. ()

ww. Trestle Ladder. A trestle ladder is a self supporting portable ladder, non adjustable in length, consisting of sections hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge. ()

xx. Top Cap is the uppermost horizontal member of a portable stepladder. ()

yy. Top Step is the first step below the top cap of a portable stepladder. Where a ladder is constructed without a top cap, the top step is the first step below the top of the rails. ()

zz. Trolley Ladder. A trolley ladder is a semi fixed ladder, non adjustable in length, supported by attachments to an overhead track, the plane of the ladder being at right angles to the plane of motion. ()

aaa. Wane. Wane is bark, or the lack of wood from any cause, on the corner of a piece. ()

bbb. Well. A well is a permanent complete enclosure around a fixed ladder, which is attached to the walls of the wells. Proper clearance for a well will give the person who must climb the ladder the same protection as a cage. ()

ccc. Wood Characteristics. Wood characteristics are distinguishing features which by their extent and number determine the quality of a piece of wood. ()

ddd. Wood Irregularities. Wood irregularities are natural characteristics in or on wood that may lower its

durability, or utility. ()

eee. Working Length is the length of a non self supporting portable ladder measured along the rails from the base support point of the ladder to the point of bearing at the top. ()

fff. Working Load is the maximum applied load, including the weight of the user, materials, and tools, which the ladder is to support for the intended use. ()

03. General Requirements: ()

a. Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings shall be securely attached, and the movable parts shall operate freely without binding or undue play. ()

b. Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated. ()

c. Ropes or cables shall be inspected frequently and frayed or badly worn ropes or cables shall be replaced. ()

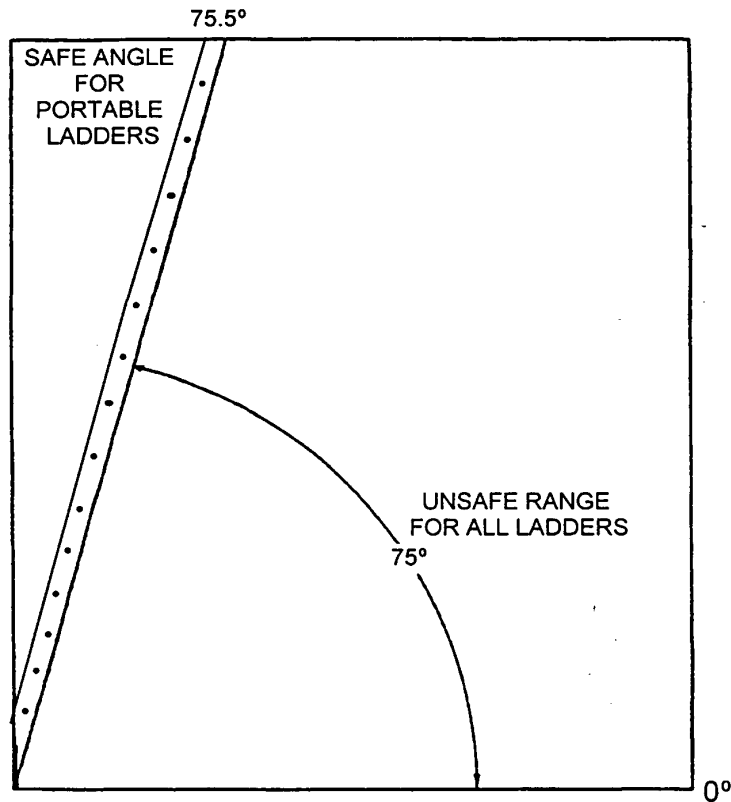
d. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance. ()

e. Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use". ()

f. Ladder rungs shall be kept free of grease and oil. If ladders are exposed to oil and grease, or slippery materials, they shall be cleaned as soon as possible. ()

g. Portable non self supporting and fixed rung and cleat ladders shall be erected at a pitch of seventy-five point five (75.5) degrees, (horizontal distance from the top support to the foot of the ladder is one quarter (1/4) of the working length of the ladder) (the length along the ladder between the foot and the top support). (See Figure 072.03 A). ()

FIGURE 072.03-A



- h. Ladders shall be so placed as to prevent slipping, or it shall be lashed, or held in position. ()
- i. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds. ()
- j. Ladders not designed and approved for use by more than one (1) person shall not be used by more than one (1) person. ()
- k. Portable ladders shall be so placed that the side rails have a secure footing. Safety shoes of good substantial design should be installed on all ladders. Where ladders with no safety shoes or spikes are used on hard, slick surfaces, a foot ladder board should be employed. ()
- l. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load. ()
- m. Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded. ()
- n. Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height. ()

- o. Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used. ()
- p. Improvised repairs shall not be made to ladders. ()
- q. Short ladders shall not be spliced together to provide long sections. ()
- r. Ladders made by fastening cleats across a single rail shall not be used. ()
- s. Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes. ()
- t. The tops of ordinary types of stepladders shall not be used as steps. ()
- u. On two (2) section extension ladders the minimum overlap for the two (2) sections in use shall be as indicated in Table 072.03 A. ()

| Size of ladder (ft) | Overlap (ft) |
|--------------------------------|---------------------|
| Up to and including 36 | 3 |
| Over 36 up to and including 48 | 4 |
| Over 48 up to and including 60 | 5 |

- v. No portable ladder shall be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter, or roof line. When this is not practical, grab nails, which provide a secure grip for an employee moving to or from the point of access shall be installed. ()
- w. The bracing on the back side of step ladders is designed solely for increasing stability and shall not be used for climbing. ()
- x. When working from a ladder, over twenty (20) feet from the ground or floor, the ladder shall be secured at both top and bottom. ()
- y. No type of work shall be performed on a ladder over twenty (20) feet from the ground or floor that requires the use of both hands to perform the work, unless personal fall protection is used. ()
- z. See Figures 072.03 B and 072.03 C for typical ladder details. ()

FIGURE 072.03-B

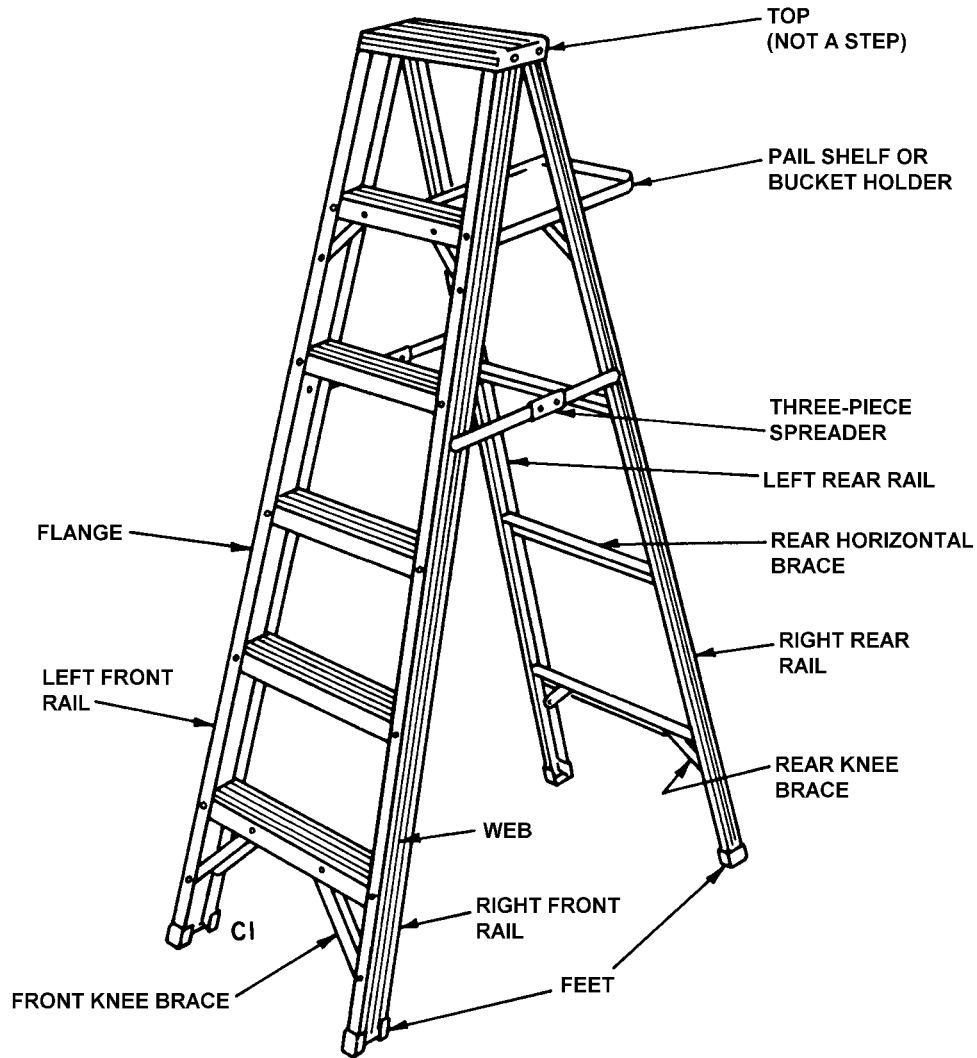
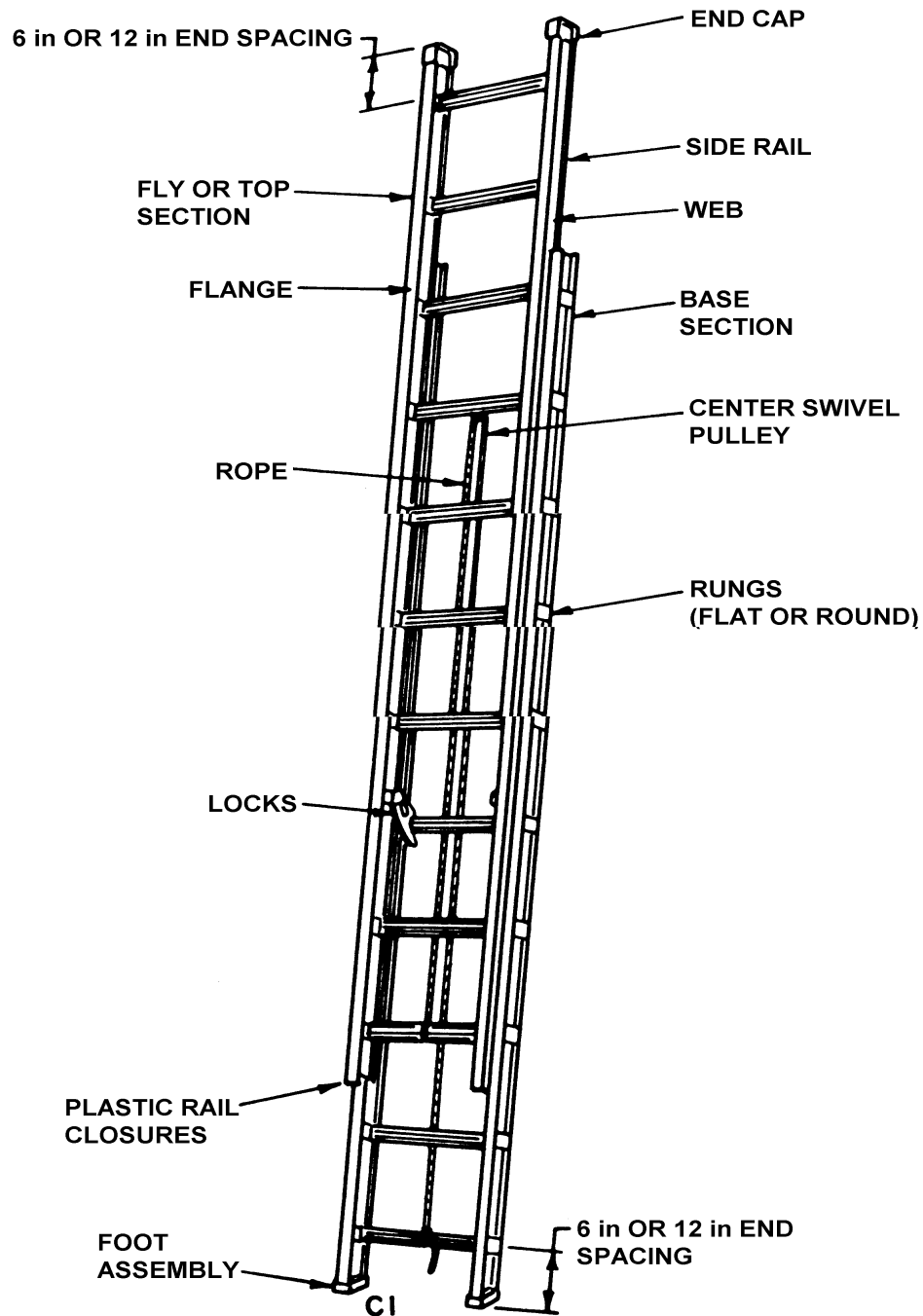


FIGURE 072.03-C



- aa. Ladders shall be handled with care and not subject to unnecessary dropping, jarring, or misuse. ()
- bb. The area around the top and bottom of the ladder shall be kept clean. ()
- cc. When ascending or descending, the climber shall face the ladder. ()
- dd. Ships ladders are inherently dangerous and shall not be used. ()
- ee. Workmen shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands. ()
04. Portable Wood Ladders: ()
- a. This subsection is intended to prescribe rules and establish minimum requirements for the construction, care, and use of the common types of portable wood ladders, in order to insure safety under normal conditions of usage. ()
- b. All wood parts shall be free from sharp edges and splinters; sound and free by accepted visual inspection from shake, wane, compression failures, decay or other irregularities except as hereinafter provided. Low density wood shall not be used. ()
- c. Stepladders longer than twenty (20) feet shall not be supplied. ()
- d. Stepladders as hereinafter specified shall be of three (3) types and shall be for the use herein specified: TYPE I Industrial stepladder, three (3) to twenty (20) feet for heavy duty use, such as utilities, contractors, and industrial use (three hundred (300) pound maximum load limit); TYPE II Commercial stepladder, three (3) to twelve (12) feet for medium duty use, such as painters, offices, and light industrial use (two hundred and fifty (250) pound maximum load limit); TYPE III Household stepladders, three (3) to six (6) feet for light duty use, such as light household use (two hundred (200) pound maximum load limit). ()
- e. A uniform step spacing shall be employed which shall be not more than twelve (12) inches. Steps shall be parallel and level when the ladder is in position for use. ()
- f. The minimum width between side rails at the top, inside to inside, shall be not less than eleven and one-half (11 1/2) inches. From top to bottom the side rails shall spread at least one (1) inch for each foot of length of stepladder. ()
- g. A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open position shall be a component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user. For Type III ladders, the pail shelf and spreader may be confined in one (1) unit (the so called shelf lock ladder). ()
- h. Single ladders longer than thirty (30) feet shall not be supplied. ()
- i. Two (2) section extension ladders longer than sixty (60) feet shall not be supplied. All ladders of this type shall consist of two (2) sections, one (1) to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered. ()
- j. Assembled combinations of sectional ladders longer than lengths specified in this subsection shall not be used. ()
- k. Trestle ladders, or extension sections or base sections of extension trestle ladders longer than twenty (20) feet shall not be supplied. ()
- l. Painters stepladders longer than twelve (12) feet shall not be supplied. ()

- m. A mason's ladder is a special type of single ladder intended for use in heavy construction work. Mason's ladders longer than forty (40) feet shall not be supplied. ()
- n. Trolley and side rolling ladders longer than twenty (20) feet shall not be supplied. ()
- o. Portable wood ladders with reinforced rails shall be used only metal reinforcement on the under side. ()
- p. The middle and top sections of sectional or window cleaner's ladders shall not be used as a bottom section unless it is equipped with safety shoes. ()
- q. Portable rung ladders shall be equipped with non slip bases when there is a possibility of slipping. Non slip bases are not intended as a substitute for care in safely placing, lashing, or holding a ladder that is being used on a slippery surface. ()
- r. Job made ladders shall be constructed for a specific intended use. ()
- s. Job made ladders (single ladders) shall not exceed thirty (30) feet in length between supports (base and top landing). If ladders are to connect different landings, or if the length required exceeds this maximum length, two (2) or more separate ladders shall be used, offset with a platform between each ladder. Guardrails and toeboards shall be erected on the exposed sides of platforms. ()
- t. The width of single ladders shall be at least fifteen (15) inches, but not more than twenty (20) inches, between rails at the top. ()
- u. Side rails shall be parallel or flared top to bottom by not more than one quarter (1/4) of an inch for each 2 feet of length. ()
- v. Wood side rails of ladders having cleats shall be not less than one and one-half (1 1/2) inches thick and three and one-half (3 1/2) inches deep (two (2)" x four (4)" nominal) when made of Group two (2) or three (3) woods. (See Table 072.04 A) Wood side rails of group 4 woods may be used in the same cross section of dimensions for single ladders up to twenty (20) feet in length. ()

| TABLE 072.04 A | | | |
|-----------------------|--------------------------|----------------|--------------------------|
| SPECIES | DENSITY (lb./ft.) | SPECIES | DENSITY (lb./ft.) |
| GROUP I | | GROUP III | |
| White Ash | 41 | Magnolia | 35 |
| Beech | 48 | Noble Fir | 27 |
| Birch | 44 | Norway Pine | 31 |
| Rock Elm | 43 | Poplar | 28 |
| Hickory | 50 | Redwood | 25 |
| Locust | 47 | Eastern Spruce | 28 |
| Hard Maple | 42 | Sitka Spruce | 28 |
| Red Maple | 36 | Sycamore | 35 |
| Red Oak | 43 | Tamarack | 37 |
| White Oak | 46 | Tupelo | 35 |
| Pecan | 46 | GROUP IV | |

| TABLE 072.04 A | | | |
|---------------------------------|--------------------------|---------------------|--------------------------|
| SPECIES | DENSITY (lb./ft.) | SPECIES | DENSITY (lb./ft.) |
| Persimmon | 50 | Aspen | 27 |
| GROUP II | | Basswood | 25 |
| Douglas Fir (Coast Region) | 34 | Buckeye | 25 |
| Western Larch | 38 | Butternut | 27 |
| Southern Yellow Pine | 37 | Incense Cedar | 25 |
| GROUP III | | Western Red Cedar | 23 |
| Red Alder | 28 | Black Cottonwood | 24 |
| Oregon Ash | 38 | White Fir | 26 |
| Alaska Cedar | 31 | Hackberry | 37 |
| Pumpkin Ash | 37 | Eastern Hemlock | 28 |
| Port Orchard Cedar | 30 | Holly | 39 |
| Cucumber | 34 | Soft Maple | 33 |
| Cypress | 32 | Lodgepole Pine | 29 |
| Soft Elm | 36 | Idaho White Pine | 28 |
| Douglas Fir (Rocky Mtn. Region) | 30 | Northern White Pine | 25 |
| Oregon Maple | 34 | Ponderosa Pine | 28 |
| Gum | 34 | Sugar Pine | 26 |
| West Coast Hemlock | 30 | | |

w. It is preferable that side rails be continuous. If splicing is necessary to attain the required length, however, the splice must develop the full strength of a continuous side rail of the same length. ()

x. Two (2) inch by two (2) inch lumber shall be used for side rails of single ladders up to sixteen (16) feet long; three (3) inch by six (6) inch lumber shall be used for single ladders from sixteen (16) feet to thirty (30) feet in length. ()

y. Wood Cleats shall have the following minimum dimensions when made of Group I woods (See Table 072.04 B). ()

| TABLE 072.04 B | | |
|------------------------------------|---------------------------|-----------------------|
| Length of Cleats (inches) | Thickness (inches) | Width (inches) |
| Up to and including 20 | 3/4 | 3 |
| Over 20 and up to and including 30 | 3/4 | 3 3/4 |

z. Cleats may be made of species of any other group of wood (see Table 072.04 A) provided equal or

greater strength is maintained. ()

aa. Cleats shall be inset into the edges of the side rails one-half (1/2) inch, or filler blocks shall be used on the rails between the cleats. The cleats shall be secured to each rail with three (3) 10d common wire nails or other fasteners of equivalent strength. ()

bb. Cleats shall be uniformly spaced twelve (12) inches top to top. This uniform spacing also includes the space between the platform or floor level and the lowest step and also the space between the top of the step and the platform, level, or landing. ()

05. Portable Metal Ladders: ()

a. Specific design and construction requirements are not a part of this section because of the wide variety of metals and design possibilities. However, the design shall be such as to produce a ladder without structural defects or accident hazards such as sharp edges, burrs, etc. The metal selected shall be of sufficient strength and shall be protected against corrosion unless inherently corrosion resistant. ()

b. A uniform step spacing shall be employed which shall be not more than twelve (12) inches. Steps shall be parallel and level when the ladder is in position for use. ()

c. Rungs and steps shall be corrugated, knurled, dimpled, coated with skid resistant material, or otherwise treated to minimize the possibility of slipping. ()

d. The minimum width between side rails of a straight ladder or any section of an extension ladder shall be 12 inches. ()

e. The length of single ladders or individual sections of ladders shall not exceed thirty (30) feet. Two (2) section ladders shall not exceed forty-eight (48) feet in length and over two (2) section ladders shall not exceed 60 feet in length. ()

f. Extension ladders shall be equipped with positive tops which will insure the overlap specified in Table 072.03 A. ()

g. Metal stepladders shall not exceed twenty (20) feet in length. ()

h. The bottoms of the rails (the base of the legs) are to be supplied with insulating non slip material. ()

i. A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each metal stepladder. The spreader shall have all sharp points or edges covered or removed. ()

j. The length of a platform ladder shall not exceed twenty (20) feet. The length of a platform ladder shall be measured along the front rail from the floor to the platform. ()

k. Trestle ladders or extension sections or base sections of extension trestle ladders shall be not more than 20 feet in length. ()

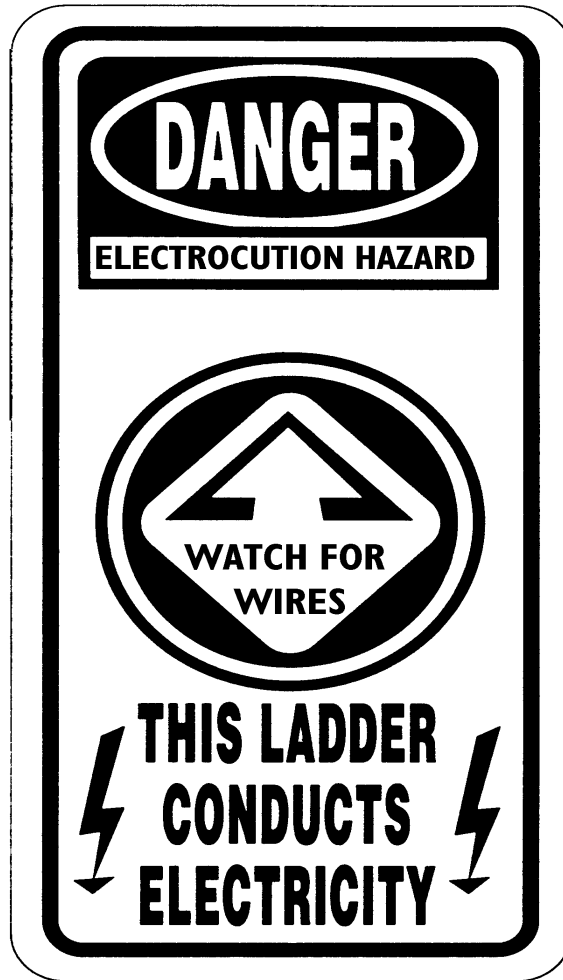
l. Complete ladder inspection shall be periodical. If a ladder is involved in any of the following, immediate inspection is necessary: if ladders tip over, inspect ladder for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shear; if ladders are exposed to excessive heat as in the case of fire, the ladder should be inspected visually for damage and tested for deflection and strength characteristics. In doubtful cases, do not use the ladder. ()

m. If ladders are to be subjected to certain acids or alkali solutions, a protective coating, such as asphalt and varnish, shall be applied to the equipment. ()

n. Portable metal ladders shall not be used for electrical work or where they may contact electrical conductors. ()

o. Portable metal ladders shall have "Electrocution Hazard, This Ladder Conducts Electricity" stenciled or labeled on the ladder. See Figure 072.05 A. ()

FIGURE 072.05-A



06. Fixed Ladders: ()

a. The minimum design live load for fixed ladders shall be a single concentrated load of two hundred (200) pounds. ()

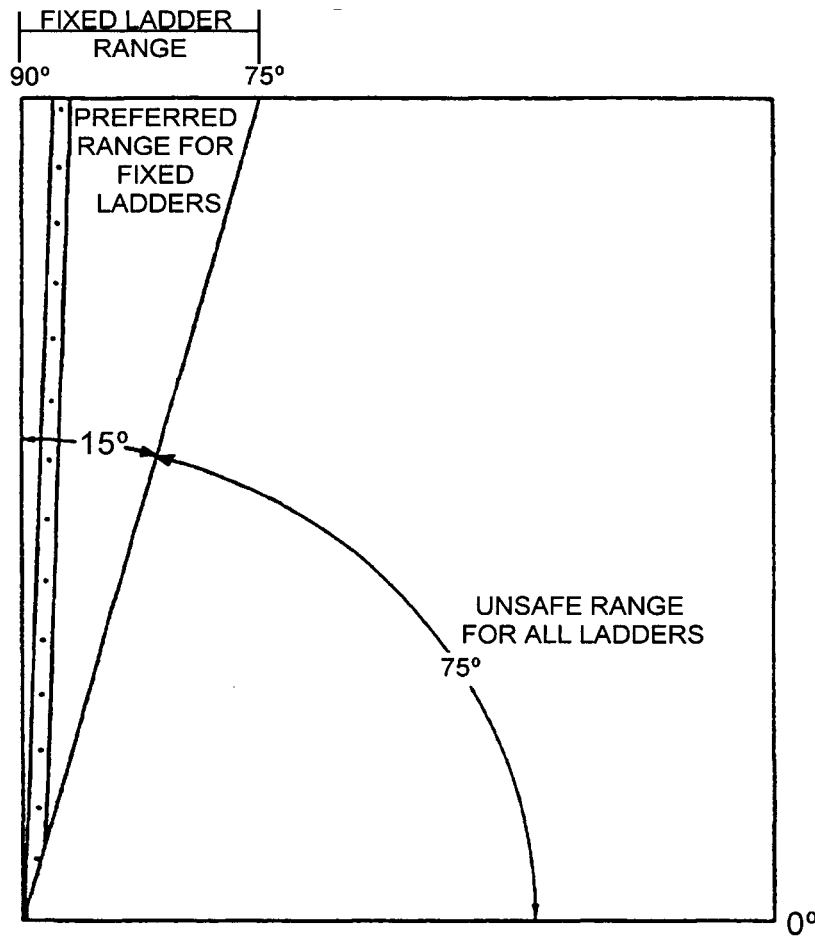
b. The number and position of additional concentrated live load units of two hundred (200) pounds each as determined from anticipated usage of the ladder shall be considered in the design. ()

c. The live loads imposed by persons occupying the ladder shall be considered to be concentrated at such points as will cause the maximum stress in the structural member being considered. ()

d. The weight of the ladder and attached appurtenances together with the live load shall be considered in the design of rails and fastenings. ()

e. Design stresses for fixed ladders consisting of wood side rails and wood rungs or cleats, used at a pitch in the range of seventy-five (75) degrees to ninety (90) degrees and intended for use by no more than one (1) person per section, single ladders as described in IDAPA 17.10.10.072.06.a. and IDAPA 17.10.10.072.03.g. are acceptable. See Figure 072.06 A. ()

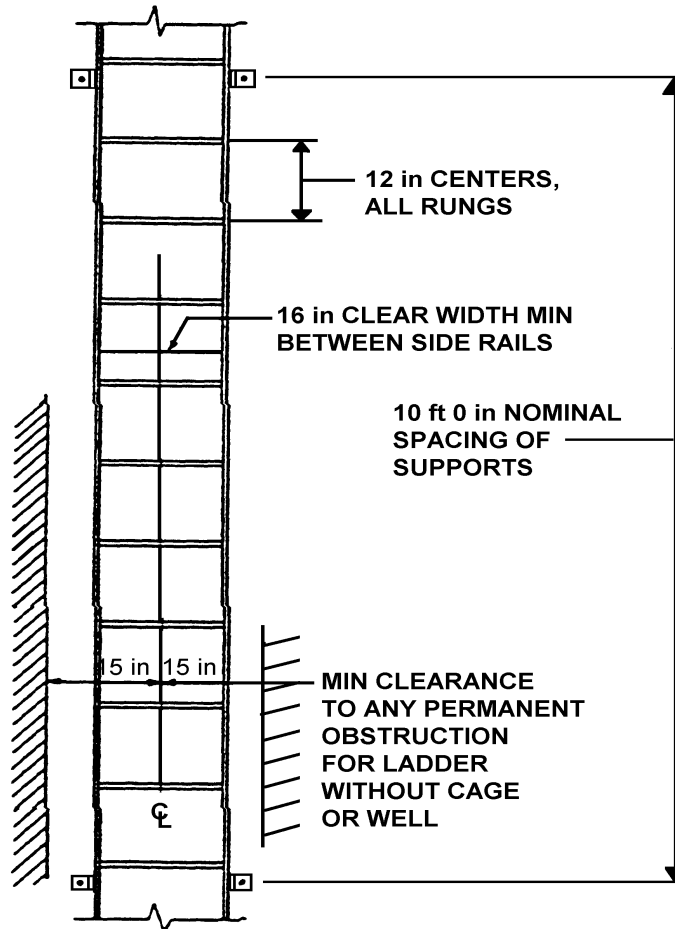
FIGURE 072.06-A



f. All rungs shall have a minimum diameter of three fourths (3/4) inch for metal ladders, except as covered in IDAPA 17.10.10.072.06.p., and a minimum diameter of one and one eighth (1 1/8) inches for wood ladders. ()

g. The distance between rungs, cleats, and steps shall not exceed twelve (12) inches and shall be uniform throughout the length of the ladder. See Figure 072.06 B. ()

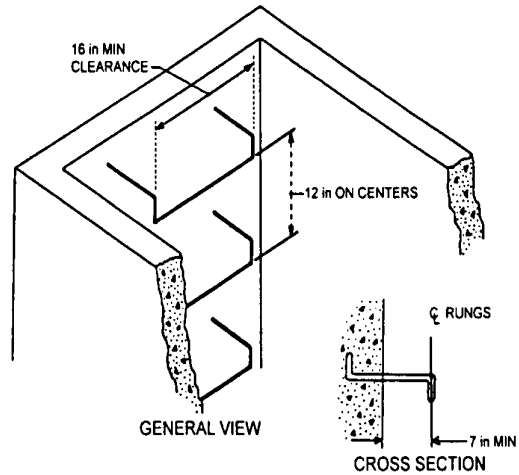
FIGURE 072.06-B



SUPPORT SPACING, LADDER
DIMENSIONS, AND SIDE CLEARANCES

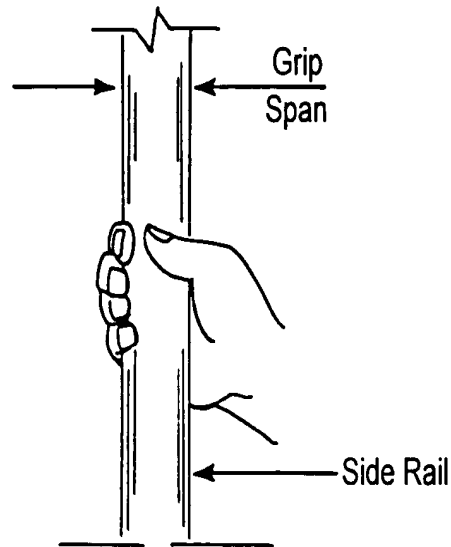
- h. The minimum clear length of rungs or cleats shall be sixteen (16) inches. See Figure 072.06 B. ()
- i. Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard. ()
- j. The rungs of an individual rung ladder shall be so designed that the foot cannot slide off the end. (As shown in Figure 072.06 C). ()

FIGURE 072.06-C



k. Side rails which might be used as a climbing aid shall be of such cross sections as to afford adequate gripping surface without sharp edges, splinters or burrs. See Figure 072.06 D. ()

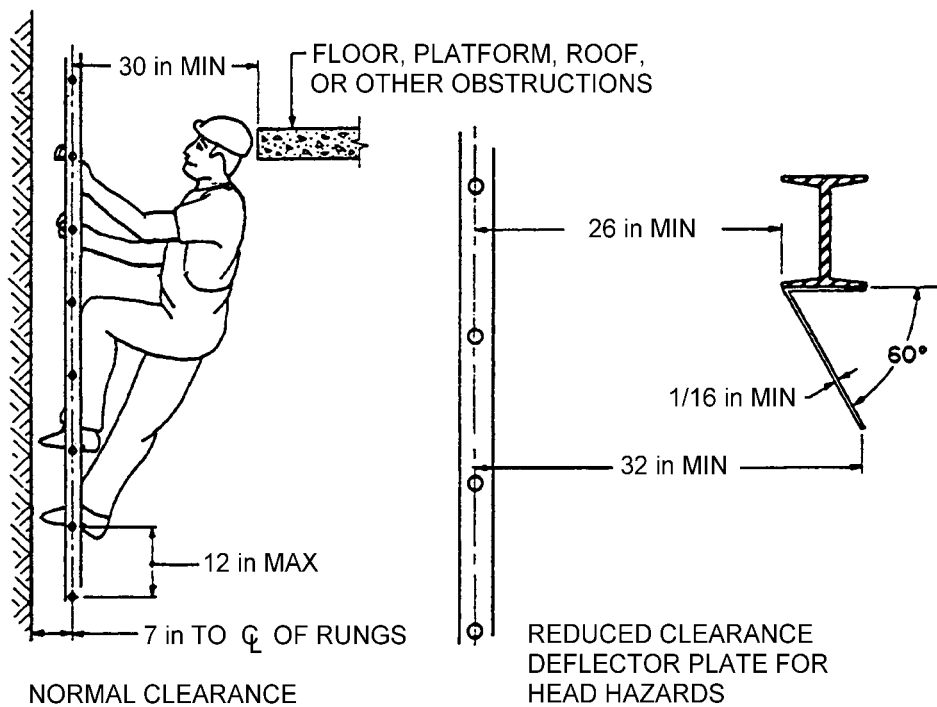
FIGURE 072.06-D



- l. Fastenings shall be an integral part of fixed ladder design. ()
- m. All splices made by whatever means shall have smooth transition with original members and with no sharp or extensive projections. ()

- n. Adequate means shall be employed to protect dissimilar metals from electrolytic action when such metals are joined. ()
- o. All welding shall be in accordance with the "Code for Welding in Building Construction" (AWS D1.0 1966). ()
- p. For protection from deterioration metal ladders and appurtenances shall be painted or otherwise treated to resist corrosion formed by individual metal rungs imbedded in concrete, which serve as access to pits and to other areas under floors, are frequently located in an atmosphere that causes corrosion and rusting. To increase rung life in such atmosphere, individual metal rungs shall have a minimum diameter of 1 inch or shall be painted or otherwise treated to resist corrosion and rusting. ()
- q. Wood ladders, when used under conditions where decay may occur, shall be treated with a nonirritating preservative, and the design shall be such as to prevent or minimize the accumulation of water on wood parts. ()
- r. When different types of materials are used in the construction of a ladder, the materials used shall be so treated as to have no harmful effect one upon the other. ()
- s. On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be thirty-six (36) inches for a pitch of seventy-six (76) degrees, and thirty (30) inches for a pitch of ninety (90) degrees (Figure 072.06 E of this subsection), with minimum clearance for intermediate pitches varying between these two (2) limits in proportion to the slope except as provided in IDAPA 17.10.10.072.06.v. and IDAPA 17.10.10.072.06.w. ()

FIGURE 072.06-E



t. Ladders without cages or wells shall have a clear width of at least fifteen (15) inches shall be provided each way from the centerline of the ladder in the climbing space as shown in Figure 072.06 B, except when cages or wells are necessary. ()

u. Ladders equipped with cage or basket are exempted from the provisions of s. and t. of this subsection, but shall conform to the provisions of IDAPA 17.10.10.072.06.z. through 072.06.dd. Fixed ladders in smooth walled wells are exempted from the provisions of a. of this subsection, but shall conform to the provisions of IDAPA 17.10.10.072.06.ee. ()

v. The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder shall be not less than seven (7) inches, except that when unavoidable obstructions are encountered, minimum clearances as shown in Figure 072.06 F-A-B shall be provided. ()

FIGURE 072.06-F-A

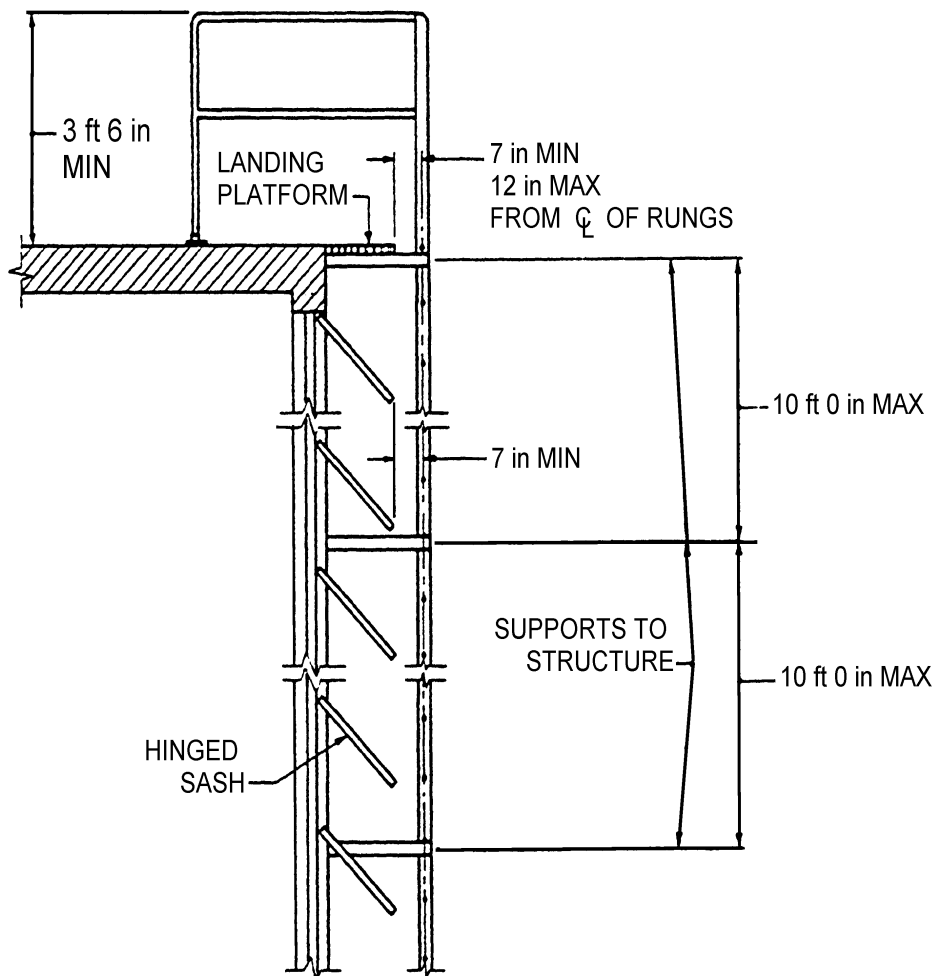
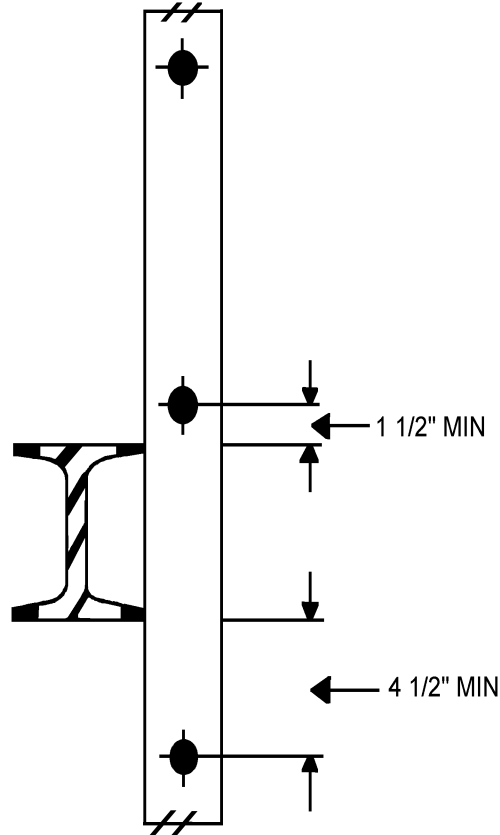


FIGURE 072.06-F-B

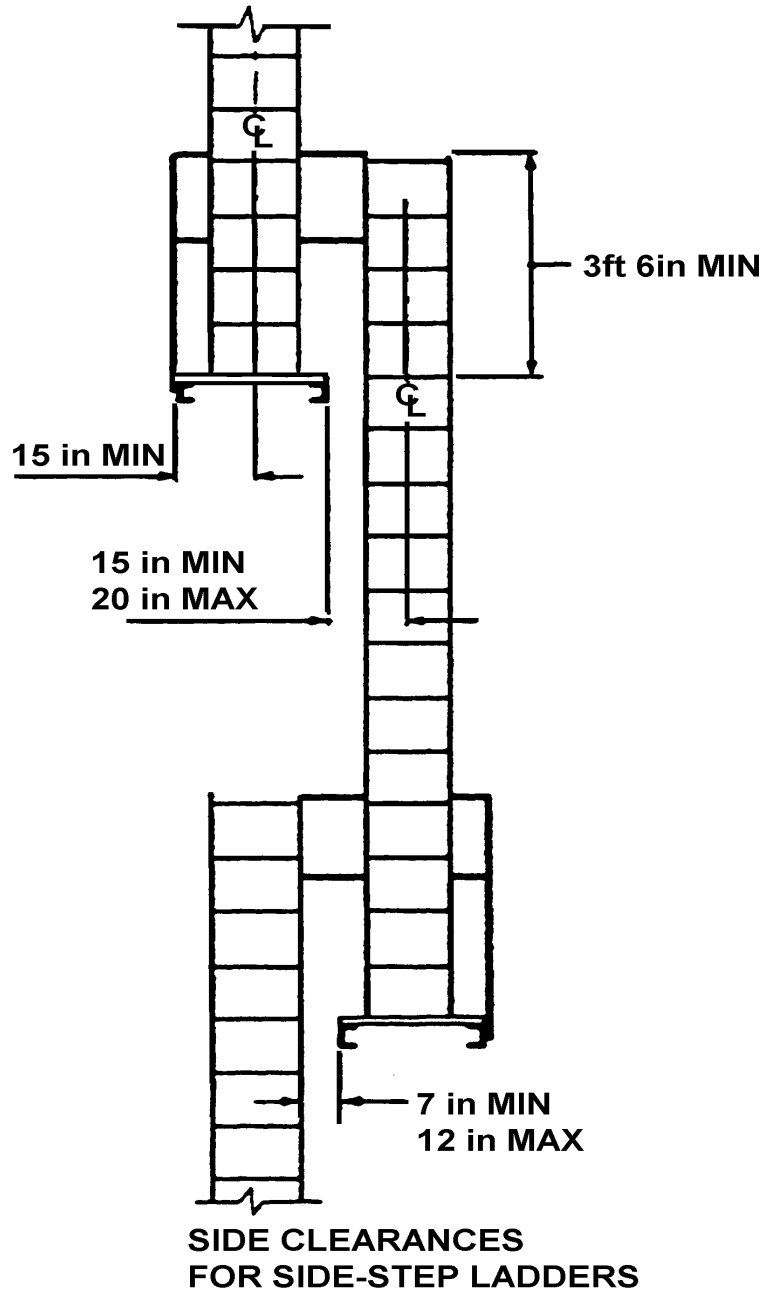
MINIMUM LADDER CLEARANCES



w. The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bars shall be not less than four (4) inches. Grab bars shall not protrude on the climbing side beyond the rungs of the ladder which they serve. ()

x. The step across distance from the nearest edge of ladder to the nearest edge of equipment or structure shall be not more than twelve (12) inches, or less than seven (7) inches. (Figure 072.06 G) ()

FIGURE 072.06-G



y. Counter weighted hatch covers shall open a minimum of sixty (60) degrees from the horizontal. The distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side shall be not less than twenty-six (26) inches for offset wells or thirty (30) inches for straight wells. There shall be no protruding

potential hazards within twenty-six (26) inches of the centerline of rungs or cleats; any such hazards within thirty (30) inches of the centerline of the rungs or cleats shall be fitted with deflector plates placed at an angle of sixty (60) degrees from the horizontal as indicated in Figure 072.06 H. The relationship of a fixed ladder to an acceptable Counter weighted hatch cover is illustrated in Figure 072.06 I. Hatches shall have a fixed or telescoping ladder extension.

FIGURE 072.06-H

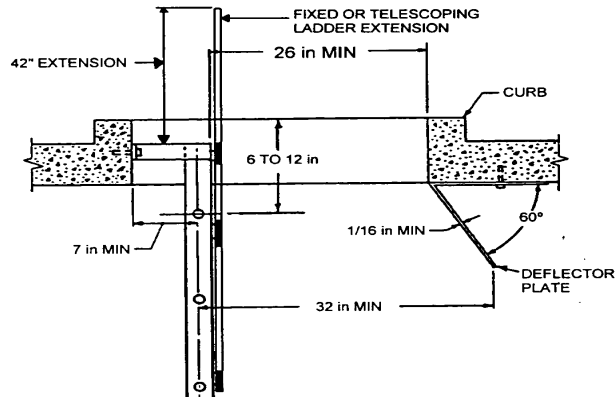
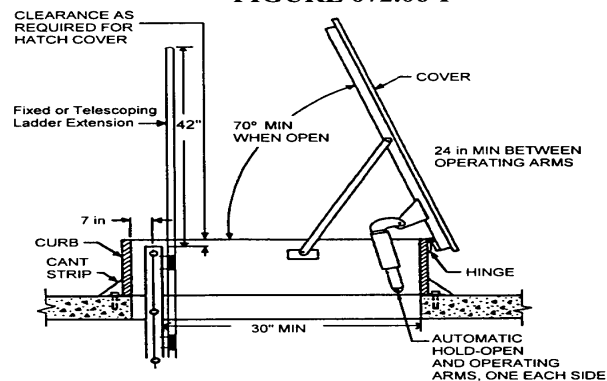


FIGURE 072.06-I



z. Cages or wells (except on chimney ladders) shall be built as shown in Figures 072.06 J and 072.06 K or of equivalent construction.

FIGURE 073.06-J

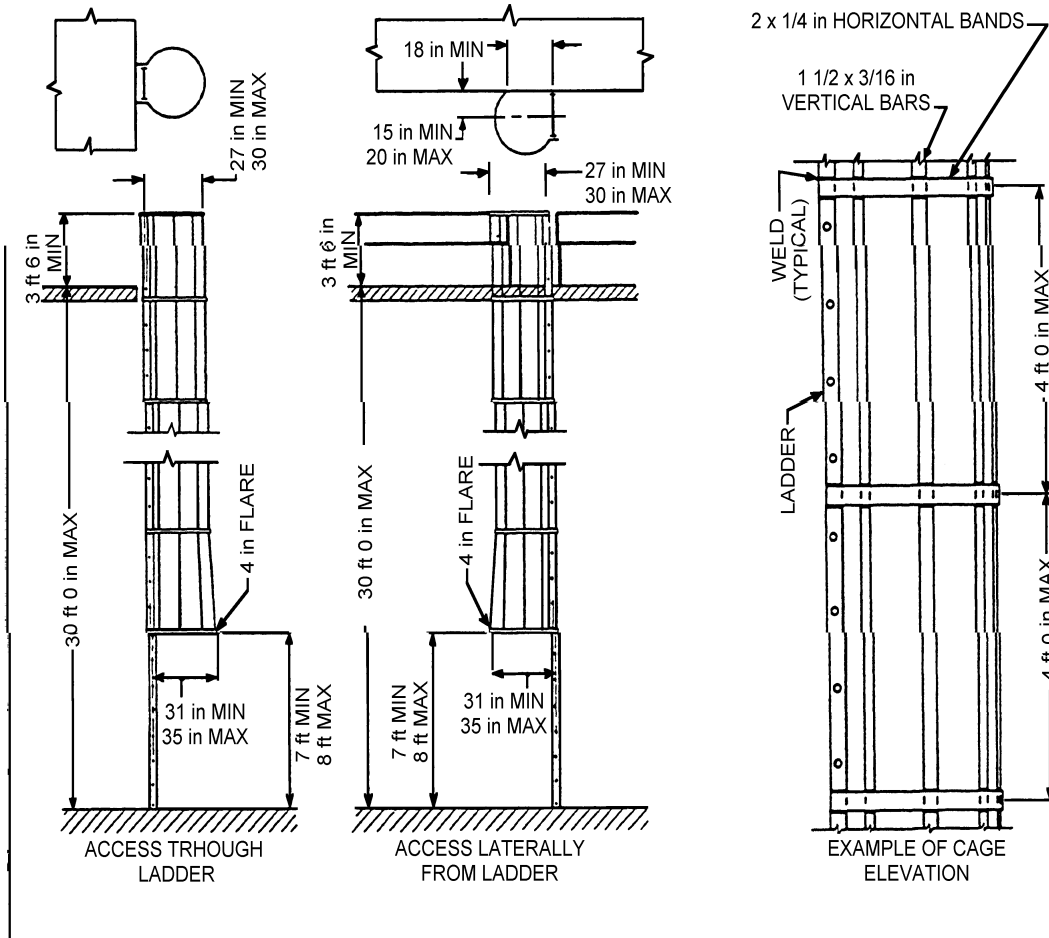
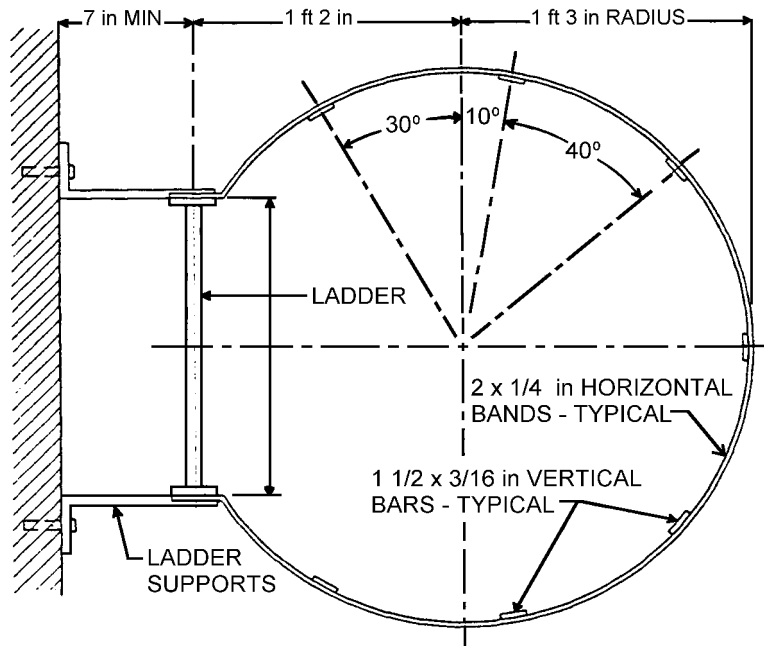


FIGURE 072.06-K



aa. Cages or wells (except as provided in 11. of this subsection) conforming to the dimensions shown in Figures 072.06 J and 072.06 K shall be provided on ladders of more than twenty (20) feet to a maximum unbroken length of thirty (30) feet. ()

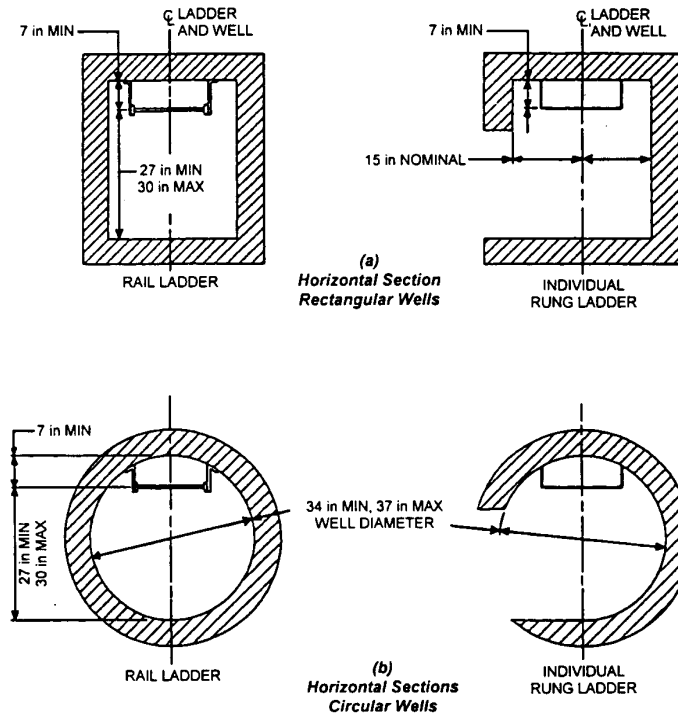
bb. Cages shall extend a minimum of forty-two (42) inches above the top of landing, unless other acceptable protection is provided. ()

cc. Cages shall extend down the ladder to a point not less than seven (7) feet nor more than 8 feet above the base of the ladder, with bottom flared not less than four (4) inches, or portion of cage opposite ladder shall be carried to the base. ()

dd. Cages shall not extend less than twenty-seven (27) inches nor more than thirty (30) inches from the center line of the rungs of the ladder. Cage shall not be less than twenty-seven (27) inches in width. The inside shall be clear of projections. Vertical bars shall be located at a maximum spacing of forty (40) degrees around the circumference of the cage; this will give a maximum spacing of approximately nine and one-half (9 1/2) inches, center to center. (See Figure 072.06 K.) ()

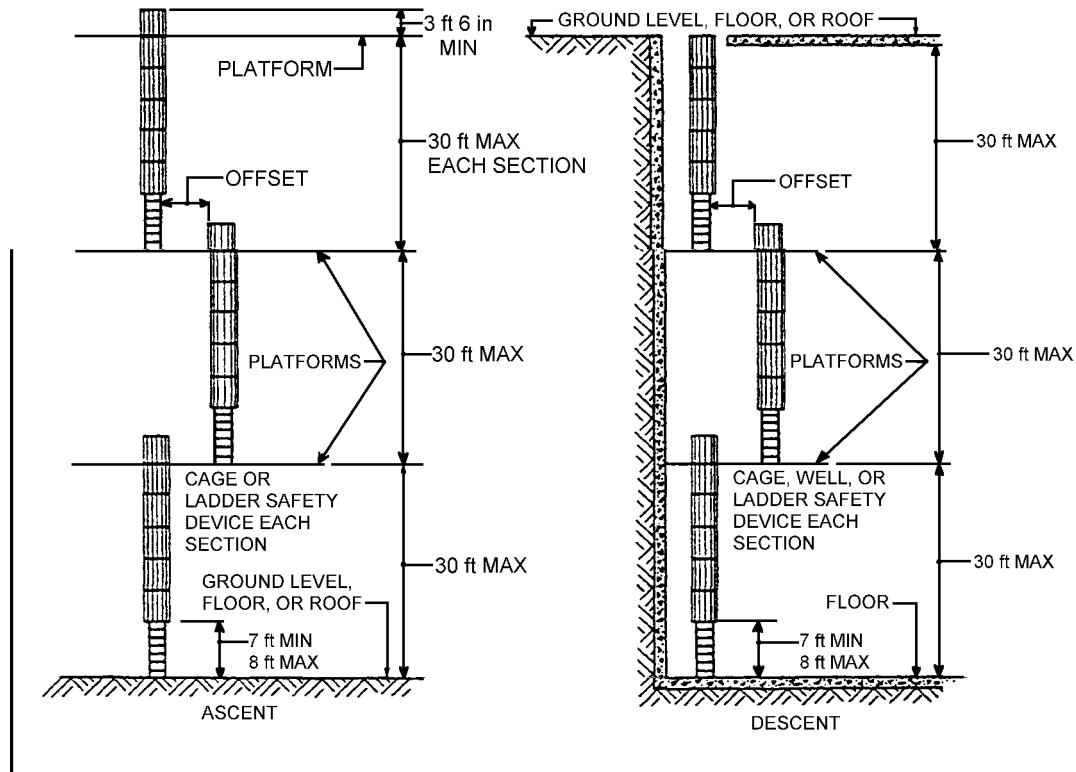
ee. Ladder wells shall have a clear width of at least fifteen (15) inches measured each way from the centerline of the ladder. Smooth walled wells shall be a minimum of twenty-seven (27) inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there shall be a minimum of thirty (30) inches from the centerline of the rungs. (See Figure 072.06 L.) ()

FIGURE 072.06-L



ff. When ladders are used to ascend to heights exceeding twenty (20) feet (except on chimneys), landing platforms shall be provided for each thirty (30) feet of height or fraction thereof, except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each twenty (20) feet of height or fraction thereof. Each ladder section shall be offset from adjacent sections. Where installation conditions (even for a short, unbroken length) require that adjacent sections be offset, landing platforms shall be provided at each offset. ()

FIGURE 072.06-M



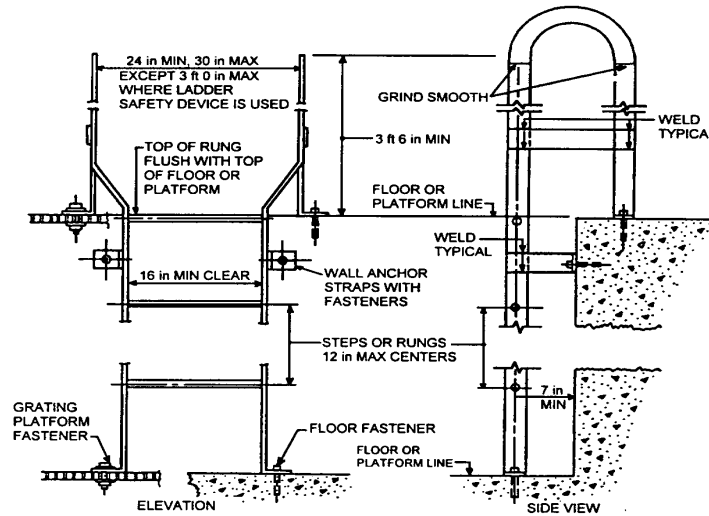
gg. Where a man has to step a distance greater than twelve (12) inches from the centerline of the rung structure or equipment, a landing platform shall be provided. The minimum step across distance shall be seven (7) inches. ()

hh. All landing platforms shall be equipped with standard guardrailing and toeboards, so arranged as to give safe access to the ladder. Platforms shall be not less than twenty-four (24) inches in width and thirty (30) inches in length. ()

ii. One (1) rung of any section of ladder shall be located at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the same rung spacing as used on the ladder shall be used from the landing platform to the first rung below the landing. ()

jj. The side rail of through or side step ladder extensions shall extend three and one-half (3 1/2) feet above parapets and landings. For through ladder extensions, the rungs shall be omitted from the extension and shall have not less than twenty-four (24) inches nor more than thirty (30) inches clearance between rails. For sidestep or offset fixed ladder sections, at landings, the side rails and rungs shall be carried to the next regular rung beyond or above the three and one-half (3 1/2) feet minimum (Figure 072.06 N). ()

FIGURE 072.06-N

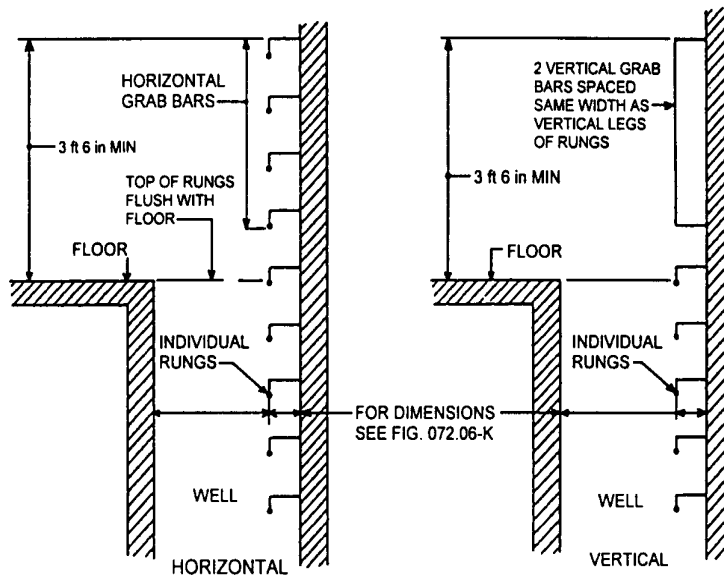


kk. Grab bars shall be spaced by a continuation of the rung spacing when they are located in the horizontal position. Vertical grab bars shall have the same spacing as the ladder side rails. Grab bar diameters shall be the equivalent of the round rung diameters. (See Figure 072.06 O.) ()

ll. Ladder safety devices may be used on tower, water tank, and chimney ladders over twenty (20) feet in unbroken length in lieu of cage protection. No landing platform is required in these cases. All ladder safety devices such as those that incorporate body harness friction brakes, and sliding attachments shall meet the design requirements of the ladders which they serve. ()

mm. The preferred pitch of fixed ladders shall be considered to come in the range of seventy-five (75) degrees and ninety (90) degrees with the horizontal (Figure 072.06 O). ()

FIGURE 072.06-O



nn. Substandard Pitch. Fixed ladders shall be considered as substandard if they are installed within the substandard pitch range of sixty (60) and seventy-five (75) degrees with the horizontal. Substandard fixed ladders are permitted only where it is found necessary to meet conditions of installation. This substandard pitch range shall be considered as a critical range to be avoided, if possible. ()

oo. Ladders having a pitch in excess of ninety (90) degrees with the horizontal are prohibited. ()

073. SAFETY REQUIREMENTS FOR SCAFFOLDING.

01. Scope: ()

a. Scaffolds shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()

b. This section is intended to prescribe rules and establish minimum requirements for the construction, care, and use of common types of scaffolds, mobile work platforms (including ladder stands but not including aerial ladders) and rolling (mobile) scaffolds (towers) in order to ensure safety under normal conditions of usage. ()

02. Definitions Applicable to this Section: ()

a. Bearer is a horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers. ()

b. Boatwain's Chair is a seat supported by slings attached to a suspended rope, designed to accommodate one (1) workman in a sitting position. ()

c. Brace is a tie that holds one (1) scaffold member in a fixed position with respect to another member. ()

- ()
- d. Bricklayer's Square Scaffold is a scaffold composed of framed wood squares which support a platform limited to light and medium duty. ()
- e. Carpenter's Bracket Scaffold is a scaffold consisting of wood or metal brackets supporting a platform. ()
- f. Climbing ladder is a separate ladder with equally spaced rungs usually attached to the scaffold structure for climbing and descending. ()
- g. Coupler is a device for locking together the component parts of a tubular metal scaffold. The material used for the couplers shall be of a structural type, such as a dropped forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited. ()
- h. Crawling Board or "Chicken Ladder" is a plank with cleats spaced and secured at equal intervals, for use by a worker on roofs, not designed to carry any material. ()
- i. Design Working Load is the maximum working load, being the total of all loads including the weight of the person, materials, equipment and platform. ()
- j. Double Pole or Independent Pole Scaffold is a scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing. ()
- k. Equivalent is an alternative design or features, which will provide an equal degree or factor of safety. ()
- l. Float or Ship Scaffold is a scaffold hung from overhang supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two (2) parallel plank bearers at right angles to the span. ()
- m. Guardrail is a rail secured to uprights and erected along the exposed sides and ends of platforms. ()
- n. Handrail. A rail connected to a ladder stand running parallel to the slope and/or top step. ()
- o. Heavy Duty Scaffold is a scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot. ()
- p. Horse Scaffold is a scaffold for light or medium duty, composed of horses supporting a work platform. ()
- q. Interior Hung Scaffold is a scaffold suspended from the ceiling or roof structure. ()
- r. Ladder Jack Scaffold is a light duty scaffold supported by brackets attached to ladders. ()
- s. Ladder Stand is a mobile fixed size self supporting ladder consisting of a wide flat tread ladder in the form of stairs. The assembly may include handrails. ()
- t. Ledger (Stringer) is a horizontal scaffold member which extends from post to post and which supports the putlogs or bearer forming a tie between the posts. ()
- u. Light Duty Scaffold is a scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot. ()
- v. Manually Propelled Mobile Scaffold is a portable rolling scaffold supported by casters. ()

- w. Mason's Adjustable Multiple point Suspension Scaffold is a scaffold having a continuous platform supported by bearers suspended by wire rope from overhead supports, so arranged and operated as to permit the raising or lowering of the platform to desired working position. ()
- x. Maximum Working Load is the total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated. ()
- y. Medium Duty Scaffold is a scaffold designed and constructed to carry a working load not to exceed 50 pounds per square foot. ()
- z. Mid rail is a rail approximately midway between the guardrail and platform, used when required, and secured to the uprights erected along the exposed sides and ends of platforms. ()
- aa. Mobile means to be manually propelled. ()
- bb. Mobile Scaffold (Tower). A light, medium, or heavy duty scaffold mounted on casters or wheels. ()
- cc. Mobile Work Platform is generally a fixed work level one (1) frame high on casters or wheels with bracing diagonally from platform to vertical frame. ()
- dd. Needle Beam Scaffold is a light duty scaffold consisting of needle beams supporting a platform. ()
- ee. Outrigger Scaffold is a scaffold supported by outriggers or thrust outs projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside of such a building or structure. ()
- ff. Putlog is a scaffold member upon which the platform rests. ()
- gg. Roofing Bracket is a bracket used in sloped roof construction, having provisions for fastening to the roof or supported by ropes fastened over the ridge and secured to some suitable object. ()
- hh. Runner is the lengthwise horizontal bracing or bearing members or both. ()
- ii. Scaffold is any temporary elevated platform and its supporting structure used for supporting workmen or materials or both. ()
- jj. Single Point Adjustable Suspension Scaffold is a manually or power operated unit designed for light duty use, supported by a single wire rope from an overhead support so arranged and operated as to permit the raising or lowering of the platform to desired working positions. ()
- kk. Single Pole Scaffold is a platform resting on putlogs or crossbeams, the outside ends of which are supported on ledgers secured to a single row of posts or uprights and the inner ends of which are supported on or in a wall. ()
- ll. Stone Setters' Adjustable Multiple point Suspension Scaffold is a swinging type scaffold having a platform supported by hangers suspended at four (4) points so as to permit the raising or lowering of the platform to the desired working position by the use of hoisting machines. ()
- mm. Toeboard is a barrier secured along the sides and ends of a platform, to guard against the falling of material. ()
- nn. Tube and Coupler Scaffold is an assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members. ()

oo. Tubular Welded Frame Scaffold is a sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections which consist of posts and horizontal bearer with intermediate members. Panels or frames shall be braced with diagonal or cross braces. ()

pp. Tubular Welded Sectional Folding Scaffold is a sectional folding metal scaffold either of ladder frame or inside stairway design, substantially built of prefabricated welded sections, which consist of end frames, platform frame, inside inclined stairway form and braces, or hinged connected diagonal and horizontal braces, capable of being folded into a flat package when the scaffold is not in use. ()

qq. Two (2) point Suspension Scaffold (Swinging Scaffold) is a scaffold, the platform of which is supported by hangers (stirrups) at two (2) points, suspended from overhead supports so as to permit the raising or lowering of the platform to the desired working position by tackle or hoisting machines. ()

rr. Window Jack Scaffold is a scaffold, the platform of which is supported by a bracket or jack which projects through a wind opening. ()

ss. Work Level is the elevated platform used for supporting workmen and their materials, comprising the necessary vertical, horizontal, and diagonal braces, guardrails, and ladder for access to the work platform. ()

tt. Working Load is the load imposed by men, materials, and equipment. ()

03. General Requirements: ()

a. Scaffolds shall be furnished and erected in accordance with this section for persons engaged in work that cannot be done safely from the ground or from solid construction, except that ladders used for such work shall conform to IDAPA 17.10.10.072. ()

b. The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum working load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks. ()

c. Guardrails and toeboards shall be installed on all open sides and ends of platforms more than eight (8) feet above the ground or floor except: ()

d. Scaffolding wholly within the interior of a building and covering the entire floor area of any room therein and not having any side exposed to a hoistway, elevator shaft, stairwell, or other floor openings; and ()

e. Needle beam scaffolds shall have all unattached/unsecured tools, bolts, and nuts kept in suitable containers. ()

f. Guardrails shall be installed at all open sides on all scaffolds more than 4 feet above the ground or floor. ()

g. Guardrails should all be two (2) x four (4) inches or equivalent, installed no less than 36 inches or not more than forty-two (42) inches high, with a midrail, when required, or one (1) x four (4) inch nominal lumber or equivalent. Supports shall be at intervals not to exceed ten (10) feet. ()

h. Toeboards shall be a minimum of four (4) inches nominal lumber in height. ()

i. Scaffolds and their components shall be capable of supporting without failure at least four (4) times the maximum working load. ()

j. Scaffolds and other devices mentioned or described in this section shall be maintained in safe condition. Scaffolds shall not be altered or moved horizontally while they are in use or occupied. ()

k. Any scaffold damaged or weakened from any cause shall be immediately repaired and shall not be used until repairs have been completed. ()

- l. Scaffolds shall not be loaded in excess of the working load for which they are intended. ()
- m. All load carrying timber members of scaffold framing shall be a minimum of one thousand five hundred (1,500) pounds per square foot (stress grade) construction grade lumber. All dimensions are nominal sizes. (Note: where nominal sizes of lumber are used in place of rough sizes, the nominal size lumber shall be such as to provide equivalent strength to that specified in Tables 073.03 A, 073.03 B, 073.03 C, 073.03 D, 073.03 E, and 073.03 F. ()

| TABLE 073.03 A | | |
|--|---|----------------------------------|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS LIGHT DUTY | | |
| | Maximum height of scaffold | |
| | 20 feet | 60 feet |
| Uniformly distributed load | Not to exceed 25 pounds per square foot | |
| Poles or uprights | 2 by 4 in. | 4 by 4 in. |
| Pole spacing (longitudinal) | 6 ft. 0 in. | 10 ft. 0 in. |
| Maximum width of scaffold | 5 ft. 0 in. | 5 ft. 0 in. |
| Bearers or putlogs to 3 ft. 0 in. width | 2 by 4 in. | 2 by 4 in. |
| Bearers or putlogs to 5 ft. 0 in. width | 2 by 6 in. or 3 by 4 in. | 2 by 6 in. or 3 by 4 in. (rough) |
| Ledgers | 1 by 4 in. | 1 1/4 by 9 in. |
| Planking | 1 1/4 by 9 in. (rough) | 2 by 9 in. |
| Vertical spacing of horizontal members | 7 ft. 0 in. | 7 ft. 0 in. |
| Bracing, horizontal and diagonal | 1 by 4 in. | 1 by 4 in. |
| Tie ins | 1 by 4 in. | 1 by 4 in. |
| Toeboards | 4 in. high (minimum) | 4 in. high (minimum) |
| Guardrail | 2 by 4 in. | 2 by 4 in. |
| All members except planking are used on edge. | | |

| TABLE 073.03 B | |
|---|---|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS MEDIUM DUTY | |
| Uniformly distributed load | Not to exceed 50 pounds per square foot |
| Maximum height of scaffold | 60 ft. |

| TABLE 073.03 B | |
|---|------------------------------|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS MEDIUM DUTY | |
| Poles or uprights | 4 by 4 in. |
| Pole spacing (longitudinal) | 8 ft. 0 in. |
| Maximum width of scaffold | 5 ft. 0 in. |
| Bearers or putlogs | 2 by 9 in. or 3 by 4 in. |
| Spacing of bearers or putlogs | 8 ft. 0 in. |
| Ledgers | 2 by 9 in. |
| Vertical spacing of horizontal members | 9 ft. 0 in. |
| Bracing, horizontal | 1 by 6 in. or 1 1/4 by 4 in. |
| Bracing, diagonal | 1 by 4 in. |
| Tie ins | 1 by 4 in. |
| Planking | 2 by 9 in. |
| Toeboards | 4 in. high (minimum) |
| Guardrail | 2 by 4 in. |
| All members except planking are used on edge. | |

| TABLE 073.03 C | |
|--|---|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS HEAVY DUTY | |
| Uniformly distributed load | Not to exceed 75 pounds per square foot |
| Maximum height of scaffold | 60 ft. |
| Poles or uprights | 4 by 4 in. |
| Pole spacing (longitudinal) | 6 ft. 0 in. |
| Maximum width of scaffold | 5 ft. 0 in. |
| Bearers or putlogs | 2 by 9 in. or 3 by 5 in. (rough) |
| Spacing of bearers or putlogs | 6 ft. 0 in. |
| Ledgers | 2 by 9 in. |
| Vertical spacing of horizontal members | 6 ft. 6 in. |
| Bracing, horizontal and diagonal | 2 by 4 in. |
| Tie ins | 1 by 4 in. |
| Planking | 2 by 9 in. |
| Toeboards | 4 in. high (minimum) |

| TABLE 073.03 C | |
|--|------------|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS HEAVY DUTY | |
| Guardrail | 2 by 4 in. |
| All members except planking are used on edge. | |

| TABLE 073.03 D | | |
|---|---|----------------------------------|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS LIGHT DUTY | | |
| | Maximum height of scaffold | |
| | 20 feet | 60 feet |
| Uniformly distributed load | Not to exceed 25 pounds per square foot | |
| Poles or uprights | 2 by 4 in. | 4 by 4 in. |
| Pole spacing (longitudinal) | 6 ft. 0 in. | 10 ft. 0 in. |
| Pole spacing (transverse) | 6 ft. 0 in. | 10 ft. 0 in. |
| Ledgers | 1 1/4 by 4 in. | 1 1/4 by 9 in. |
| Bearers to 3 ft. 0 in. span | 2 by 4 in. | 2 by 4 in. |
| Bearers to 10 ft. 0 in. span | 2 by 6 in. or 3 by 4 in. | 2 by 9 in. (rough) or 3 by 8 in. |
| Planking | 1 1/4 by 9 in. | 2 by 9 in. |
| Vertical spacing of horizontal members | 7 ft. 0 in. | 7 ft. 0 in. |
| Bracing, horizontal and diagonal | 1 by 4 in. | 1 by 4 in. |
| Tie ins | 1 by 4 in. | 1 by 4 in. |
| Toeboards | 4 in. high | 4 in. high (minimum) |
| Guardrail | 2 by 4 in. | 2 by 4 in. |
| All members except planking are used on edge. | | |

| TABLE 073.03 E | |
|--|---|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS MEDIUM DUTY | |
| Uniformly distributed load | Not to exceed 50 pounds per square foot |
| Maximum height of scaffold | 60 ft. |

| TABLE 073.03 E | |
|--|-----------------------------------|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS MEDIUM DUTY | |
| Poles or uprights | 4 by 4 in. |
| Pole spacing (longitudinal) | 8 ft. 0 in. |
| Pole spacing (transverse) | 8 ft. 0 in. |
| Ledgers | 2 by 9 in. |
| Vertical spacing of horizontal members | 6 ft. 0 in. |
| Spacing of bearers | 8 ft. 0 in. |
| Bearers | 2 by 9 in. (rough) or 2 by 10 in. |
| Bracing, horizontal | 1 by 6 in. or 1 1/4 by 4 in. |
| Bracing, diagonal | 1 by 4 in. |
| Tie ins | 1 by 4 in. |
| Planking | 2 by 9 in. |
| Toeboards | 4 in. high (minimum) |
| Guardrail | 2 by 4 in. |
| All members except planking are used on edge. | |

| TABLE 073.03 F | |
|---|---|
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS HEAVY DUTY | |
| Uniformly distributed load | Not to exceed 75 pounds per square foot |
| Maximum height of scaffold | 60 ft. |
| Poles or uprights | 4 by 4 in. |
| Pole spacing (longitudinal) | 6 ft. 0 in. |
| Pole spacing (transverse) | 8 ft. 0 in. |
| Ledgers | 2 by 9 in. |
| Vertical spacing of horizontal members | 4 ft. 6 in. |
| Bearers | 2 by 9 in. (rough) |
| Bracing, horizontal and diagonal | 2 by 4 in. |
| Tie ins | 1 by 4 in. |
| Planking | 2 by 9 in. |
| Toeboards | 4 in. high (minimum) |
| Guardrail | 2 by 4 in. |

| |
|---|
| TABLE 073.03 F |
| MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS HEAVY DUTY |
| All members except planking are used on edge. |

n. All planking shall be Scaffold grade as recognized by grading rules for the species of wood used. The maximum permissible spans for two (2) X nine (9) inch or wider planks are shown in Table 073.03 G. ()

| | | | | | |
|---|--|----|----|---------------------------------|----|
| TABLE 073.03 G | | | | | |
| | Material | | | | |
| | Full thickness undressed lumber | | | Nominal thickness lumber | |
| Working load (p.s.f.) | 25 | 50 | 75 | 25 | 50 |
| Permissible span (ft.) | 10 | 8 | 6 | 8 | 9 |
| The maximum permissible span for 1 1/4 x 9 inch or wider plank of full thickness is 4 feet with medium loading of 50 p.s.f. | | | | | |

o. Nails or bolts used in the construction of scaffolds shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the scaffold. Nails shall not be subjected to a straight pull and shall be driven full length. ()

p. All planking or platforms shall be overlapped (minimum twelve (12) inches) or secured from movement. ()

q. An access ladder or equivalent safe access shall be provided. ()

r. Scaffold planks shall extend over their end supports not less than 6 inches nor more than 18 inches. ()

s. The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement. ()

t. Materials being hoisted onto a scaffold shall have a tag line. ()

u. Overhead protection shall be provided for employees working on a scaffold when they are exposed to overhead hazards. ()

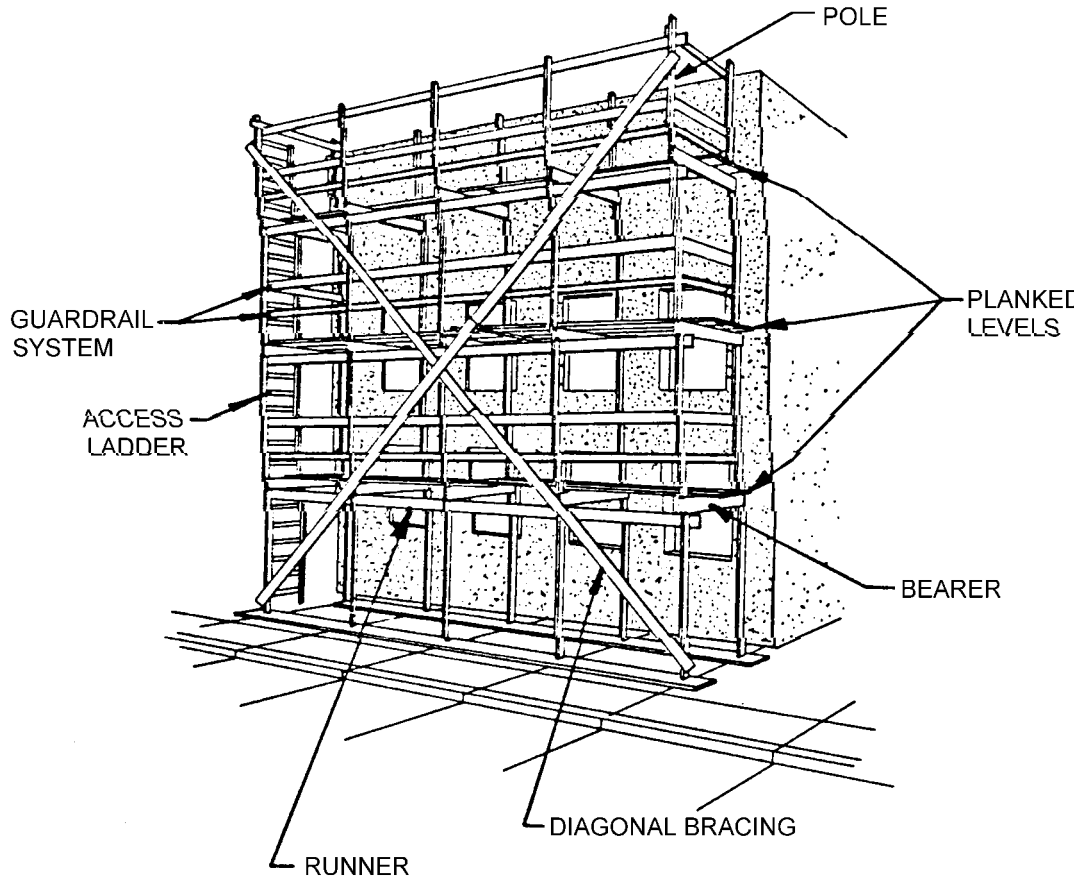
v. Scaffolds shall be provided with a screen between the toeboard and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard Wire one-half (1/2) inch mesh or the equivalent, where persons are required to work or pass under the scaffolds. ()

w. Employees shall not be required to work on scaffolds when there is a hazard from high winds. ()

x. Employees shall not be required to work on scaffolds which are covered with ice or snow, unless all ice or snow is removed and the planking is sanded to prevent slipping. ()

- y. Tools, materials, and debris shall not be allowed to accumulate in quantities to cause a hazard. ()
- z. Only treated or protected fiber rope shall be used for or near any work involving the use of corrosive substances or chemicals. ()
- aa. Wire or fiber rope used for scaffolding suspension shall be capable of supporting at least six (6) times the working load. ()
- bb. When acid solutions are used for cleaning buildings over fifty (50) feet in height, wire rope supported scaffolds shall be used. ()
- cc. The use of shore scaffolds or lean to scaffolds is prohibited. ()
- dd. Lumber sizes, when used in this section, refer to nominal sizes except where otherwise stated. ()
- ee. Scaffolds shall be secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means. Window cleaners anchor bolts shall not be used. ()
- ff. Special precautions shall be taken to protect scaffold members, including any wire or fiber rope, when using a heat producing process. ()
- gg. All hooks on blocks used for raising scaffolding shall be provided with a safety latch or be "moused at the throat" to prevent the hook from becoming dislodged. ()
- hh. Scaffolds shall not be loaded in excess of the working load for which they are intended. ()
- 04. Wood Pole Scaffolds: (see Figure 073.04 A) ()

FIGURE 073.04-A



- a. Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the poles over a sufficient area to prevent settlement. All poles shall be set plumb. ()
- b. Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two (2) adjacent sides and shall not be less than four (4) feet zero (0) inches in length, overlapping the abutted ends equally, and have the same width and not less than the cross sectional area of the pole. Splice plates of other materials of equivalent strength may be used. ()
- c. Independent pole scaffolds shall be set as near to the wall of the building as practicable. ()
- d. All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds twenty-five (25) feet, the scaffold shall be secured at intervals not greater than twenty-five (25) feet vertically and horizontally. ()
- e. Putlogs or bearers shall be set with their greater dimensions vertical, long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support. ()
- f. Every wooden putlog on single pole scaffolds shall be reinforced with a three sixteenths by two (3/16 x 2) inch steel strip or equivalent secured to its lower edge throughout its entire length. ()
- g. Ledgers shall be long enough to extend over two (2) pole spaces. Ledgers shall not be spliced

between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger. ()

h. Diagonal bracing shall be provided to prevent the poles from moving in a directional parallel with the wall of the building, or from buckling. ()

i. Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be crossed braced. ()

j. Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles. ()

k. Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall. ()

l. Where planking is lapped, each plank shall lap its end supports at least twelve (12) inches. Where the ends of planks abut each other to form a flush floor, the but joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgment of planks due to deflection, and the ends shall be nailed or cleated to prevent their dislodgment. ()

m. When a scaffold turns a corner, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at right angles shall be laid so as to extend over and rest on the first layer of planking. ()

n. When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs or bearers have been set in place, ready to receive the platform planks. ()

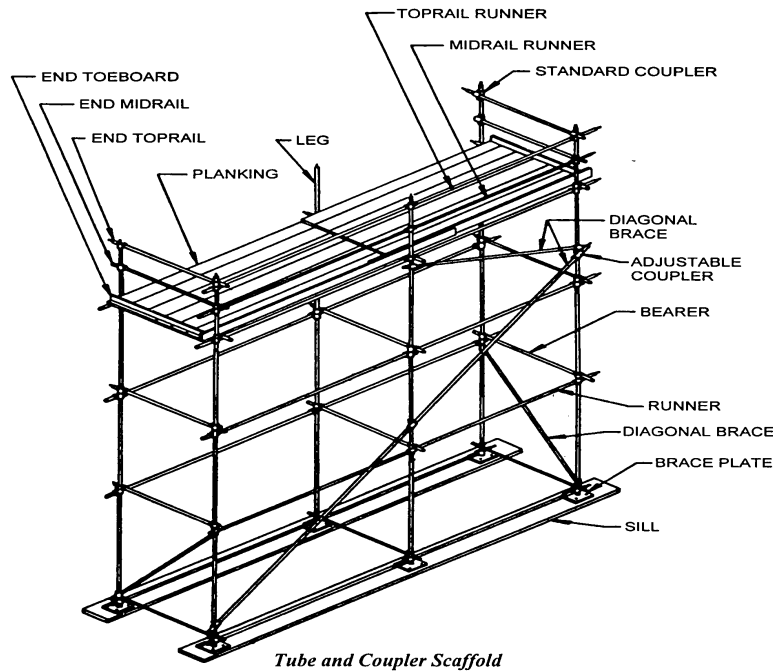
o. Guardrails not less than two (2) x four (4) inches or the equivalent and not less than forty-two (42) inches high, with a mid rail of one (1) x four (4) inch lumber or equivalent, and toeboards, shall be installed on all open sides on all scaffolds more than four (4) feet above the ground or floor. Toeboards shall be a minimum of four (4) inches in height. Wire mesh shall be installed in accordance with this section. ()

p. All wood pole scaffolds sixty (60) feet or less in height shall be constructed and erected in accordance with Tables 073.03 A, 073.03 B, 073.03 C, 073.03 D, 073.03 E, and 073.03 F of this section. If they are over sixty (60) feet in height they shall be designed by an Idaho licensed engineer and constructed and erected in accordance with such design. A copy of the drawings and specifications shall be made available to the employer, for inspection purposes, and to representatives of the Department. ()

q. Wood pole scaffolds shall not be erected beyond the reach of effective firefighting apparatus. ()

05. Tube and Coupler Scaffolds: (See Figure 073.05 A) ()

FIGURE 073.05-A



a. A light duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal two (2) inch O.D. steel tubing. The posts shall be spaced no more than six (6) feet apart by two (10) feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. ()

b. A medium duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal two (2) inch O.D. steel tubing. Posts spaced not more than six (6) feet apart by eight (8) feet along the length of the scaffold shall have bearers of nominal two and one-half (2 1/2) inch O.D. steel tubing. Posts spaced not more than five (5) feet apart by eight (8) feet along the length of the scaffold shall have bearers of nominal two (2) inch O.D. steel tubing. Other structural metals when used must be designed to carry an equivalent load. ()

c. A heavy duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal two (2) inch O.D. steel tubing, with the posts spaced not more than six (6) feet by six (6) feet six (6) inches along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load. ()

d. Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables 073.05 A, 073.05 B, and 073.05 C. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables 073.05 A, 073.05 B, and 073.05 C shall be designed by an Idaho licensed engineer and constructed and erected in according with such design. A copy of the drawings and specifications shall be made available to the employer, for inspection purposes, and to representatives of the Department. ()

| | | |
|--|------------------------|--|
| TABLE 073.05 A | | |
| TUBE AND COUPLER SCAFFOLDS LIGHT DUTY | | |
| Uniformly distributed load | Not to exceed 25 p.s.f | |

| TABLE 073.05 A | | |
|--|---------------------------|----------------|
| TUBE AND COUPLER SCAFFOLDS LIGHT DUTY | | |
| Post spacing (longitudinal) | 10 ft. 0 in | |
| Post spacing (transverse) | 6 ft. 0 in. | |
| | | |
| Working levels | Additional planked levels | Maximum height |
| 1 | 8 | 125 ft. |
| 2 | 4 | 125 ft. |
| 3 | 0 | 91 ft. 0 in |

| TABLE 073.05 B | | |
|---|--------------------------|----------------|
| TUBE AND COUPLER SCAFFOLDS MEDIUM DUTY | | |
| Uniformly distributed loa | Not to exceed 50 p.s.f | |
| Post spacing (longitudinal) | 8 ft. 0 in. | |
| Post spacing (transverse) | 6 ft. 0 in. | |
| | | |
| Working levels | Additional planked level | Maximum height |
| 1 | 6 | 125 ft. |
| 2 | 0 | 78 ft. 0 in. |

| TABLE 073.05 C | | |
|--|---------------------------|----------------|
| TUBE AND COUPLER SCAFFOLDS HEAVY DUTY | | |
| Uniformly distributed load | Not to exceed 75 p.s.f. | |
| Post spacing (longitudinal) | 6 ft. 6 in. | |
| Post spacing (transverse) | 6 ft. 0 in. | |
| | | |
| Working levels | Additional planked levels | Maximum height |
| 1 | 6 | 125 ft. |

e. All tube and coupler scaffolds shall be constructed and erected to support four (4) times the maximum working loads as set forth in Tables 073.05 A, 073.05 B, and 073.05 C or as designed by an Idaho licensed engineer and constructed and erected in according with such design. A copy of the drawings and specifications shall

- be made available to the employer, for inspection purposes, and to representatives of the Department. ()
- f. All tube and coupler scaffolds shall be erected by qualified and experienced personnel. ()
 - g. Posts shall be accurately spaced, erected on suitable bases, maintained plumb. ()
 - h. Runners shall be erected along the length of the scaffold located on both the inside and the outside posts at even height. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than six (6) feet six (6) inches on centers. ()
 - i. Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible. ()
 - j. Bearers shall be at least four (4) inches but not more than twelve (12) inches longer than the post spacing or runner spacing. Bearers may be cantilevered for use as brackets to carry not more than two (2) planks. ()
 - k. Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners. ()
 - l. Longitudinal diagonal bracing shall be installed at approximately a forty-five (45) degree angle from near the base of the first outer post upwards to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners. ()
 - m. The entire scaffolding shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and twenty-six (26) feet vertically. ()
 - n. Guardrails not less than two (2) x four (4) inches or the equivalent and not less than forty-two (42) inches high, with a mid rail of one (1) x four (4) inch lumber or equivalent, and toeboards, shall be installed on all open sides on all scaffolds more than four (4) feet above the ground or floor. Toeboards shall be a minimum of four (4) inches in height. Wire mesh shall be installed in accordance with this section. ()
06. Tubular Welded Frame Scaffolds: (See Figure 073.06 A) ()

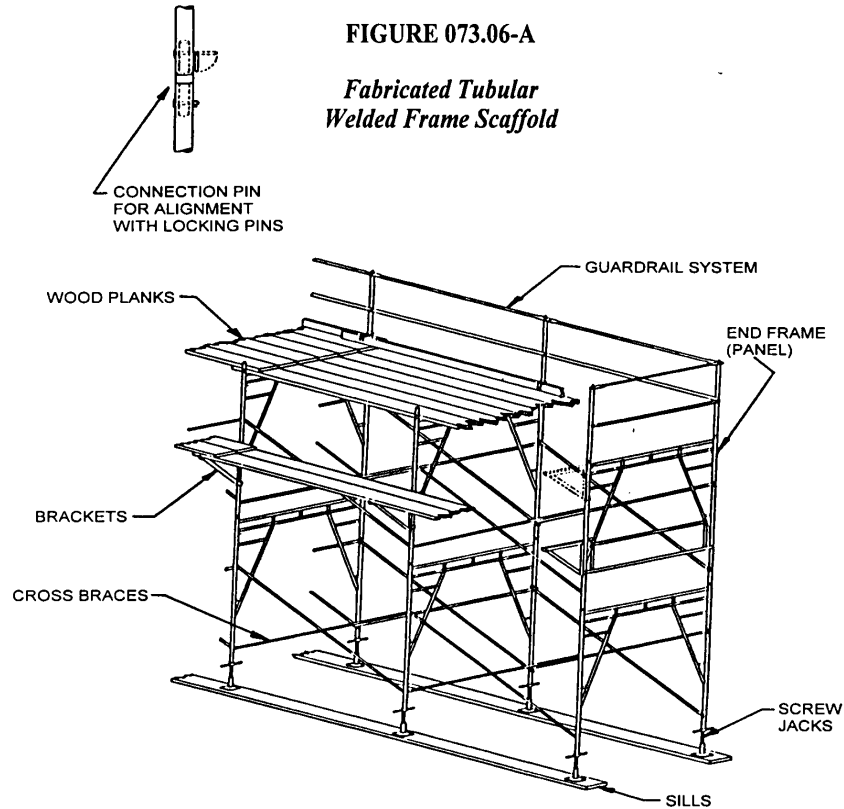


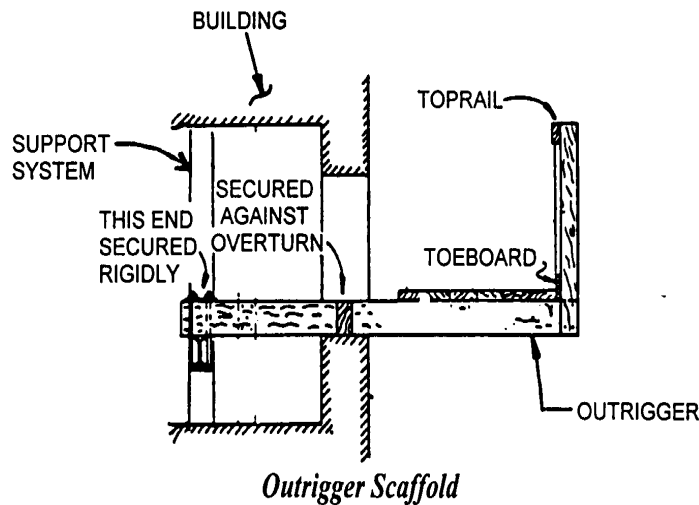
FIGURE 073.06-A

*Fabricated Tubular
Welded Frame Scaffold*

- a. Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed and proved to safely support four (4) times the maximum working load. ()
- b. Spacing of panels or frames shall be consistent with the loads imposed. ()
- c. Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and aline vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure. ()
- d. Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum working load. ()
- e. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs. ()
- f. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means. ()
- g. Guardrails not less than two (2) x four (4) inches or the equivalent and not less than forty-two (42) inches high, with a mid rail of one (1) x four (4) inch lumber or equivalent, and toeboards, shall be installed on all open sides on all scaffolds more than four (4) feet above the ground or floor. Toeboards shall be a minimum of four

- (4) inches in height. Wire mesh shall be installed in accordance with this section. ()
- h. All tubular metal scaffolds shall be constructed and erected to support four (4) times the maximum working loads. ()
- i. To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed thirty (30) feet horizontally and twenty-six (26) feet vertically. ()
- j. Maximum permissible spans of planking shall be in conformity with Table 073.03 G. ()
- k. Drawings and specifications for all frame scaffolds over one hundred and twenty-five (125) feet in height above the base plates shall be designed by a licensed Idaho engineer and copies made available to the employer, for inspection purposes, and to representatives of the Department. ()
- l. All tubular welded frame scaffolds shall be erected by qualified and experienced personnel. ()
- m. Frames and accessories shall be maintained in good repair and every defect, unsafe condition, or noncompliance with section shall be immediately corrected before further use of the scaffold. Any broken, bent, excessively rusted, altered, or otherwise structurally damaged frames or accessories shall not be used. ()
- n. Periodic inspections shall be made of all welded frames and accessories, and any maintenance, including painting, or minor corrections authorized by the manufacture, shall be made before further use. ()
07. Outrigger Scaffolds: (See Figure 073.07 A) ()

FIGURE 073.07-A



- a. Outrigger beams shall extend not more than six (6) feet beyond the face of the building. The inboard end of the outrigger beams, measured from the fulcrum point to the extreme point of support, shall be not less than one and one-half (1 1/2) times the outboard end in length. The beams shall rest on edge, the sides shall be plumb, and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least six (6) inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping. ()

b. The inboard ends of outrigger beams shall be securely supported either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary. The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement. ()

c. Unless outrigger scaffolds are designed by a licensed Idaho engineer, they shall be constructed and erected in accordance with Table 073.03 G. Outrigger scaffolds designed by a licensed Idaho engineer shall be constructed and erected in accordance with such design. A copy of the detailed drawings and specifications showing the sizes and spacing of members shall be kept on the job. ()

d. Planking shall be laid tight and shall extend to within three (3) inches of the building wall. Planking shall be nailed or bolted to outriggers. ()

e. Where there is danger of material falling from the scaffold, a wire mesh or other enclosure shall be provided between the guardrail and the toeboard. ()

f. Where additional working levels are required to be supported by outrigger method, the plans and specifications of the outrigger and scaffolding structure shall be designed by a licensed Idaho engineer. ()

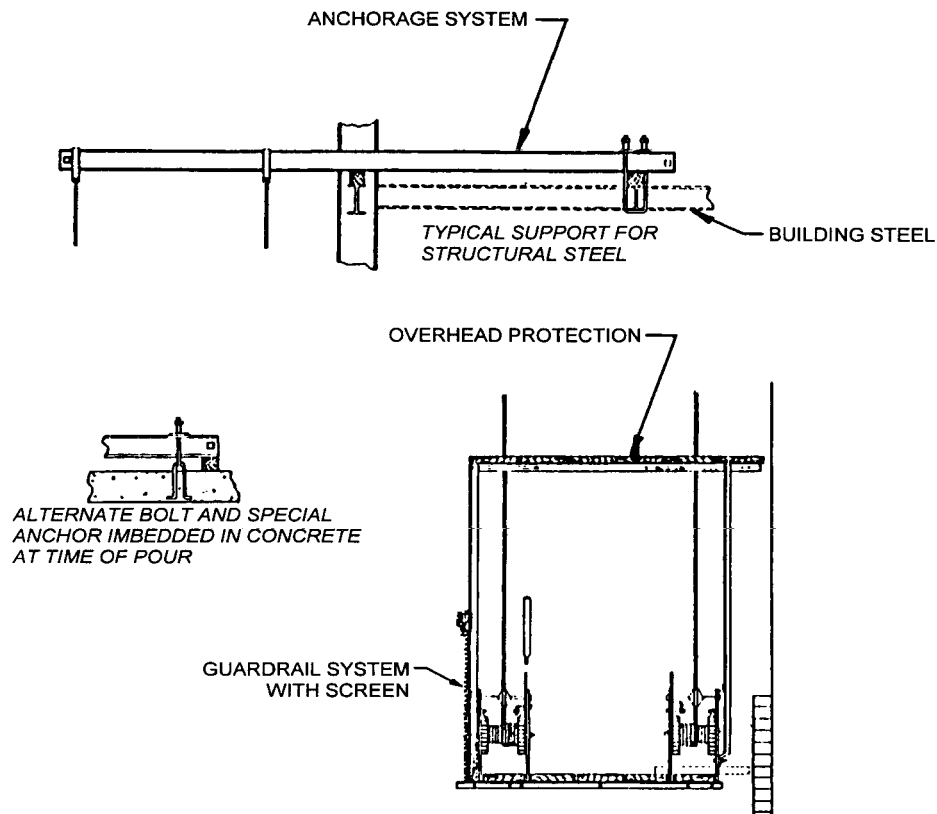
08. Masons' Adjustable Multiple Point Suspension Scaffolds: ()

a. The scaffold shall be capable of sustaining a working load of fifty (50) pounds per square foot and shall not be loaded in excess of that figure. ()

b. The scaffold shall be provided with hoisting machines that meet the requirements of a nationally recognized testing laboratory. ()

c. The platform shall be supported by wire ropes in conformity with IDAPA 17.10.10.073.03.aa., suspended from overhead outrigger beams, see Figure 073.08 A. ()

FIGURE 073.08-A



- d. The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure, see Figure 073.08 A. ()
- e. Each outrigger beam shall be equivalent in strength to at least a standard seven (7) inch, fifteen point three (15.3) pound steel I beam, at least fifteen (15) feet long, and shall not project more than six (6) feet six (6) inches beyond the bearing point. ()
- f. Where the overhang exceeds six (6) feet six (6) inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed in accordance with approved designs and instructions. ()
- g. If channel iron outrigger beams are used in place of I beams, they shall be securely fastened together with the flanges turned out. ()
- h. All outrigger beams shall be set and maintained with their webs in the vertical position. ()
- i. A stop bolt shall be placed at each end of every outrigger beam. ()
- j. The outrigger beam shall rest on suitable wood bearing blocks, see Figure 073.09 A. ()
- k. All parts of the scaffold such as bolts, nuts, fittings, clamps, wire rope, and outrigger beams and their fastenings, shall be maintained on sound and good working condition and shall be inspected before each installation and periodically thereafter. ()
- l. The free end of the suspension wire ropes shall be equipped with proper size thimbles and be

secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four (4) turns of rope shall at all times remain on the drum. ()

m. Where a single outrigger beam is used, the steel shackles or cleaves with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums. ()

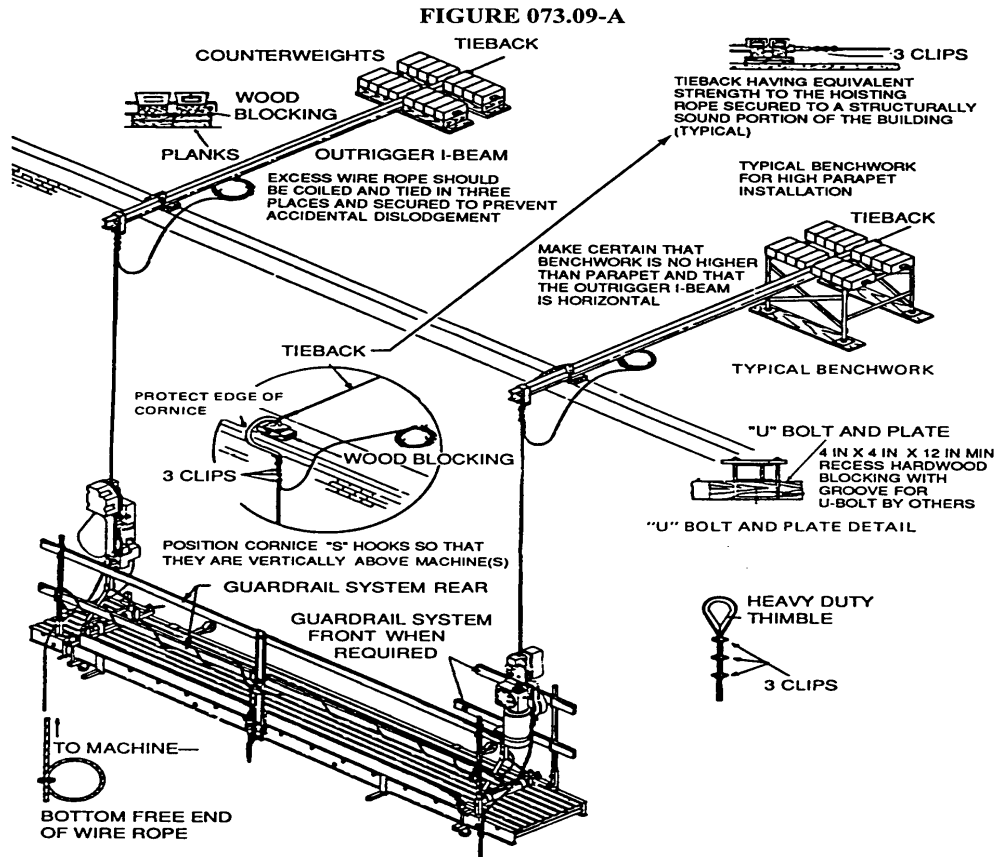
n. The scaffold platform shall be equivalent in strength to at least two (2) inch planking. For maximum planking spans see Table 073.03 G. ()

o. Guardrails not less than two (2) x four (4) inches or the equivalent and not less than forty-two (42) inches high, with a mid rail of one (1) x four (4) inch lumber or equivalent, and toeboards, shall be installed on all open sides on all scaffolds more than four (4) feet above the ground or floor. Toeboards shall be a minimum of four (4) inches in height. Wire mesh shall be installed in accordance with this section. ()

p. Overhead protection shall be provided on the scaffold, not more than nine (9) feet above the platform, consisting of two (2) inch planking or material of equivalent strength laid tight, when men are at work on the scaffold and an overhead hazard exists, see Figure 073.08 A. ()

q. Each scaffold shall be installed or relocated in accordance with designs and instructions, of a licensed Idaho engineer, and supervised by a qualified, designated person. ()

09. Two (2) Point Suspension Scaffolds (Swinging Scaffolds): (See Figure 073.09 A). ()



Two-Point Suspension Scaffold with Powered Traction Hoists

- a. Two (2) point suspension scaffold platforms shall be not less than twenty (20) inches and no more than thirty-six (36) inches wide overall. The platform shall be securely fastened to the hangers by U bolts or by other equivalent means. ()
- b. The hangers of two (2) point suspension scaffolds shall be made of wrought iron, mild steel, or other equivalent material having a cross sectional are capable of sustaining four (4) times the maximum working load, and shall be designated with a support for guardrail, intermediate rail, and toeboard. ()
- c. When hoisting machines are used on two (2) point suspension scaffolds, such machines shall be of a design tested and approved by a nationally recognized testing laboratory. ()
- d. The roof irons or hooks shall be of wrought iron, mild steel, or other equivalent material of proper size and design, securely installed and anchored. Tie backs of three-fourths (3/4) inch manila rope or the equivalent shall serve as a secondary means of anchorage, installed at right angles to the face of the building whenever possible and secured to a structurally sound portion of the building. ()
- e. Guardrails not less than two (2) x four (4) inches or the equivalent and not less than forty-two (42) inches high, with a mid rail of one (1) x four (4) inch lumber or equivalent, and toeboards, shall be installed on all open sides on all scaffolds more than four (4) feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with this section. ()

f. Two (2) point suspension scaffolds shall be suspended by wire or fiber ropes. Wire and fiber ropes shall conform to IDAPA 17.10.10.073.03.aa. ()

g. The blocks for fiber ropes shall be of standard six (6) inch size, consisting of at least one (1) double and one(1) single block. The sheaves of all blocks shall fit the size of rope used. ()

h. All wire ropes, fiber ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use. ()

i. On suspension scaffolds designed for a working load of five hundred (500) pounds no more than two (2) men shall be permitted to work at one time. On suspension scaffolds and a working load of seven hundred and fifty (750) pounds, no more than three (3) men shall be permitted to work at one time. Each worker shall be protected by a fall protection system. The lifeline shall be securely attached to substantial members of the structure (not the scaffold), or to securely rigged lines, which will safely suspend the worker in case of fall. ()

j. Where acid solutions are used, fiber ropes are not permitted unless acid proof. ()

k. Two (2) point suspension scaffolds shall be securely lashed to the building or structure to prevent them from swaying. Window cleaners' anchors shall not be used for this purpose. ()

l. The platform of every two (2) point suspension scaffold shall be one (1) of the following types: The side stringer of ladder type platforms shall be clear straight grained spruce or materials of equivalent strength and durability. The rungs shall be of straight grained oak, ash, or hickory, at least one and one-eighth (1 1/8) inch in diameter, with seven-eighths (7/8) inch tenons mortised into the side stringers at least seven-eighths (7/8) inch. The stringers shall be tied together with tie rods not less than one-fourth (1/4) inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighths (5/8) inch apart at the side rails where the space may be one (1) inch. Ladder type platforms shall be constructed in accordance with Table 073.09 A.; Plank type platforms shall be composed of not less than nominal two (2) x eight (8) inch unspliced planks, properly cleated together on the underside starting six (6) inches from each end; intervals in between shall not exceed four (4) feet. The plank type platform shall not extend beyond the hangers more than eighteen (18) inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank type platforms shall not exceed ten (10) feet.; Beam platforms shall have side stringers of lumber not less than two (2) x six (6) inches set on edge. The span between hangers shall not exceed twelve (12) feet when beam platforms are used. The flooring shall be supported on two (2) inch and six (6) inch crossbeams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than four (4) feet, securely nailed in place. The flooring shall be of one (1) x six (6) inch material properly nailed. Floorboards shall not be spaced more than one-half (1/2) inch apart. ()

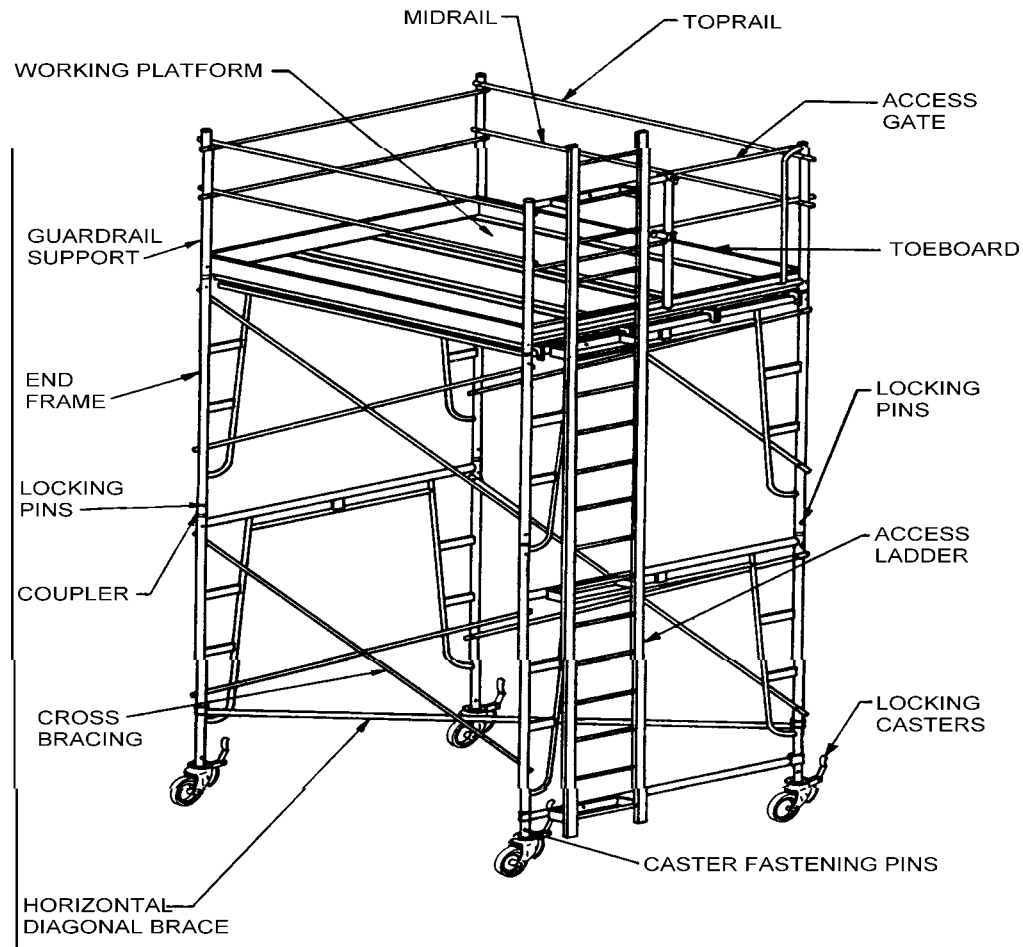
| TABLE 073.09 A | | | | | |
|---|----------------------------------|--------------------|--------------------|--------------------|--------------------|
| SCHEDULE FOR LADDER TYPE PLATFORMS | | | | | |
| | Length of platform (feet) | | | | |
| | 12 | 14 & 16 | 18 & 20 | 22 & 24 | 28 & 30 |
| Side stringers, minimum cross section (finished sizes): | | | | | |
| At ends (in.) | 1 3/4 x 2 3/4 | 1 3/4 x 2 3/4 | 1 3/4 x 3 | 1 3/4 x 3 | 1 3/4 x 3 1/2 |
| At middle (in.) | 1 3/4 x 3 3/4 | 1 3/4 x 3 3/4 | 1 3/4 x 4 | 1 3/4 x 4 1/4 | 1 3/4 x 5 |
| Reinforcing strip (minimum) ¹ | | | | | |
| Rungs ² | | | | | |

| TABLE 073.09 A | | | | | |
|---|----------------------------------|--------------------|--------------------|--------------------|--------------------|
| SCHEDULE FOR LADDER TYPE PLATFORMS | | | | | |
| | Length of platform (feet) | | | | |
| | 12 | 14 & 16 | 18 & 20 | 22 & 24 | 28 & 30 |
| Tie rods: | | | | | |
| Number (minimum) | 3 | 4 | 4 | 5 | 6 |
| Diameter (minimum) | 1/4 in. | 1/4 in. | 1/4 in. | 1/4 in. | 1/4 in. |
| Flooring minimum finished size (in.) | 1/2 x 2 3/4 | 1/2 x 2 3/4 | 1/2 x 2 3/4 | 1/2 x 3/4 | 1/2 x 2 3/4 |
| ¹ A 1/8 x 7/8 in. steel reinforcing strip or its equivalent shall be attached to the side or underside full length. ² Rungs shall be 1 1/8 in., minimum, diameter with at least 7/8 in. diameter tenons, and the maximum spacing shall be 12 in. center to center. | | | | | |

10. Manually Propelled Mobile Ladder Stands and Scaffolds (Towers): ()
- a. Work platforms and scaffolds shall be capable of carrying the design load under varying circumstances depending upon the conditions of use. Therefore, all parts and appurtenances necessary for their safe and efficient utilization must be integral parts of the design. ()
- b. Specific design and construction requirements are not a part of this section because of the wide variety of materials and design possibilities. However, the design shall be such as to produce a mobile ladder stand or scaffold that will safely sustain the specified loads. The material selected shall be of sufficient strength to meet the test requirements and shall be protected against corrosion or deterioration. The design working load of ladder stands shall be calculated on the basis of: Light Designed and constructed to carry a working load of twenty-five (25) pounds per square feet; Medium Designed and constructed to carry a working load of fifty (50) pounds per square feet; Heavy Designed and constructed to carry a working load of seventy-five (75) pounds per square feet. All ladder stands and scaffolds shall be capable of supporting at least four (4) times the design working load. ()
- c. Materials used in mobile ladder stands and scaffolds shall be of standard manufacture and conform to specifications of this section for strength, dimensions, and weights, and shall be selected to safely support the design working load. ()
- d. Nails, bolts, or other fasteners used in the construction of ladders, scaffolds, and towers shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the unit. Nails shall be driven full length. (All nails should be immediately withdrawn from dismantled lumber.) ()
- e. All exposed surfaces shall be free from sharp edges, burrs, or other safety hazards. ()
- f. The maximum work level height shall not exceed four (4) times the minimum or least base dimension of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping. ()
- g. The minimum platform width for any work level shall not be less than twenty (20) inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of sixteen (16) inches. ()
- h. The supporting structure for the work level shall be rigidly braced, using adequate cross bracing or diagonal bracing with rigid platforms at each work level. ()

- i. The steps of ladder stands shall be fabricated from slip resistant treads. ()
- j. The work level platform of scaffolds (towers) shall be of wood, aluminum, or plywood planking, steel or expanded metal, for the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. All planking shall be two (2) inch (nominal) scaffold grade minimum one thousand five hundred (1,500) F. (stress grade) construction grade lumber or equivalent. ()
- k. All scaffold work levels ten (10) feet or higher above the ground or floor shall have a standard (four (4) inch nominal) toeboard. ()
- l. All work levels ten (10) feet or higher above the ground or floor shall have a guardrail of two by four (2 x 4) inch nominal lumber or the equivalent installed forty-two (42) inches high, with a midrail, when required, of at least one by four (1 x 4) inch nominal lumber or equivalent. ()
- m. A climbing ladder, stairway, or equivalent shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not to exceed thirty (30) feet. ()
- n. Wheels or casters shall be properly designed for strength and dimensions to support four (4) times the design working load. ()
- o. All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two (2) of the four (4) casters and shall be of the swivel type. ()
- p. Where leveling of the elevated work platform is required, screw jacks or other suitable means for adjusting the height shall be provided in the base section of each mobile unit. ()
11. Mobile Tubular Welded Frame Scaffolds: (See Figure 073.11 A) ()

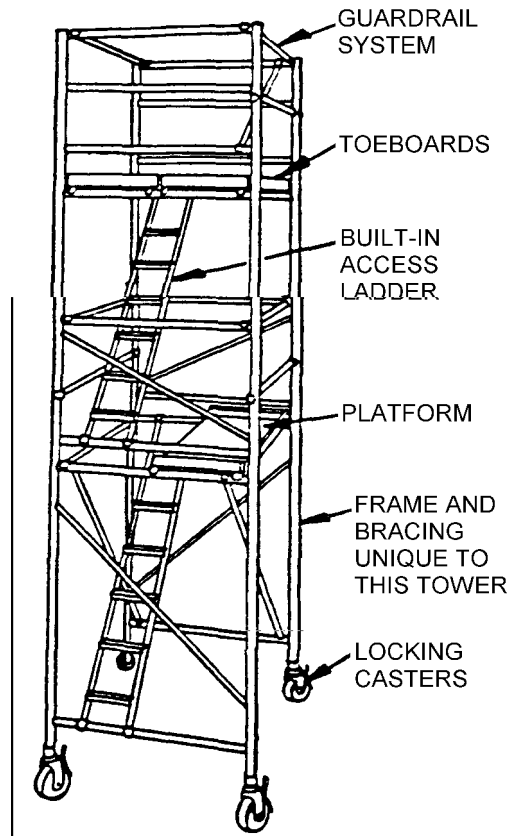
FIGURE 073.11-A



- a. Mobile tubular welded frame scaffolds shall be designed to comply with the requirements of this subsection. ()
- b. Scaffolds shall be properly braced by cross braces and/or diagonal braces for securing vertical members together laterally. The cross braces shall be of a length that will automatically square and align vertical members to the erected scaffold is always plumb, square, and rigid. ()
- c. Spacing of panels or frames shall be consistent with the loads imposed. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs. ()
- d. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent means. ()
- e. Only the manufacturer of a scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding fifty (50) feet in height above the base, unless such structure is approved in writing by a registered professional engineer or erected in accordance with instructions furnished by the manufacturer. ()

12. Mobile Tubular Welded Sectional Folding Scaffolds: (See Figure 073.12 A) ()

FIGURE 073.12-A



Manually Propelled Mobile Scaffold

- a. Mobile tubular welded sectional folding scaffolds including sectional stairway and sectional ladder scaffolds shall be designed to comply with the requirements of IDAPA 17.10.10.073.11. ()
- b. An integral stairway and work platform shall be incorporated into the structure of each sectional folding stairway scaffold. ()
- c. An integral set of pivoting and hinged folding diagonal and horizontal braces and a detachable work platform shall be incorporated into the structure of each sectional folding ladder scaffold. ()
- d. Sectional folding stairway scaffolds shall be designed as medium duty scaffolds except for high clearance. These special base sections shall be designed as light duty scaffolds. When upper sectional folding stairway scaffolds are used with a special high clearance base, the load capacity of the entire scaffold shall be reduced accordingly. The width of a sectional folding stairway scaffold shall not exceed four and one-half (4 1/2) feet. The maximum length of a sectional folding stairway scaffold shall not exceed six (6) feet. ()
- e. Sectional folding ladder scaffolds shall be designed as light duty scaffolds including special base (open end) sections which are designed for high clearance. For certain special applications the six (6) foot folding ladder scaffolds, except for special high clearance base sections, shall be designed for use as medium duty scaffolds.

The width of a sectional folding ladder scaffold shall not exceed four and one-half (4 1/2) feet. The maximum length of a sectional folding ladder scaffold shall not exceed six (6) feet six (6) inches for a six (6) foot long unit, eight (8) foot six (6) inches for an eight (8) foot long unit, or ten (10) foot six (6) inch for a ten (10) foot long unit. ()

f. The end frames of sectional ladder and stairway scaffolds shall be designed so that the horizontal bearers provide supports for multiple planking levels. ()

g. Only the manufacturer of the scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding fifty (50) feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements of this section. ()

13. Mobile Tube and Coupler Scaffolds: ()

a. Mobile tube and coupler scaffolds shall be designed to comply with the applicable requirements of Subsection 073.11 of this section. ()

b. The material used for the couplers shall be of a structural type, such as a drop forged steel, malleable iron or structural grade aluminum. The use of gray cast iron is prohibited. ()

c. Only the manufacturer of the scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding fifty (50) feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements in this subsection. ()

14. Mobile Work Platforms: ()

a. Mobile work platforms shall be designed for the use intended and shall comply with the requirements of IDAPA 17.10.10.073.11. ()

b. The minimum width of the base of mobile work platforms shall not be less than twenty (20) inches. ()

c. Adequate rigid diagonal bracing to vertical members shall be provided. ()

15. Mobile Ladder Stands: ()

a. Mobile ladder stands shall comply with applicable requirements of IDAPA 17.10.10.073.11.()

b. The minimum base width shall conform to IDAPA 17.10.10.073.11 The maximum length of the base section shall be the total length of combined steps and top assembly, measured horizontally, plus five-eighths (5/8) inch per step of rise. ()

c. Steps shall be uniformly spaced and sloped, with a rise of not less than nine (9) inches, nor more than 10 inches, and a depth of not less than seven (7) inches. The slope of the steps section shall be a minimum of fifty-five (55) degrees and a maximum of sixty (60) degrees measured from the horizontal. ()

d. Mobile Ladder Stands having more than five (5) steps or sixty (60) inches vertical height to the top step shall be equipped with handrails. ()

e. Handrails shall be a minimum of twenty-nine (29) inches high. Measurements shall be taken vertically from the center of the step. ()

f. The load (See Subsection 073.11) shall be applied uniformly to a three and one-half (3 1/2) inch wide area front to back at the center of the width span with a safety factor of four (4). ()

074. FALL PROTECTION.

01. Scope: ()
- a. Fall protection shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()
- b. The provisions of this section do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of work operations and after all work operations have been completed. ()
02. Definitions Applicable to this Section: ()
- a. Anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. ()
- b. Body Belt is a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. ()
- c. Body Harness are straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a personal fall arrest system. ()
- d. Connector is a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a karabiner, or it may be an integral component of the system (such as a buckle or "D" ring sewn into a body belt or body harness, or a snap hook spliced or sown to a lanyard or self retracting lanyard). ()
- e. Controlled Access Zone (CAZ) is an area in which certain work (e.g. overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled. ()
- f. Dangerous Equipment is equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall into such equipment. ()
- g. Deceleration Device is any mechanism, such as a rope grab, rip stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest. ()
- h. Deceleration Distance is the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop. ()
- i. Equivalent are alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials, or designs specified in the standard. ()
- j. Failure is load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded. ()
- k. Free Fall is the act of falling before a personal fall arrest system begins to apply force to arrest the fall. ()

- l. Free Fall Distance is the vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self retracting lifeline/lanyard extension before they operate and fall arrest forces occur. ()
- m. Guardrail System is a barrier erected to prevent employees from falling to lower levels. ()
- n. Hole is a gap or void two (2) inches or more in its least dimension, in a floor, roof, or other walking/working surface. ()
- o. Infeasible means that it is impossible to perform work using a conventional fall protection system (i.e., guardrail system, safety net, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection. ()
- p. Lanyard is a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body harness to a deceleration device, lifeline, or anchorage. ()
- q. Leading Edge is the edge of a floor, roof, or form work for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or form work sections are placed, formed, or constructed. A leading edge is considered to be an unprotected side and edge during periods when it is not actively and continuously under construction. ()
- r. Lifeline is a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage. ()
- s. Low slope Roof is a roof having a slope less or equal to four (4) to twelve (12) (vertical to horizontal). ()
- t. Lower Levels are those areas or surfaces to which an employee can fall a distance of four (4) feet or more. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof. ()
- u. Mechanical Equipment is all motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts. ()
- v. Opening is a gap or void thirty (30) inches or more high and eighteen (18) inches or more wide, in a wall or partition, through which employees can fall to a lower level. ()
- w. Overhand bricklaying and related work is the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhead bricklaying process. ()
- x. Personal Fall Arrest System is a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connects, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. ()
- y. Positioning Device System is a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning. ()
- z. Rope Grab is a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principal of inertial locking, cam/level locking, or both. ()
- aa. Roof is the exterior surface on the top of a building. This does not include floors or form work

which, because a building has not been completed, temporarily become the top surface of a building. ()

bb. Roofing Work is the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck. ()

cc. Safety monitoring System is a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards. ()

dd. Self retracting Lifeline/Lanyard is a deceleration device containing a drum wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall. ()

ee. Snaphook is a connector comprised of a hook shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. The only approved snaphooks are the locking type with a self closing, self locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection. ()

ff. Steep Roof is a roof having a slope greater than four (4) to twelve (12) (vertical to horizontal). ()

gg. Toeboard is a low protective barrier, four (4) inches high minimum, that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel. ()

hh. Unprotected Sides and Edges is any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway at a height of four (4) feet or more where there is no wall or guardrail system at least forty-two (42) inches high. ()

ii. Walking/Working Surface is any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, form work and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties. ()

jj. Warning Line System is a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of a guardrail, body harness, or safety net systems to protect employees in the area. ()

kk. Work Area is that portion of a walking/working surface where job duties are being performed. ()

03. General Requirements: ()

a. The employer shall determine if the walking/working surface on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity. ()

04. Unprotected Sides and Edges: ()

a. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is four (4) feet above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems. ()

b. Each employee who is constructing a leading edge four (4) feet above lower levels shall be protected from falling by guardrail, safety net systems, or personal fall arrest systems. EXCEPTION: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of this section. NOTE: There is a presumption that it is feasible and will not create a greater hazard to implement at least one (1) of the above listed fall

protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan in lieu of implementing any of those systems. ()

c. Each employee on a walking/working surface four (4) feet above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge. ()

05. Hoist Areas. Each employee in a hoist area shall be protected from falling to lower levels a distance of four (4) feet or more by guardrail systems or personal fall arrest systems. If guardrail systems, (or chain, gate, or guardrail) or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system. ()

06. Holes: ()

a. Each employee on walking/working surfaces shall be protected from falling, tripping, or stepping into or through holes (including skylights) by means of covers in accordance with this standard. ()

b. Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers. ()

07. Form Work and Reinforcing Steel. Each employee, on the face of form work or reinforcing steel, shall be protected from falling to lower levels of six (6) feet or more by personal fall arrest systems, safety net systems, or positioning device systems. ()

08. Ramps, Runways, and Other Walkways: ()

a. Each employee, at the edge of an excavation, shall be protected from falling by guardrail systems, fences, barricades when the excavations are not readily seen because of plant growth or other visual barrier. ()

b. Each employee at the edge of a well, pit, shaft, and similar excavation shall be protected from falling by guardrail systems, fences, barricades, or covers. ()

09. Dangerous Equipment: ()

a. Each employee above dangerous equipment shall be protected from falling into or onto dangerous equipment by guardrail systems or by equipment guards. ()

b. Each employee six (6) feet or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems. ()

10. Roofing Work on Low Slope Roofs. Except as otherwise provided in this section, each employee engaged in roofing activities on low slope roofs, with unprotected sides and edges six (6) feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs fifty (50) feet or less in width the use of a safety monitoring system [i.e. without the warning line system] is permitted. ()

11. Steep Roofs. Each employee on a steep roof with unprotected sides and edges above lower levels shall be protected from falling by guardrail systems with toeboards, safety net systems, of personal fall arrest systems. ()

12. Wall Openings: Each employee working on, at, above, or near wall openings (including those with

chutes attached) where the outside bottom edge of the wall opening is thirty (30) inches above lower levels and the inside bottom edge of the wall opening is less than forty-two (42) inches above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system. ()

13. Protection from Falling Objects: ()
 - a. When a person is exposed to falling objects, the employer shall have each employee wear a hard hat and; ()
 - b. Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels or; ()
 - c. Erect a canopy structure and keep potential falling objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced or; ()
 - d. Barricade the area to which objects could fall, prohibit employees from entering the barricade area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced. ()
14. Fall Protection Systems Criteria and Practices: ()
 - a. Employers shall provide and install all fall protection systems required by this section for an employee, and shall comply with all applicable parts of this standard before that employee begins the work that necessitates the fall protection. ()
 - b. Guard rail systems shall comply with the provisions of IDAPA 17.10.10.070.14 as it applies to employee work places. ()
 - c. Safety net systems shall comply with the provisions of IDAPA 17.10.05.050.11. ()
 - d. Personal fall arrest systems and their use shall comply with the provisions of IDAPA 17.10.10.074.15. ()
 - e. Positioning device systems and their use shall comply with the provisions of IDAPA 17.10.10.074.16. ()
 - f. Warning line systems and their use shall comply with the provisions of IDAPA 17.10.10.074.17. ()
15. Personal Fall Arrest Systems: ()
 - a. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials. ()
 - b. Connectors shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system. ()
 - c. "D" rings and snaphooks shall have a minimum tensile strength of five thousand (5,000) pounds. ()
 - d. "D" rings and snaphooks shall be proof tested to a minimum tensile load of three thousand six hundred (3,600) pounds without cracking, breaking, or taking permanent deformation. ()
 - e. Snaphooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member. Only locking type snaphooks shall be used. ()

f. Unless the snaphook is a locking type and designed for the following connections, snaphooks shall not be engaged: directly to webbing, rope or wire rope; to each other; to a "D" ring to which another snaphook or other connector is attached; to a horizontal lifeline; or to any object which is incompatibility shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook and release itself. ()

g. On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical life lines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline. ()

h. Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two (2). ()

i. Lanyards and vertical lifelines shall have a minimum breaking strength of five thousand (5,000) pounds. ()

j. When vertical lifelines are used, each employee shall be attached to a separate lifeline. EXCEPTION: During the construction of elevator shafts, two (2) employees may be attached to the same lifeline in the hoistway, provided both employees are working atop a false car that is equipped with guardrails; the strength of the lifeline is ten thousand (10,000) pounds (five thousand (5,000) pounds per employee); and all other criteria specified in this section for lifelines have been met. ()

k. Lifelines shall be protected against being cut or abraded. ()

l. Self retracting lifelines and lanyards which automatically limit free fall distance to two (2) feet or less shall be capable of sustaining a minimum tensile load of three thousand (3,000) pounds applied to the device with the lifeline or lanyard in the fully extended position. ()

m. Self retracting lifelines and lanyards which do not limit free fall distance to two (2) feet or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of five thousand (5,000) pounds applied to the device with the lifeline or lanyard in the fully extended position. ()

n. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of belts and body harnesses shall be made from synthetic fibers. ()

o. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspended platforms and capable of supporting at least five thousand (5,000) pounds per employee attached, or shall be designed, installed, and used as follows: as part of a complete personal fall arrest system which maintains a safety factor of at least two (2); and under the supervision of a qualified person. ()

p. Personal fall arrest systems, when stopping a fall, shall limit maximum arresting force on an employee to one thousand eight hundred (1,800) pounds when used with a body harness; be rigged such that an employee can neither free fall more than six (6) feet, nor contact any lower level; bring an employee to a complete stop and limit maximum deceleration distance an employee travels to three and one-half (3.5) feet; and, have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six (6) feet, or the free fall distance permitted by the system, whichever is less. ()

q. The attachment point of the body harness shall be located in the center of the wear's back near shoulder level, or above the wearer's head. ()

r. Body harnesses and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials or personnel. ()

s. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse. ()

- t. The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves. ()
- u. Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service. ()
- v. Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists except as specified else where in this standard. ()
- w. When a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the walking/working surface. ()
16. Positioning Device Systems: ()
- a. Positioning devices shall be rigged such that an employee cannot free fall more than two (2) feet. ()
- b. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or three thousand (3,000) pounds, whichever is greater. ()
- c. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials. ()
- d. Connectors shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of this system. ()
- e. Connecting assemblies shall have a minimum tensile strength of five thousand (5,000) pounds. ()
- f. "D" rings and snaphooks shall be proof tested to a minimum tensile load of three thousand six hundred (3,600) pounds without cracking, breaking, or taking permanent deformation. ()
- g. Snaphooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member. Only self locking type snaphooks shall be used. ()
- h. Unless the snaphook is a locking type and designed for the following connections, snaphooks shall not be engaged: directly to webbing, rope or wire rope; to each other; to a "D" ring to which another snaphook or other connector is attached; to a horizontal lifeline; or to any object which is of incompatible shape or dimension in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook and release itself. ()
- i. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service. ()
- j. Positioning device systems, shall be used only for employee protection (as part of a personal fall arrest system) and not to hoist materials. ()
17. Warning Line Systems: ()
- a. The warning line shall be erected around all sides of the work area. ()
- b. When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet from the roof edge. ()
- c. When mechanical equipment is being used, the warning line shall be erected not less than six (6)

feet from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than ten (10) feet from the roof edge which is perpendicular to the direction of mechanical equipment operation. ()

d. Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two (2) warning lines. ()

e. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area. ()

f. Warning lines shall consist of ropes, wires, or chains, and supporting stanchions. ()

g. The rope, wire, or chain shall be flagged at not more than six (6) foot intervals with high visibility material. ()

h. The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than thirty-four (34) inches from the walking/working surface and its highest point is no more than thirty-nine (39) inches from the walking/working surface. ()

i. After being erected, with rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over a force of at least sixteen (16) pounds applied horizontally against the stanchion, thirty (30) inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge. ()

j. The rope, wire, or chain shall have a minimum tensile strength of five hundred (500) pounds, and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in IDAPA 17.10.10.074.17.i. ()

k. The line shall be attached at each stanchion in such a way that pulling on one (1) section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over. ()

l. No employees shall be allowed in the area between a roof edge and warning line unless the employee is performing roofing work in the area. ()

m. Mechanical equipment on roofs shall be used, maintained, or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system. ()

18. Controlled Access Zones: ()

a. When used to control access to areas where leading edge is at a height of six (6) feet or more and other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access. ()

b. When control lines are used, they shall be erected not less than six (6) feet nor more than twenty-five (25) feet from the unprotected or leading edge. ()

c. The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge. ()

d. The control line shall be connected on each side to a guardrail system or wall. ()

e. Control lines shall consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions. ()

f. Each control line shall be flagged or otherwise clearly marked at not more than six (6) foot intervals with high visibility material. ()

- g. Each control line shall be rigged and supported in such a way that its lowest point (including sag) is not less than thirty-nine (39) inches from the walking/working surface and its highest point is no more than forty-five (45) inches from the walking/working surface. ()
- h. Each control line shall have a minimum breaking strength of two hundred (200) pounds. ()
- i. On floors and roofs where guardrail systems are not in place prior to the beginning of operations, controlled access zones shall be enlarged, as necessary, to enclose all points of access, material handling areas, and storage areas. ()
- j. On floors and roofs where guardrail systems are in place, but need to be removed to allow work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed. ()
19. Safety Monitoring Systems: ()
- a. The employer shall designate a qualified person to monitor the safety of other employees in a controlled access zone. ()
- b. The safety monitor shall be competent to recognize fall hazards. ()
- c. The safety monitor shall warn the employee when it appears that the employees is unaware of a fall hazard or is acting in an unsafe manner. ()
- d. The safety monitor shall be on the same walking/working surface or at equal height and within visual sighting distance of the employee being monitored. ()
- e. The safety monitor shall be close enough to communicate orally with the employee. ()
- f. The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function. ()
- g. Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in operations on low slope roofs. ()
- h. No employee, other than the employee(s) engaged in the work or employee(s) covered by a fall protection plan, shall be allowed in an area where an employee(s) is being protected by a safety monitoring system. ()
- i. Each employee working in a controlled access zone shall be directed to comply promptly with fall hazard warnings from safety monitors. ()
20. Fall Protection Plan: ()
- a. A written fall protection plan shall be prepared by a qualified person and developed specifically for all sites where the work, at heights of 6 feet or more, is to be performed and the plan must be maintained up to date. ()
- b. Any changes to the fall protection plan shall be approved by a qualified person. ()
- c. A copy of the fall protection plan with all approved changes shall be maintained at the job site. ()
- d. The implementation of the fall protection plan shall be under the supervision of a competent person. ()
- e. The fall protection plan shall document the reasons why the use of conventional fall protection

systems (guardrail systems, personal fall arrest systems, or safety net system) are infeasible or why their use would create a greater hazard. ()

f. The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection by the conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling. ()

g. Where no other alternative measure has been implemented, the employer shall implement a safety monitoring system in conformance with IDAPA 17.10.10.074.19. ()

h. The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in IDAPA 17.10.10.074.18. ()

i. The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones. ()

j. In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents. ()

21. Training Program: ()

a. The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards. ()

b. The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas: the nature of fall hazards in the work area; the correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used; the use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used; the role of each employee in the safety monitoring system when this system is used; the limitations on the use of mechanical equipment during the performance of work; the correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; the role of employees in fall protection plans; and the requirements of this and related sections of this standard. ()

c. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required the employer shall provide a refresher course to each such employee. ()

d. Other circumstances where retraining is required include, but are not limited to, situations where: changes in the workplace render previous training obsolete; or changes in the types of fall protection systems or equipment to be used render previous training obsolete; or inadequacies in an affected employee's knowledge or use of fall protection or equipment indicate that the employee does not have the requisite understanding or skill. ()

075. SAFETY REQUIREMENTS FOR POWERED PLATFORMS FOR BUILDING MAINTENANCE.

01. Scope: ()

a. Powered platforms for building maintenance shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()

- b. This section covers powered platform installations permanently dedicated to interior or exterior building maintenance of a specific structure or group of structures. Building maintenance includes, but is not limited to, such tasks as window cleaning, caulking, metal polishing and reglazing. ()
02. Definitions Applicable to this Section: ()
- a. Anemometer is an instrument for measuring wind velocity. ()
- b. Angulated Roping is a system of platform suspension in which the upper wire rope sheaves or suspension points are closer to the plane of the building face than the corresponding attachment points on the platform, thus causing the platform to press against the face of the building during its vertical travel. ()
- c. Babbitted Fastenings is the method of providing wire rope attachments in which the ends of the wire strands are bent back and are held in a tapered socket by means of poured molten babbitt metal. ()
- d. Brake Disc is a brake in which the holding effect is obtained by frictional resistance between one (1) or more faces of discs keyed to the rotating member to be held and fixed discs keyed to the stationary or housing member (pressure between the discs being applied axially). ()
- e. Brake Self Energizing Band Type is essentially an unidirectional brake in which the holding effect is obtained by the snubbing action of a flexible band wrapped about a cylindrical wheel or drum affixed to the rotating member to be held, the connections and linkages being so arranged that the motion of the brake wheel or drum will act to increase the tension or holding force of the band. ()
- f. Brake Shoe Type is a brake in which the holding effect is obtained by applying the direct pressure of two (2) or more segmental friction elements held to a stationary member against a cylindrical wheel or drum affixed to the rotating member to be held. ()
- g. Building face rollers is a specialized form of guide roller designed to contact a portion of the outer face wall structure of the building, and to assist in stabilizing the operator's platform during vertical travel. ()
- h. Building Maintenance are operations such as window cleaning, caulking, metal polishing, reglazing, and general maintenance on building surfaces. ()
- i. Cable is a conductor, or group of conductors, enclosed in a weatherproof sheath, that may be used to supply electrical power and/or control current for equipment or to provide voice communication circuits. ()
- j. Carriage is a wheeled vehicle used for the horizontal movement and support of other equipment. ()
- k. Certification is a written, signed and dated statement confirming the performance of a requirement of this section. ()
- l. Combination Cable is a cable having both steel structural members capable of supporting the platform, and copper or other electrical conductors insulated from each other and the structural members by nonconductive barriers. ()
- m. Continuous Pressure is operation by means of buttons or switches, any one of which may be used to control the movement of the working platform or roof car, only as long as the button or switch is manually maintained in the actuating position. ()
- n. Control is a system governing starting, stopping, direction, acceleration, speed, and retardation of moving members. ()
- o. Controller. A device or group of devices, usually contained in a single enclosure, which serves to control in some predetermined manner the apparatus to which it is connected. ()

p. Davit is a device, used singly or n pairs, for suspending a powered platform from work, storage, and rigging locations on the building being serviced. Unlike outriggers, a davit reacts its operating load into single roof socket or carriage attachment. ()

q. Design Factor is the ratio of the rated strength of the suspension wire rope to the rated working load, and shall be calculated using the following formula:

$$F = \frac{S(N)}{W}$$

Where: F = Design Factor

S = Manufacturer's Rated Strength of one (1) Suspension Rope

N = Number of Suspension Ropes Under Load

W = Rated Working Load on all Ropes at Any Point of Travel ()

r. Electrical ground. A conducting connection between an electrical circuit or equipment and the earth, or some conducting body which serves in place of the earth. ()

s. Ground Rigging is a method of suspending a work platform starting from a safe surface to a point of suspension above the safe surface. ()

t. Ground Rigged Davit is a davit which cannot be used to raise a suspended working platform above the building face being serviced. ()

u. Guide Button is a building face anchor designed to engage a guide track mounted on a platform. ()

v. Guide Roller is a rotating, bearing mounted, generally cylindrical member, operating separately or as part of a guide shoe assembly, attached to the platform, and providing rolling contact with building guideways or other building contact members. ()

w. Guide Shoe is an assembly of rollers, slide members, or the equivalent, attached as a unit to the operator's platform, and designed to engage with the building members provided for the vertical guidance of the operator's platform. ()

x. Hoisting Machine is a device intended to raise and lower a suspended or support unit. ()

y. Hoist Rated Load is the hoist manufacturer's maximum allowable operating load. ()

z. Installation is all the equipment and all affected parts of a building which are associated with the performance of building maintenance using powered platforms. ()

aa. Interlock is a device actuated by the operation of some other device with which it is directly associated, to govern succeeding operations of the same or allied devices. ()

bb. Intermittent Stabilization is a method of platform stabilization in which the angulated suspension wire rope(s) are secured to regularly spaced building anchors. ()

cc. Lanyard is a flexible line of rope, wire rope, or strap which is used to secure the body harness to a deceleration device, lifeline, or anchorage. ()

dd. Lifeline is a component of fall protection consisting of a flexible line for connection to an anchorage at one (1) end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage. ()

- ee. Live Load is the total static weight of workers, tools, parts, and supplies that the equipment is designed to support. ()
- ff. Obstruction Detector is a control that will stop the suspended or supported unit in the direction of travel if an obstruction is encountered, and will allow the unit to move only in a direction away from the obstruction. ()
- gg. Operating Device is a push button, lever, or other manual device used to actuate a control. ()
- hh. Outrigger is a device, used singly or in pairs, for suspending a working platform from work, storage, and rigging locations on the building being serviced. Unlike davits, an outrigger reacts its operating moment load as at least two (2) opposing vertical components acting into two(2) or more distinct roof points and/or attachments. ()
- ii. Poured Socket is a method of providing wire rope terminations in which the ends of the rope are held in a tapered socket by means of poured spelter or resins. ()
- jj. Power Platform is equipment to provide access to the exterior of a building for maintenance, consisting of a suspended power operated working platform, a roof car, or other suspension means, and the requisite operating and control devices. ()
- kk. Primary Brake is a break designed to be applied automatically whenever power to the prime mover is interrupted or disconnected. ()
- ll. Prime Mover is the source of mechanical power for a machine. ()
- mm. Rated Load is the combined weight of employees, tools, equivalent, and other material which the working platform is designed and installed to lift. ()
- nn. Rated Strength is the strength of wire rope, as designated by its manufacturer or vender, based on standard testing procedures or acceptable engineering design practices. ()
- oo. Rated Working Load is the combined static weight of men, materials, and suspended or supported equipment. ()
- pp. Relay, Direction is an electrically energized contactor responsive to an initiating control circuit, which in turn causes a moving member to travel in a particular direction. ()
- qq. Relay, Potential for Vertical Travel is an electrically energized contactor responsive to initiating control circuit, which in turn controls the operation of a moving member in both directions. This relay usually operates in conjunction with direction relays, as covered under the definition "relay, direction". ()
- rr. Roof Car is a structure for the suspension of a working platform, providing for its horizontal movement to working positions. ()
- ss. Roof Powered Platform is a powered platform having the raising and lowering mechanism located on a roof car. ()
- tt. Roofed Rigged Davit is used to raise the suspended working platform above the building face being serviced. This type of davit can also be used to raised a suspended working platform which has been ground rigged. ()
- uu. Rope is the equipment used to suspend a component of an equipment installation, i.e., wire rope. ()
- vv. Safe Surface is a horizontal surface intended to be occupied by personnel which is so protected by a fall protection system that it can be reasonably assured that the occupants will be protected against falls. ()

- ww. Secondary Brake is a brake designed to arrest the descent of the suspended or supported equipment in the event of an over speed condition. ()
- xx. Self powered platform is a powered platform having the raising and lowering mechanism located on the working platform. ()
- yy. Speed Reducer is a positive type speed reducing machine. ()
- zz. Safety Factor is the ratio of the stabilizing moment to the overturning moment. ()
- aaa. Stabilizer Tie is a flexible line connecting the building anchor and suspension wire rope supporting the platform. ()
- bbb. Supported Equipment is building maintenance equipment that is held or moved to its working position by means of attachment directly to the building or extensions of the building being maintained. ()
- ccc. Suspended Equipment is building maintenance equipment that is suspended and raised or lowered to its working position by means of ropes or combination cables attached to some anchorage above the equipment. ()
- ddd. Suspended Scaffold (swinging scaffold) is a scaffold supported on wire ropes or other ropes, used for work on, or for providing access to, vertical sides of structures on a temporary basis. Such scaffold is not designed for use on a specific structure or group of structures. ()
- eee. Tail Line is the non supporting end of the wire rope used to suspend the platform. ()
- fff. Tie In Guides is the suspended or supported unit during its vertical travel on the face of the building. ()
- ggg. Traction Hoist is a type of hoisting machine that does not accumulate the suspension wire rope on the hoisting drum or sheave, and is designed to raise and lower a suspended load by the application of friction forces between the suspension wire rope and drum or sheave. ()
- hhh. Transportable Outriggers are outriggers designed to be moved from one work location to another. ()
- iii. Traveling cable is a cable made up of electrical or communication conductors or both, and providing electrical connection between the working platform and the roof car or other fixed point. ()
- jjj. Trolley Carriage is a carriage suspended from an overhead track structure. ()
- kkk. Weatherproof is equipment so constructed or protected that exposure to the weather will not interfere with its proper operation. ()
- lll. Winding Drum Hoist is a type of hoisting machine that accumulates the suspension wire rope on the hoisting drum. ()
- mmm. Working Platform is the suspended structure arranged for vertical travel which provides access to the exterior of the building or structure. ()
- nnn. Wrap is one (1) complete turn of the suspension wire rope around the surface of a hoist drum. ()
- ooo. Yield Point is the stress at which a material exhibits a permanent set of two tenths percent (0.2%). ()

ppp. Zinced Fastenings are a method of providing wire rope attachments in which the splayed or fanned wire ends are held in a tapered socket by means of poured molten zinc. ()

03. General Requirements: ()

a. This section applies to all powered platforms installed subsequent to August 27, 1971. ()

b. All new powered platforms for exterior building maintenance purchased and used after August 27, 1971 shall meet all of the design, construction, installation, and maintenance requirements of Part II and III of the American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance ANSI A 120.1 and of these subsections. (Reference shall be made to appropriate parts of ANSI A120.1 for detail specifications for equipment and special installations.) ()

c. The requirements of this section applies only to electric powered platforms. It is not the intent of this section to prohibit the use of other types of power. Installation of powered platforms using other types of power is permitted, provided such platforms have adequate protective devices for the type of power used, and otherwise provide for reasonable safety of life and limb to users of equipment and to others who may be exposed. ()

d. Building owners with powered platforms shall inform employers and/or their employees before each use in writing that the installation meets the requirements of this section and for employees not covered by this standard, 29 CFR 1910.66. ()

e. Building owners with powered platforms shall inform employers and/or their employees in writing that the installation has been inspected, tested, and maintained in compliance with the requirements of this section and for employees not covered by this standard, 29 CFR 1910.66. ()

f. The employer shall not permit employees to use a powered platform prior to receiving the assurances required in IDAPA 17.10.10.074.03.d. and IDAPA 17.10.10.074.03.e. ()

04. Powered Platform Installations: ()

a. This subsection applies to affected parts of buildings which utilize working platforms for building maintenance. ()

b. Structural supports, tie downs, tie in guides, anchoring devices, and any affected parts of the building included in the installation shall be designed by or under the direction of an Idaho licensed engineer experienced in such design. ()

c. Exterior installations shall be capable of withstanding prevailing climatic conditions. ()

d. The building installation shall provide safe access to, and egress from, the equipment and sufficient space to conduct necessary maintenance of the equipment. ()

e. The affected parts of the building shall have the capability of sustained all the loads imposed by the equipment. ()

f. The effected parts of the building shall be designed so as to allow the equipment to be used without exposing employees to a hazardous condition. ()

g. The exterior of each building shall be provided with tie in guides unless the following conditions are met: ()

h. When angulated rope is employed, tie in guides may be eliminated for not more than seventy-five (75) feet of the uppermost elevation of the building, if infeasible due to exterior building design, provided an angulation force of at least 10 pounds is maintained under all conditions of loading. ()

i. Tie in guides required in this subsection may be eliminated if an intermittent stabilization system is

used. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. The system may be used together with continuous positive building guide systems using tie in guides on the same building, provided the requirements for each system are met. The maximum vertical interval between building anchors shall be three (3) floors or fifty (50) feet whichever is less. Building anchors shall be located vertically so that attachment of the stabilizer ties will not cause the platform suspension ropes to angulate the platform horizontally across the face of the building. The anchors shall be positioned horizontally on the building face as to be symmetrical about the platform suspension ropes. Building anchors shall be easily visible to employees and shall allow a stabilizer tie attachment for each of the platform suspension ropes at each vertical interval. If more than two (2) suspension ropes are used on a platform, only the two (2) building side suspension ropes at the platform ends shall require a stabilizer attachment. Building anchors which extended beyond the face of the building shall be free of sharp edges or points. Where cables, suspension wire ropes and lifelines may be in contact with the building face, external building anchors shall not interfere with their handling or operation. The intermittent stabilization system building anchors and components shall be capable of sustaining without failure at least 4 times the maximum anticipated load applied or transmitted to the components and anchors. The minimum design wind load for each anchor shall be three hundred (300) pounds, if two (2) anchors share the wind load. The building anchors and stabilizer ties shall be capable of sustaining anticipated horizontal and vertical loads from winds specified for roof storage design which may act on the platform and wire ropes if the platform is stranded on a building face. If the building anchors have different spacing than the suspension wire rope or if the building requires different suspension spacing on one (1) platform, one (1) building anchor and stabilizer tie shall be capable of sustaining the wind loads.

()

j. Tie in guides required in this subsection may be eliminated if a button guide stabilization system is used. Guide buttons shall be coordinated with platform mounted equipment. Guide buttons shall be located horizontally on the building face so as to allow engagement of each of the guide tracks mounted on the platform. Guide buttons shall be located in vertical rows on the building face for proper engagement of the guide tracks mounted on the platform. Two (2) guide buttons shall engage each guide track at all times except for the initial engagement. Guide buttons which extend beyond the face of the building shall be free of sharp edges or points. Where cables, ropes, and lifelines may be in contact with the building face, guide buttons shall not interfere with their handling or operation. Guide buttons, connections and seals shall be capable of sustaining without damage at least the weight of the platform, or provision shall be made in the guide tracks or guide track connectors to prevent the platform and its attachments from transmitting the weight of the platform to the guide buttons, connections and seals. In either case, the minimum design load shall be three hundred (300) pounds per building anchor.

()

k. Tie in guides required in this subsection may be eliminated if a system utilizing angulated roping and building face rollers are used. The system shall keep the equipment in continuous contact with the building facade, and shall prevent sudden horizontal movement of the platform. This system is acceptable only where the suspended portion of the equipment in use does not exceed one hundred and thirty (130) feet above a safe surface or ground level, and where the platform maintains no less than 10 pounds angulation force on the building facade.

()

l. Tie in guides for building interiors (atriums) may be eliminated when an Idaho licensed engineer determines that an alternative stabilization system including systems in IDAPA 17.10.10.075.09.i., 075.09.j., and 075.09.k., or a platform tie off at each work station will provide equivalent safety.

()

m. Employees working on roofs while performing building maintenance shall be protected by a perimeter guarding system which meets the requirements of IDAPA 17.10.10.074.

()

n. The perimeter guard shall not be more than 6 inches inboard of the inside face of a barrier, i.e. the parapet wall, or roof edge curb of the building being serviced; however, the perimeter guard location shall not exceed an 18 inch setback from the exterior building face.

()

o. Operational areas for trackless type equipment shall be provided with structural stops, such as curbs, to prevent equipment from traveling outside its intended travel areas and to prevent a crushing or shearing hazard.

()

p. Means shall be provided to traverse all carriages and their suspended equipment to a safe area for maintenance and storage.

()

q. An elevated track system which is located four (4) feet or more above a safe surface, and traversed by carriage supported equipment, shall be provided with a walkway and guardrail system; or the working platform shall be capable of being lowered, as part of its normal operation, to the lower safe surface for access and egress of the personnel and shall be provided with a safe means of access and egress to the lower safe surface. ()

r. Imbedded tie down anchors, fasteners, and effected structures shall be resistant to corrosion. ()

s. Hanging lifelines and all cables not in tension shall be stabilized at each two hundred (200) foot interval of vertical travel of the working platform beyond an initial two hundred (200) foot distance. Hanging cables, other than suspended wire ropes, which are in constant tension shall be stabilized when the vertical travel exceeds an initial six hundred (600) foot distance, and at further intervals of six hundred (600) feet or less. ()

t. A written emergency action plan shall be developed and implemented for each kind of working platform operation. This plan shall explain the emergency procedures which are to be followed in the event of a power failure, equipment failure or other emergencies which may be encountered. The plan shall also explain that employees inform themselves about the building emergency escape routes, procedures, and alarm systems before operating a platform. Upon initial assignment and whenever the plan is changed the employer shall review with each employee those parts of the plan which the employee must know to protect themselves in the event of an emergency. ()

u. Repairs or major maintenance of those building portions that provide primary support for the suspended equipment shall not affect the capability of the building to meet the requirements of this section. ()

v. General building electrical installations shall comply with IDAPA 17.10.17.150. ()

w. The building electrical wiring shall be of such capacity that when full load is applied to the equipment power circuit not more than a 5 percent drop from building service vault voltage shall occur at any power circuit outlet used by equipment regulated by this section. ()

x. The equipment power circuit shall be an independent electrical circuit that shall remain separate from all other equipment within or on the building, other than power circuits used for hand tools that will be used in conjunction with the equipment. If the building is provided with an emergency power system, the powered platform power circuit shall also be connected to this system. ()

y. The power circuit shall be provided with a disconnect switch that can be locked in the "OFF" and "ON" positions. The switch shall be conveniently located with respect to the primary operating area of the powered platform to allow the operators of the equipment access to the switch. ()

z. The disconnect switch for the power circuit shall be locked in the "ON" position when the powered platform is in use. ()

aa. An effective two (2) way voice communication system shall be provided between the equipment operators and persons stationed within the building being serviced. The communications facility shall be operable and shall be manned at all times by persons stationed within the building or building complex whenever the powered platform is being used. ()

05. Powered Platform Equipment: ()

a. Equipment shall be designed by or under the direction of an Idaho licensed engineer experienced in such design. ()

b. The design shall provide for a minimum live load of two hundred fifty (250) pounds for each occupant of a suspended or supported platform. ()

c. Powered platforms that are exposed to wind when not in service shall be designed to withstand forces generated by winds of at least one hundred (100) miles per hour at thirty (30) feet above grade. ()

d. Powered platforms that are exposed to wind when in service shall be designed to withstand forces generated by winds of at least fifty (50) miles per hour for all elevations. ()

e. Bolted connections shall be self locking or shall otherwise be secured to prevent loss of the connections by vibration. ()

f. Elevated building maintenance equipment shall be suspended by a carriage, outriggers, davits, or an equivalent method. ()

g. Carriages used for suspension of elevated building maintenance equipment shall comply with the following: the horizontal movement of a carriage shall be controlled so as to ensure its safe movement and allow accurate positioning of the platform for vertical travel or storage; powered carriages shall not exceed a traversing speed of fifty (50) feet per minute; the initiation of a traversing movement for a manually propelled carriage on a smooth level surface shall not require a person to exert a horizontal force greater than forty (40) pounds; structural stops and curbs shall be provided to prevent the traversing of the carriage beyond its designed limits of travel. ()

h. Traversing controls for a powered carriage shall be of a continuous pressure weatherproof type; multiple controls when provided shall be arranged to permit operation from only one (1) control station at a time; an emergency stop device shall be provided on each end of a powered carriage for interrupting power to the carriage drive motors. ()

i. The operating control(s) shall be so connected that in the case of suspended equipment traversing of a carriage is not possible until the suspended portion of the equipment is located at its uppermost designated position for traversing, and is free of contact with the face of the building or building guides. In addition, all protective devices and interlocks are to be in the proper position to allow traversing of the carriage. ()

j. Stability for underfoot supported carriages shall be obtained by gravity, by an attachment to a structural support, or by a combination of gravity and structural support. The use of following counterweights to achieve stability is prohibited. The stability factor against overturning shall not be less than two (2) for horizontal traversing of the carriage, including the effects of impact and wind. The carriages and their anchorages shall be capable of resisting accidental over tensioning of the wire ropes suspending the working platform, and this calculated value shall include the effect of one and one-half (1 1/2) times the stall capacity of the hoist motor. All parts of the installation shall be capable of withstanding without damage to any part of the installation the forces resulting from the stall load of the hoist and one-half (1/2) the wind load. Roof carriages which rely on having tie down devices secured to the building to develop the required stability against overturning shall be provided with an interlock which will prevent vertical platform movement unless the tie down is engaged. ()

k. An automatically applied braking or locking system, or equivalent, shall be provided that will prevent unintentional traversing of power traversed or power assisted carriages. ()

l. A manual or automatic braking or locking system or equivalent, shall be provided that will prevent unintentional traversing of manually propelled carriages. ()

m. A means to lock out the power supply for the carriage shall be provided. ()

n. Safe access to and egress from the carriage shall be provided from a safe surface. If the carriage traverses an elevated area, any operating area on the carriage shall be protected by a guardrail system in compliance with the provisions of this subsection. Any access gate shall be self closing and self latching, or provided with an interlock. ()

o. Each carriage work station position shall be identified by location markings and/or position indicators. ()

p. The motors shall stall if the load on the hoist motors is at any time in excess of three (3) times that necessary for lifting the working platform with its rated load. ()

q. Transported outriggers may be used as a method of suspension for ground rigged working platforms where the point of suspension does not exceed three hundred (300) feet above a safe surface. Tie in guide system(s) shall be provided which meet the requirements of this section. ()

r. Transportable outriggers shall be used only with self powered, ground rigged working platforms. ()

s. Each transporting outrigger shall be secured with a tie down to a verified anchorage on the building during the entire period of its use. The anchorage shall be designed to have a stability factor of not less than four (4) against overturning or upsetting of the outrigger. ()

t. Access to and egress from the working platform shall be from and to a safe surface below the point of suspension. ()

u. Each transportable outrigger shall be designed for lateral stability to prevent roll over in the event an accidental lateral load is applied to the outrigger. The accidental lateral load to be considered in this design shall be not less than 70 percent of the rated load of the hoist. ()

v. Each transportable outrigger shall be designed to support an ultimate load of not less than 4 times the rated load of the hoist. ()

w. A transportable outrigger shall be tied back to a verified anchorage on the building with a rope equivalent in strength to the suspension rope. ()

x. The tie back rope shall be installed parallel to the centerline of the outrigger. ()

y. Every davit installation, fixed or transportable, rotatable or non rotatable shall be designed and installed to ensure that it has a stability factor against overturning of not less than four (4). ()

z. The following requirements apply to roof rigged davit systems: access to and egress from the working platform shall be from a safe surface. Access or egress shall not require persons to climb over a building's parapet or guard railing; and the working platform shall be provided with wheels, casters, or a carriage for traversing horizontally. ()

aa. The following requirements apply to ground rigged davit systems: the point of suspension shall not exceed three hundred (300) feet above a safe surface; Guide system(s) shall be provided which meet the requirements of this section; access and egress to and from the working platform shall only be from a safe surface below the point of suspension. ()

bb. A rotating davit shall not require a horizontal force in excess of forty (40) pounds per person to initiate a rotating movement. ()

cc. The following requirements shall apply to transportable davits: a davit or part of a davit weighing more than eighty (80) pounds shall be provided with a means for its transport, which shall keep the center of gravity of the davit at or below thirty-six (36) inches above the safe surface during transport; a davit shall be provided with a pivoting socket or with a base that will allow the insertion or removal of a davit at a position of not more than thirty-five (35) degrees above the horizontal, with the complete davit inboard of the building face being serviced; and means shall be provided to lock the davit to its socket or base before it is used to suspend the platform. ()

06. Hoisting Machines: ()

a. Raising and lowering of suspended or supported equipment shall be performed only by a hoisting machine. ()

b. Each hoisting machine shall be capable of arresting any over speed descent of the load. ()

c. Each hoisting machine shall be powered only by air, electric, or hydraulic sources. ()

- d. Flammable liquids shall not be carried on the working platform. ()
- e. Each hoisting machine shall be capable of raising or lowering one hundred and twenty-five percent (125%) of the rated load of the hoist. ()
- f. Moving parts shall be enclosed or guarded in compliance with IDAPA 17.10.27.250.04. ()
- g. Winding drums, traction drums, and sheaves and directional sheaves used in conjunction with hoisting machines shall be compatible with, and sized for, the wire rope used. ()
- h. Each winding drum shall be provided with a positive means of attaching the wire rope to the drum. The attachment shall be capable of developing at least four (4) times the rated load of the hoist. ()
- i. Each hoisting machine shall be provided with a primary brake and at least one independent secondary brake, each capable of stopping and holding not less than one hundred and twenty-five percent (125%) of the lifting capacity of the hoist. ()
- j. The primary brake shall be directly connected to the drive train of the hoisting machine, and shall not be connected through belts, chains, clutches, or set screw type devices. The brake shall automatically set when power to the prime mover is interrupted. ()
- k. The secondary brake shall be an automatic emergency type of brake that, if actuated during each stopping cycle, shall not engage before the hoist is stopped by the primary brake. ()
- l. When a secondary brake is actuated, it shall stop and hold the platform within a vertical distance of twenty-four (24) inches. ()
- m. Any component of a hoisting machine which requires lubrication for its protection and proper functioning shall be provided with a means for that lubrication to be applied. ()
07. Suspended Equipment: ()
- a. Each suspended unit component, except suspension ropes and guardrail systems, shall be capable of supporting, without failure, at least four (4) times the maximum intended live load applied or transmitted to that component. ()
- b. Each suspended unit component shall be constructed of materials that will withstand anticipated weather conditions. ()
- c. Each suspended unit shall be provided with a load rating plate, conspicuously located, stating the unit weight and rated load of the suspended unit. ()
- d. When the suspension points on a suspended unit are not at the unit ends, the unit shall be capable of remaining continuously stable under all conditions of use and position of the live load, and shall maintain at least a 1.5 to 1 stability factor against unit upset. ()
- e. Guide rollers, guide shoes, or building face rollers shall be provided, and shall compensate for variations in building dimensions and for minor horizontal out of level variations of each suspended unit. ()
- f. Each working platform of a suspended unit shall be secured to the building facade by one (1) or more of the following methods, or by an equivalent method: continuous engagement to building anchors; intermittent engagement to building anchors; button guide engagement; or angulated roping and building face rollers as provide for in this section. ()
- g. Each working platform of a suspended unit shall be provided with a guardrail on all sides which shall meet the following requirements: the system shall consist of a top guardrail, midrail, and a toeboard; the top

guardrail shall not be less than thirty-six (36) inches high and shall be able to withstand a one hundred (100) pound force in any downward or outward direction; the midrail shall be able to withstand at least seventy-five (75) pound force in any downward or outward direction; and the areas between the guardrail and toe board on the ends and outboard side, and the area between the guardrail and toeboard on the inboard side, shall be closed with a material that is capable of withstanding a load of one hundred (100) pounds applied horizontally over any area of one (1) square foot. The material shall have all openings small enough to reject passage of life lines and potential falling object which may be hazardous to persons below; toeboards shall be capable of withstanding, without failure, a force of at least fifty (50) pounds applied in any downward or horizontal direction at any point along the toeboard; toeboards shall be four (4) inches minimum in length from their top edge to the level of the platform floor; toeboards shall be securely fastened in place at the outermost edge of the platform and have no more than one-half (1/2) inch clearance above the platform floor; and toeboards shall be solid or with an opening not over one (1) inch in the greatest dimension. ()

08. Two (2) and four (4) Point Suspended Working Platforms: ()

a. Two (2) and four (4) point suspended working platforms shall not be less than twenty-four (24) inches wide and shall be provided with a minimum of a twelve (12) inch wide passage at or past any obstruction on the platform. ()

b. The flooring shall be of a slip resistant type and shall contain no opening that would allow the passage of life lines, cables, and other potential falling objects. If a larger opening is provided, it shall be protected by placing a material under the opening which shall prevent the passage of life lines, cables and potential falling objects. ()

c. The working platform shall be provided with a means of suspension that will restrict the platforms inboard to outboard roll about its longitudinal axis to a maximum of fifteen (15) degrees from a horizontal plane when moving the live load from the inboard to the outboard side of the platform. ()

d. Any cable suspended from above the platform shall be provided with a means for storage to prevent accumulation of the cable on the floor of the platform. ()

e. All operating controls for the vertical travel of the platform shall be of the continuous pressure type, and shall be located on the platform. ()

f. Each operating station of every working platform shall be provided with a means of interrupting the power supply to all hoist motors to stop any further powered ascent or decent of the platform. ()

g. The maximum rated speed of the platform shall not exceed fifty (50) feet per minute with single speed hoists, nor seventy-five (75) feet per minute with multi speed hoists. ()

h. Provisions shall be made for securing all tools, water tanks, and other accessories to prevent their movement or accumulation on the floor of the platform. ()

i. Portable fire extinguishers shall be provided and securely attached on all working platforms.()

j. Access to and egress from a working platform, except for those that land directly on a safe surface, shall be provided by stairs, ladders, platforms and runways conforming to this standard. Access gates shall be self closing and self latching. ()

k. The means of access to or egress from a working platform which is forty-eight (48) inches or more above a safe surface shall be provided with a guardrail system or ladder that conform to the provisions of this standard. ()

l. The platform shall be provided with a secondary wire rope suspension system if the platform contains overhead structures which restrict the emergency egress of employees. A horizontal lifeline or a direct connection anchorage shall be provided, as part of a fall arrest system which meets the requirements of IDAPA 17.10.10.074. ()

m. A vertical lifeline shall be provided as part of a fall arrest system which meets the requirements for fall protection for each employee on a working platform suspended by two (2) or more wire ropes, if the failure of one wire rope or suspension attachment will cause the platform to upset. If a secondary wire rope or suspension is used, vertical lifelines are not required for the fall arrest system, provided that each employee is attached to a horizontal lifeline anchored to the platform. ()

n. An emergency electric operating device shall be provided on roof powered platforms near the hoisting machine for use in the event of failure of the normal operating device located on the working platform, or failure of the cable connected to the platform. The emergency electric operating device shall be mounted in a secured compartment, and the compartment shall be labeled with instructions for use. A means for opening the compartment shall be mounted in a break glass receptacle located near the emergency electric operating device or in an equivalent secure and accessible location. ()

09. Single Point Suspended Working Platforms: ()

a. The requirements of IDAPA 17.10.10.075.08.a. through 075.08.m. shall also apply to a single point working platform. ()

b. Each single point suspended platform shall be provided with a secondary wire rope suspension system, which will prevent the working platform from falling should there be a failure of the primary means of support, or if the platform contains overhead structures which restrict the egress of the employees. A horizontal life line or a direct connection anchorage shall be provided, as part of a fall arrest system which meets the requirements of section 074 of this standard, for each employee on the platform. ()

10. Ground Rigged Working Platforms: ()

a. Ground rigged working platforms shall comply with all the requirements of IDAPA 17.10.10.075.08.a. through 075.08.m. ()

b. After each day's use, the power supply within the building shall be disconnected from a ground rigged working platform, and the platform shall be either disengaged from its suspension points or secured and stored at grade. ()

11. Intermittently Stabilized Platforms: ()

a. Intermittently stabilized working platforms shall comply with all the requirements of IDAPA 17.10.10.075.08.a. through 075.08.m. ()

b. Each stabilizer tie shall be equipped with a quick connect quick disconnect device which cannot be accidentally disengaged, for attachment to the building anchor, and shall be resistant to adverse environmental conditions. ()

c. The platform shall be provided with a stopping device that will interrupt the hoist power supply in the event the platform contacts a stabilizer tie during its ascent. ()

d. Building face rollers shall not be placed at the anchor setting if exterior anchors are used on the building face. ()

e. Stabilizer ties used on intermittently stabilized platforms shall allow for the specific attachment length needed to effect the predetermined angulation of the suspended wire rope. The specific attachment length shall be maintained at all building anchor locations. ()

f. The platform shall be in continuous contact with the face of the building during ascent and descent. ()

g. The attachment and removal of stabilizer ties shall not require the horizontal movement of the

platform. ()

h. The platform mounted equipment and its suspension wire ropes shall not be physically damaged by the loads from the stabilizer tie or its building anchor. The platform, platform mounted equipment and wire ropes shall be able to withstand a load that is at least twice the ultimate strength of the stabilizer tie. ()

12. Button Guide Stabilized Platforms: ()

a. Button guide stabilized working platforms shall comply with all the requirements of IDAPA 17.10.10.075.08.a. through 075.08.m. ()

b. Each guide track on the platform shall engage a minimum of two (2) guide buttons during any vertical travel of the platform following the initial button engagement. ()

c. Each guide track on a platform that is part of a roof rigged system shall be provided with a storage position on the platform. ()

d. Each guide track on the platform shall be sufficiently maneuverable by platform occupants to permit easy engagement of the guide buttons, and easy movement into and out of its storage position on the platform. ()

e. Two (2) guide tracks shall be mounted on the platform and shall provide continuous contact with the building face. ()

f. The load carrying components of the button guide stabilization system which transmit the load into the platform shall be capable of supporting the weight of the platform, or provision shall be made in the guide track connectors or platform attachments to prevent the weight of the platform from being transmitted to the platform attachments. ()

13. Supported Equipment: ()

a. Supported equipment shall maintain a vertical position in respect to the face of the building by means other than friction. ()

b. Cog wheels or equivalent means shall be incorporated to provide climbing traction between the supported equipment and the building guides. Additional guide wheels or shoes shall be incorporated as may be necessary to ensure that the drive wheels are continuously held in positive engagement with the building guides. ()

c. Launch guide mullions indexed to the building guides and retained in alignment with the building guides shall be used to align drive wheels entering the building guides. ()

d. Manned platforms used on supported equipment shall comply with the requirements of IDAPA 17.10.10.075.08.a., 075.08.b., and 075.08.d. through 075.08.k. ()

14. Suspension Wire Ropes and Rope Connections: ()

a. Each specific installation shall use suspension wire ropes or combination cable and connections meeting the specification recommendation by the manufacture of the hoisting machine used. Connections shall be capable of developing at least eighty (80) percent of the rated breaking strength of the wire rope. ()

b. Each suspension rope shall have a design factor of at least ten (10). ()

c. Suspension wire rope grade shall be at least improved plow steel or equivalent. ()

d. Suspension wire ropes shall be sized to conform with the required design factor, but shall not be less than five sixteenth (5/16) inch in diameter. ()

- e. No more than one (1) reverse bend in six (6) wire rope lays shall be permitted. ()
- f. A corrosion resistant tag shall be securely attached to one (1) of the wire rope fastenings when a suspension wire rope is to be used at a specific location and will remain in that location. This tag shall bear the following wire rope data: the diameter (inches and/or mm); construction classification; whether non preformed or performed; the grade of material; the manufacturer's rated strength; the manufacturer's name; the month and year the ropes were installed; and the name of the person or company which installed the ropes. ()
- g. A new tag shall be installed at each rope renewal. ()
- h. The original tag shall be stamped with the date of the resocketing, or the original tag shall be retained and a supplemental tag shall be provided when ropes are resocketed. The supplemental tag shall show the date of resocketing and the name of the person or company that resocketed the rope. ()
- i. Winding drum type hoists shall contain at least three (3) raps of the suspension wire rope on the drum when the suspended unit has reached the lowest possible point of its vertical travel. ()
- j. Traction drum and sheave type hoists shall be provided with a wire rope of sufficient length to reach the lowest possible point of vertical travel of the suspended unit, and an additional length of the wire rope of at least four (4) feet. ()
- k. The lengthening or repairing of suspension wire ropes is prohibited. ()
- l. Rabbitted fastenings for suspension wire rope are prohibited.()
15. Control Circuits, Power Circuits, and Their Components: ()
- a. Electrical wiring and equipment shall comply with IDAPA 17.10.17.150, except as otherwise required by this section. ()
- b. Electrical runway conductor systems shall be of a type designed for use in exterior locations, and shall be located so that they do not come into contact with accumulated snow or water. ()
- c. Cables shall be protected against damage resulting from over tensioning or from other causes. ()
- d. Devices shall be included in the control system for the equipment which will provide protection against electrical overloads, three (3) phase reversal and phase failure. The control system shall have a separate method, independent of the direction control circuit, for breaking the power circuit in case of an emergency or malfunction. ()
- e. Suspended or supported equipment shall have a control system which will require the operator of the equipment to follow predetermined procedures. ()
- f. On installations where the carriage does not have a stability of at least four (4) against overturning, electrical contact(s) shall be provided and so connected that the operating devices for the suspended or supported equipment shall be operative only when the carriage is located and mechanically retained at an established operating point. ()
- g. Overload protection shall be provided in the hoisting or suspension system to protect against the equipment operating in the "UP" direction with a load in excess of one hundred and twenty-five percent (125%) of the rated load of the platform. ()
- h. An automatic detector shall be provided for each suspension point that will interrupt power to all hoisting motors for travel in the "DOWN" direction, and apply the primary brakes if any suspension wire rope becomes slack. A continuous pressure rigging bypass switch designed for use during rigging is permitted. This switch

shall only be used during rigging. ()

i. Upper and lower directional switches designed to prevent the travel of suspended units beyond safe upward and downward levels shall be provided. ()

j. Emergency stop switches shall be provided on remote controlled, roof powered manned platforms adjacent to each control station on the platform. ()

k. Cables which are in constant tension shall have overload devices which will prevent the tension in the cable from interfering with the load limiting device required in IDAPA 17.10.10.075.15.g., or with the platform roll limiting device required in IDAPA 17.10.10.075.15.h. The setting of these devices shall be coordinated with other overload settings at the time of design of the system, and shall be clearly indicated on or near the device. The device shall interrupt the equipment travel in the "DOWN" direction. ()

16. Inspection and Tests: ()

a. All completed building maintenance equipment installations shall be inspected and tested in the field before being placed in initial service to determine that all parts of the installation conform to applicable requirements of this standard, and that all safety and operating equipment is functioning as required. A similar inspection and test shall be made following any major alteration to an existing installation. No hoist in an installation shall be subjected to a load in excess of one hundred twenty-five percent (125%) of its rated load. ()

b. Related building supporting structures shall undergo periodic inspection by a competent person at intervals not exceeding twelve (12) months. ()

c. All parts of the equipment including control systems shall be inspected, and where necessary, tested by a competent person at intervals specified by the manufacturer/supplier, but not to exceed twelve (12) months, to determine that they are in safe operating condition. Parts subject to wear, such as wire ropes, bearings, gears, and governors shall be inspected and/or tested to determine that they have not worn to such an extent as to affect the safe operation of the installation. ()

d. The building owner shall keep a certification record of each inspection and test required under this subsection. The certification record shall include the date of the inspection, the signature of the person who performed the inspection, and the number, or other identifier, of the building support structure and equipment which was inspected. This certification record shall be kept readily available for review by representatives of the Department and by employers that may be required to use the equipment. ()

e. Working platforms and their components shall be inspected by the employer for visible defects before every use and after each occurrence which could affect the platform's structural integrity. ()

f. A maintenance inspection and, where necessary, a test shall be made of each platform installation every thirty (30) days, or where the work cycle is more than thirty (30) days such inspection and/or test shall be made prior to each work cycle. This inspection and test shall follow procedures recommended by the manufacture, and shall be made by a competent person. ()

g. Governors and secondary brakes shall be inspected and tested at intervals specified by the manufacture/supplier but not to exceed every twelve (12) months. ()

h. The results of the inspection and test shall confirm that the initiating device for the secondary braking system operates at the proper over speed. ()

i. The results of the inspection and test shall confirm that the secondary brake is functioning properly. ()

j. If any hoisting machine or initiating device for the secondary brake system is removed from the equipment for testing, all reinstalled and directly related components shall be reinspected prior to returning the equipment installed to service. ()

- k. Inspection of governors and secondary brakes shall be performed by a competent person. ()
- l. The secondary brake governor and actuation device shall be tested before each day's use. Where testing is not feasible, a visual inspection of the break shall be made instead to ensure that it is free to operate. ()
- m. Suspension wire rope shall be maintained and used in accordance with procedures recommended by the wire rope manufacturer. ()
- n. A thorough inspection of suspension wire ropes in service shall be made once a month. Suspension wire ropes that have been inactive for thirty (30) days or longer shall have a thorough inspection before they are placed into service. These thorough inspections of suspension wire ropes shall be performed by a competent person. ()
- o. Suspension wire rope shall be maintained and used in accordance with procedures recommended by the wire rope manufacturer. ()
- p. Suspension wire rope shall be inspected by a competent person for visible defects and gross damage to the rope before every use after each occurrence which might affect the wire rope's integrity. ()
- q. The need for replacement of a suspension wire rope shall be determined by inspection and shall be based on the condition of the wire rope. Any of the following conditions or combination of conditions will be cause for removal of the wire rope: broken wires exceeding three (3) wires in one (1) strand or six (6) wires in one (1) rope lay; distortion of rope structure such as would result from crushing or kinking; evidence of heat damage; evidence of rope deterioration from corrosion; a broken wire within eighteen (18) inches of end attachments; noticeable rusting and pitting; evidence of core failure (a lengthening of rope lay, protrusion of the rope core, and a reduction in rope diameter suggests core failure); or more than one (1) valley break (broken wire); outer wire wear exceed one third (1/3) of the original outer wire diameter; and any other condition which the competent person determines has significantly affected the integrity of the rope. ()
- r. Before lowering personnel below the top elevation of the building, the hoist shall be tested each day in the lifting direction with the intended load to make certain it has sufficient capacity to raise the personnel back to the boarding level. ()
17. Maintenance: ()
- a. All parts of the equipment affecting safe operating shall be maintained in proper working order so that they may perform the functions for which they were intended. The equipment shall be taken out of service when it is not in proper working order. ()
- b. Control or power contactors and relays shall be kept clean. ()
- c. All other parts shall be kept clean if their proper functioning would be affected by the presence of dirt or other contaminants. ()
- d. Hoisting ropes utilizing poured socket fastenings shall be resocketed at the non drum ends at intervals not exceeding 24 months. In resocketing the ropes, a sufficient length shall be cut from the end of the rope to remove damaged or fatigued portions. ()
- e. Resocketed ropes shall conform to the requirements of IDAPA 17.10.10.075.19. ()
- f. Limit switches affected by resocketed ropes shall be reset, if necessary. ()
- g. The hoisting ropes shall be reshackled at the nondrum ends at intervals not exceeding twenty-four (24) months. When reshackling the ropes, a sufficient length shall be cut from the end of the rope to remove damaged or fatigued portions. ()

h. Roof track systems, tie downs, or similar equipment shall be maintained in proper working order so that they perform the function for which they were intended. ()

i. "T" rails, indented mullions, or equivalent guides located in the face of a building shall be maintained in proper working order so that they perform the functions for which they were intended. Brackets for cable stabilizers shall similarly be maintained in proper working order. ()

j. No person shall render a required safety device or electrical protective device inoperative, except as necessary for tests, inspections, and maintenance. Immediately upon completion of such tests, inspections and maintenance, the device shall be restored to its normal operating condition. ()

18. Training: ()

a. Working platforms shall be operated only by persons who are proficient in the operation, safe use and inspection of the particular working platform to be operated. ()

b. All employees who operate working platforms shall be trained in the following: recognition of, and preventive measures for, the safety hazards associated with their individual work tasks; general recognition and prevention of safety hazards associated with the use of working platforms, including the provisions in the section relating to the particular working platform to be operated; emergency action plan procedures required in IDAPA 17.10.10.075.04.t.; work procedures as required by IDAPA 17.10.10.075.18.d.; and personal fall arrest system inspection, care, use, and system performance. ()

c. Training of employees in the operation and inspection of working platforms shall be done by a competent person. ()

d. Written work procedures for the operation, safe use, and inspection of working platforms shall be provided for employee training. Pictorial methods of construction, may be used, in lieu of written work procedures, if employee communication is improved using this method. The operating manuals supplied by manufacturers for platform system components can serve as the basis for these procedures. ()

19. Use: ()

a. Working platforms shall not be loaded in excess of the rated load, as stated on the platform load rating plate. ()

b. Employees shall be prohibited from working on snow, ice, or other slippery material covering platforms, except for the removal of such materials. ()

c. Adequate precautions shall be taken to protect the platform, wire ropes, and life lines from damage due to acids or other corrosive substances, in accordance with the recommendations of the corrosive substance producer, supplier, platform manufacturer or other equivalent information sources. Platform members which have been exposed to acids or other corrosive substances shall be washed down with a neutralizing solution, at a frequency recommended by the corrosive substance producer or supplier. ()

d. Platform members, wire ropes, and life lines shall be protected when using a heat producing process. Wire ropes and life lines which have been contacted by heat producing process shall be considered to be permanently damaged and shall not be used. ()

e. The platform shall not be operated in winds in excess of twenty-five (25) miles per hour except to move it from an operating to a storage position. Wind speed shall be determined based on the best available information, which includes on site anemometer readings and local weather forecasts which predict wind velocities for the area. ()

f. On exterior installations, an anemometer shall be mounted on the platform to provide information of on site wind velocities prior to and during the use of the platform. The anemometer may be a portable (hand held) unit which is temporarily mounted during platform use. ()

g. Tools, materials, and debris not related to the work in progress shall not be allowed to accumulate on platforms. Stabilizer ties shall be locked so as to allow unencumbered passage along the full length of the platform and shall be of such length so as to become entangled in rollers, hoists, or other machinery. ()

076. VEHICLE MOUNTED ELEVATING AND ROTATING WORK PLATFORMS.

01. Scope: ()

a. Vehicle mounted elevating and rotating work platforms for building maintenance shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. ()

b. The requirements of this section do not apply to firefighting equipment or to the vehicles upon which aerial devices are mounted, except with respect to the requirement that a vehicle be a stable support for the aerial device. ()

02. Definitions Applicable to this Section: ()

a. Aerial Device is any vehicle mounted device, telescoping or articulating or both, which is used to position workmen and/or materials. ()

b. Aerial Ladder is an aerial device consisting of a single or multiple section extensible ladder. ()

c. Articulating Boom Platform an aerial device with two (2) or more hinged boom sections. ()

d. Extensible Boom Platform is an aerial device (except ladders) with a telescopic or extensible boom. Telescopic derricks with personnel platform attachments shall be considered to be extensible boom platforms when used with a personnel platform. ()

e. Electric Line Truck is a truck used to transport men, tools and materials, and to serve as a traveling workshop for electric power line construction and maintenance work. It is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes and elevating material and/or personnel. ()

f. Insulated Aerial Device is an aerial device designed for work on or near energized lines and apparatus. ()

g. Mobile Unit is a combination of an aerial device, its vehicle and related equipment. ()

h. Platform is any personnel carrying device (basket or bucket) which is a component of an aerial device. ()

i. Vehicle is any carrier that is not manually propelled. ()

j. Vertical tower is an aerial device designed to elevate a platform in a substantially vertical axis. ()

03. General Requirements: ()

a. Unless otherwise provided in this section, aerial devices (aerial lifts) acquired on or after July 1, 1975, shall be designed and constructed in conformance with the applicable requirements of the American National Standard for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2, including appendix. Aerial lifts acquired for use before July 1, 1975 which do not meet the requirements of ANSI A92.2, may not be used after July 1, 1976 unless they shall have been modified so as to conform with the applicable design and construction requirements of ANSI A92.2 Aerial devices include the following types of vehicle mounted aerial devices used to elevate personnel and/or material to job sites above ground: extensible boom platforms; aerial ladders; articulating boom platforms; vertical towers; and a combination of any of the above. ()

b. Aerial equipment may be made of metal, wood fiberglass reinforced plastic (FRP), or other material; may be powered or manually operated and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis. ()

c. Aerial lifts may be "field modified" for uses other than those intended by the manufacturer, provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2 and this section, and to be at least safe as the equipment was before modification. ()

d. When operating aerial lifts proximate to, under, over, by or near electric power lines, the requirements of IDAPA 17.10.17.150 shall apply. ()

e. The following clearances shall be maintained: for lines rated at 50kV or less, the minimum clearance between the lines and any part of the aerial lift shall be at least ten (10) feet; when the lines are rated in excess of 50kV, the minimum clearance between the lines and any part of the aerial lift shall be at least ten (10) feet plus four-tenths (0.4) inch for each kilovolt in excess of 50kV, or twice the length of the line insulator, but never less than ten (10) feet. ()

f. Where the electric power transmission or distribution lines have been de energized and visibly grounded at the point of work, or where insulating barriers, not a part of or an attachment to the aerial lift, have been erected to prevent physical contact with the lines. ()

g. Proximity warning devices may be used but not in lieu of meeting the requirements contained in this section. ()

h. The owner of the lines or his authorized representative shall be notified and provided with all pertinent information before the commencement of operations near electric lines. ()

i. Any overhead wire shall be considered to be an energized line until the owner of the line or his authorized representative states that it is deenergized. ()

04. Specific Requirements. ()

a. Before ladder trucks and tower trucks are moved for highway travel, aerial ladders shall be secured in the lower traveling position by the locking device above the truck cab, and the manually operated device at the base of the ladder, or by other equally effective means (e.g. cradles, which prevent rotation of the ladder in combination with positive acting linear actuators). ()

b. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. ()

c. Only trained persons shall operate an aerial lift. ()

d. Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted. ()

e. Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position. ()

f. A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift. ()

g. Boom and basket load limits specified by the manufacturer shall not be exceeded. ()

h. The brakes shall be set, and outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline. ()

i. An aerial lift truck may not be moved when the boom is elevated in a working position with personnel in the basket, except for equipment which is specifically designed for this type of operation. ()

j. Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift except in case of emergency. ()

k. Climbers shall not be worn while performing work from an aerial lift. ()

l. Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position, except as provided in IDAPA 17.10.10.076.04.i. ()

m. Electrical tests shall be made in conformance with the requirements of ANSI A92.2. However, equivalent DC voltage tests may be used in lieu of the AC voltage test specified in ANSI A92.2. DC voltage tests which are approved by the manufacturer or equivalent entity shall be considered an equivalent test for the purpose of this subsection. ()

n. All critical hydraulic and pneumatic components shall comply with the provisions of the American National Standards Institute Standard ANSI A92.2, Bursting Safety Factor. Critical Components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of at least two (2) to one (1). ()

o. Welding Standards. All welding shall conform to the following Automotive Welding Society (AWS) Standards, as applicable: Standard Qualification Procedure AWS B3.0 41; Recommended Practices for Automotive Welding Design, AWS D8.4; Standard Qualification for Welding Procedures and Welders for Piping and Tubing AWS D10.9; or Specifications for Welding Highway and Railway Bridges, AWS D2.0. ()

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