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**IDAPA 20
TITLE 06
Chapter 04**

**20.06.04 - FOREST PRODUCTS MEASUREMENT FOR
THE PURPOSE OF PAYMENT FOR LOGGING OR
HAULING LOGGED FOREST PRODUCTS ONLY**

000. (RESERVED).

001. TITLE AND SCOPE.

01. Applicability. These rules shall pertain only to forest products measurement for the purpose of payment for logging or hauling logged forest products. (2-12-91)

02. Measurement. For the purpose of payment for logging or hauling logged forest products only, forest products shall be measured by gross weight, or by gross volume converted to gross decimal "C". Measurement may be determined by a sampling process. (2-12-91)

002. -- 099. (RESERVED).

100. UNITS OF MEASURE.

01. Acceptable Units of Measure. Acceptable units of measure shall include only the following: (2-12-91)

a. Gross weight. (2-12-91)

b. Scribner decimal C gross scale as determined in accordance with these rules. (2-12-91)

c. Other gross volume measurements converted to Scribner decimal "C" in accordance with Rule 400. (2-12-91)

101. -- 199. (RESERVED).

200. GROSS SCALE DETERMINATION - LOGS IN ROUND FORM.

01. Scribner Decimal "C". (1-1-95)

a. The gross scale shall be determined by the volume obtained from the log rule after measuring and applying the scaling length and scaling diameter, in accordance with the Scribner decimal "C" volume table as listed in the National Forest Log Scaling Handbook, Appendix, Table II, EXCEPT that the volumes listed in Appendix, Table I of these rules shall apply to diameter classes 3" through 8" inclusive. (1-1-95)

b. Scaling length shall be determined by the length of the scaling cylinder (as explained in the National Forest Log Scaling Handbook) plus a maximum trim allowance of 6" per segment. Length determination shall recognize logs measuring from 8'1" to 20'6" as single-segment logs; from 20'7" to 41'0" as two-segment logs; from 41'1" to 61'6" as three-segment logs, etc. Refer to Appendix, Table III of these rules. (1-1-95)

c. Scaling diameters shall be determined by the methods outlined in the National Forest Log Scaling Handbook. Scaling diameters are measured from a minimum top diameter of 5.51" (6" Scribner class). Topwood attached that is smaller than the minimum top diameter of 5.51" shall be disregarded EXCEPT when a written logging and hauling agreement specifies a smaller minimum top diameter. (1-1-95)

d. Mid-point diameters on second-cut, multi-segment logs are determined on the basis of calculated taper. (1-1-95)

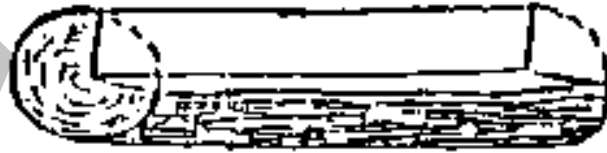
e. Mid-point diameters on butt-cut, multi-segment logs shall be determined by the methods stated in Appendix, Table II of these rules. (1-1-95)

201. -- 299. (RESERVED).

300. GROSS SCALE DETERMINATION. LOGS IN CEDAR PRODUCTS OR SLAB MATERIAL FORM.

01. Scribner Decimal "C". (1-1-95)
- a. Definitions. (1-1-95)
- i. Logs in cedar products form means those split or intentionally manufactured logs which are half of a round log or greater and have a merchantable size slab split lengthwise and no longer attached to the log. Cedar products form logs usually occur on cedar species logs, but may also be applied to other species of logs. (1-1-95)
- ii. Logs in slab material form means portions of logs created when a log splits lengthwise or is intentionally manufactured in such a manner. (1-1-95)
- iii. Merchantable size slab means a portion of a log that is intentionally manufactured and meets minimum size criteria as described hereinafter by these rules, except when a written logging and hauling agreement specifies smaller size criteria. (1-1-95)
- iv. Intentionally manufactured means as may be agreed to in a written logging and hauling agreement, or as may occur using reasonable and prudent logging practices. (1-1-95)
- b. Volume and length determinations. (1-1-95)
- i. Gross scale volumes shall be determined in accordance with the Scribner decimal "C" volume table, Appendix, Table II, of the National Forest Log Scaling Handbook, and in accordance with mensuration criteria hereinafter described. (1-1-95)
- ii. Scaling length determination shall be determined in similar manner to that used for logs in round form. (1-1-95)
- c. Diameter determinations. (1-1-95)
- i. Diameter measure for logs in cedar products form shall be determined in similar manner to that used for logs in round form. For cedar species logs the minimum top diameter is fifteen (15) inches as measured using the Coconino-type scalestick. For other species logs the minimum top diameter is twenty-one (21) inches as measured using the Coconino-type scalestick. (1-1-95)
- ii. Diameter measure for logs in slab material form shall be determined in accordance with mensuration criteria hereinafter described. For cedar logs, a minimum size of four (4) inches (Scribner class measure) shell thickness by five (5) inches (Scribner class measure) width as determined in accordance with these rules. For all other species of logs, a minimum size of six (6) inches (Scribner class measure) by six (6) inches (Scribner class measure) as determined in accordance with these rules. (1-1-95)
- iii. Midpoint diameters on logs in cedar products or slab material form that are second-cut, multi-segment logs shall be determined on the basis of calculated taper. (1-1-95)
- iv. Midpoint diameters on logs in cedar products or slab material form that are butt-cut, multi-segment logs shall be determined by the methods stated in Appendix, Table II of these rules. (1-1-95)
- d. Slabs. Logging of cedar products often results in split logs, producing slabs. The following rules shall govern gross volume determination of pieces not in round form: (2-12-91)
- i. Logs which are half of a round log or greater shall be gross scaled according to the portion of the log which is existent. See Diagram I of these rules.

DIAGRAM I



(16' scaling length, 20" scaling diameter)

If this were an entire log intact (i.e. no slab missing) it would gross scale 28 decimal "C". However, since 1/4 of the log is missing, the gross scale would 1/4 less or 21 decimal "C". This is determined by figuring:

$$1/4 \times 16' = 4' \quad 16' - 4' = 12'$$

The volume for 12' with a 20" scaling diameter is 21 decimal "C". Estimates for the slab missing are the same as those used for pie-cut deductions, such as 1/16, 1/8, 1/6, 1/4, 1/3, etc. (1-1-95)

ii. Logs less than half of a round log (slabs) shall be gross scaled as follows: (See Diagram II of these rules.)

Mentally "square up" the sound wood within the slab; in other words, figure an approximate square or rectangle that can be shaped on the small end of the slab. For example:

DIAGRAM II



-the average width is 10"

-the average shell thickness is 6"

-this approximates a rectangle of 6" x 10"

Use the following formula to determine volume:

$W \times H \times (L/16) =$ volume in board feet (round this to the nearest ten bd. ft. to arrive as Scribner decimal "C" volume; five bd. ft. or more rounds up.)

W = the width of the slab in inches as measured using a Coconino-type scalestick.

H = the shell thickness of the slab in inches as measured using a Coconino-type scalestick.

L = the scaling length of the slab in feet.

If we use our previous example (assuming a slab length of 16')

$$10 \times 6 \times 16/16 = 60$$

This slab would gross scale 60 board feet or 6 decimal "C". (1-1-95)

- iii. Slabs are always measured on the small end. (2-12-91)
- iv. Length measurement for split logs and slabs shall be determined in the same manner as for logs in round form. (2-12-91)
- v. Cord measurement shall be used on material shorter than eight feet, one inch (8'1") in length. (2-12-91)
- vi. A piece count measure may be used on posts, rails, and shake bolts. (2-12-91)

301. -- 399. (RESERVED).

400. CONVERSION FACTORS FOR OTHER GROSS VOLUME MEASUREMENTS.

01. Conversion to Gross Decimal "C". All gross volume measurements determined in a manner other than Scribner decimal "C" shall be converted to an equivalent Scribner decimal "C" gross scale. (1-1-95)

02. Conversion Factors. Standard converting factors as listed in the Appendix, Table XV, of the National Forest Log Scaling Handbook shall be considered acceptable (see Appendix, Table IV of these rules). (1-1-95)

03. Other Conversion Factors. Conversion factors not listed in the National Forest Log Scaling Handbook shall be considered and determined by the Board of Scaling Practices upon written request. (2-12-91)

401. -- 499. (RESERVED).

500. NATIONAL FOREST LOG SCALING HANDBOOK.

All references to the National Forest Log Scaling Handbook contained in these rules refer to the May, 1985, Amendment 6 edition. (2-12-91)

501. -- 599. (RESERVED).

600. SCALING AGREEMENTS.

01. Rules Not to Limit Agreements. These Rules shall in no way be considered as a constraint to the basis for determining board foot volumes between parties to a scaling agreement, provided that the method of scaling the various forest products for commercial purposes is stated in writing, and provided further that the scaling agreement is not for the purpose of payment for logging or hauling logged forest products only. (2-12-91)

601. -- 609. (RESERVED).

610. DETERMINATION OF COMPLIANCE.

- 01. Scribner Decimal "C". (1-1-95)
 - a. These rules enumerate the mensuration criteria that shall be used in determining gross scale. (1-1-95)
 - b. Notwithstanding the mensuration criteria contained in these rules, compliance shall be determined to have been met when check scale results on gross scale comparisons are within allowable standards of variation as contained in these rules. (1-1-95)

611. -- 619. (RESERVED).

620. CHECK SCALING AND STANDARDS OF VARIATION.

01. Authority to Check Scale. Check scaling for mandatory gross scale recording requirement may be performed by the board to ascertain licensed scaler's proficiency and/or compliance with these rules. The criteria for the check scale shall be: (1-1-95)

- a. Scribner Decimal "C". (1-1-95)
- i. A valid check scale shall consist of a minimum of fifty (50) pieces with a minimum volume of ten thousand (10,000) board feet as determined in accordance with these rules. (1-1-95)
- ii. Check scale comparisons are based on total recorded scale. The check scaler's scale is used as the basis for determining percentage variation. (1-1-95)
- iii. For logs in round form the allowable standard shall be plus or minus two percent (2.0%). (1-1-95)
- iv. For logs in cedar products or slab material form the allowable standard shall be plus or minus five percent (5.0%). (1-1-95)

v. For check scales involving both logs in round form and logs in cedar products or slab material form, the allowable standard shall be determined by the following formula:

$$OAV = ((a \times C) + (b \times D)) / (C + D)$$

OAV	=	overall allowable % variation
a	=	allowable % variation for logs in round form
b	=	allowable % variation for logs in cedar products or slab material form
C	=	check scaler's scale for logs in round form
D	=	check scaler's scale for logs in cedar products or slab material form

(1-1-95)

621. -- 699. (RESERVED).

700. PENALTIES.

01. Failure to Comply. Failure to comply with these rules shall constitute a violation of the Standard Log Scaling Law of Idaho. Penalties for non-compliance shall be in accordance with title 38, chapter 12, Sections 38-1220A and 38-1221. (2-12-91)

701. -- 709. (RESERVED).

710. RECORDING MEASUREMENTS ON SCALE TICKETS.

All scalers, as defined in Sections 38-1201 and 38-1202, Idaho Code, shall record on the scale ticket a combination of scale data for each log scaled from which both gross and net scale measurements may be derived. Scale tickets are any written record of scale measurements. All scale tickets shall show the gross scale volume as determined in accordance with Chapter 4 Rules. (1-1-95)

711. -- 999. (RESERVED).

APPENDIX

- I. Table I -- Volume Table
- II. Table II -- Mid-point Taper on Multi-segment Butt Logs
- III. Table III -- Log Length Table
- IV. Standard Converting Factors

TABLE I
Volume Table

Diameter in inches	Log Length in Feet																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3										1	1	1	1	1	1	1	1
4					1	1	1	1	1	1	1	1	1	1	1	1	1
5		1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
6		1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
7	1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3
8	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3

TABLE II
Mid-point Taper on Multi-segment Butt Logs

1. North Idaho Area (north of the Salmon River, and including the northeastern Washington area bounded by the Snake River on the south, to the Columbia River, north to the Okanogan River, north to Canada) ---

The basis for determining mid-point taper shall be the same as that established by Region 1 of the United States Forest Service.

2. Southwest Idaho Area ---

Mid-point taper shall be a standard taper as follows:

Larch -- 21' - 40' shall be 1-inch taper. All other species -- 21' - 40' shall be 2-inch taper.

3. Southeast Idaho Area ---

- a. Targhee National Forest Area -- mid-point taper shall be a standard taper as follows:
Douglas Fir, Alpine Fir, and Engelmann Spruce:
21' - 40' shall be 2-inch taper.

Lodgepole Pine:

21' - 31' shall be 1-inch taper.

32' - 40' shall be 2-inch taper.

- b. Other Southeast Areas -- mid-point taper(s) shall be determined on the basis of actual taper.

4. Multiple segment butt logs not included in the above lengths shall be determined with actual taper applied.

5. The butt log taper tables developed by the USFS at the point of origin of the forest products (with the exception of the northeastern Washington area) shall be utilized on all forest products scaled within the state of Idaho.

TABLE III

Log Length	Scaling Length	Segment Length	Segment Length	Segment Length	Segment Length
8'1" - 8'8"	8				
8'9" - 9'8"	9				
9'9" - 10'8"	10				
10'9" - 11'8"	11				
11'9" - 12'8"	12				
12'9" - 13'8"	13				
13'9" - 14'8"	14				
14'9" - 15'8"	15				
15'9" - 16'8"	16				
16'9" - 17'8"	17				
17'9" - 18'8"	18				
18'9" - 19'8"	19				
19'9" - 20'8"	20				
20'9" - 22'2"	21	11	10		
22'3" - 23'2"	22	12	10		
23'3" - 24'2"	23	12	11		
24'3" - 25'2"	24	12	12		
25'3" - 26'2"	25	13	12		
26'3" - 27'2"	26	14	12		
27'3" - 28'2"	27	14	13		
28'3" - 29'2"	28	14	14		
29'3" - 30'2"	29	15	14		
30'3" - 31'2"	30	16	14		
31'3" - 32'2"	31	16	15		
32'3" - 33'2"	32	16	16		
33'3" - 34'2"	33	17	16		
34'3" - 35'2"	34	18	16		
35'3" - 36'2"	35	18	17		
36'3" - 37'2"	36	18	18		
37'3" - 38'2"	37	19	18		
38'3" - 39'2"	38	20	18		

Log Length	Scaling Length	Segment Length	Segment Length	Segment Length	Segment Length
39'3" - 40'2"	39	20	19		
40'3" - 41'2"	40	20	20		
41'3" - 42'8"	41	14	14	13	
42'9" - 43'8"	42	14	14	14	
43'9" - 44'8"	43	15	14	14	
44'9" - 45'8"	44	16	14	14	
45'9" - 46'8"	45	16	15	14	
46'9" - 47'8"	46	16	16	14	
47'9" - 48'8"	47	16	16	15	
48'9" - 49'8"	48	16	16	16	
49'9" - 50'8"	49	17	16	16	
50'9" - 51'8"	50	18	16	16	
51'9" - 52'8"	51	18	17	16	
52'9" - 53'8"	52	18	18	16	
53'9" - 54'8"	53	18	18	17	
54'9" - 55'8"	54	18	18	18	
55'9" - 56'8"	55	19	18	18	
56'9" - 57'8"	56	20	18	18	
57'9" - 58'8"	57	20	19	18	
58'9" - 59'8"	58	20	20	18	
59'9" - 60'8"	59	20	20	19	
60'9" - 61'8"	60	20	20	20	
61'9" - 63'2"	61	16	16	15	14
63'3" - 64'2"	62	16	16	16	14
64'3" - 65'2"	63	16	16	16	15
65'3" - 66'2"	64	16	16	16	16

In the table above, the butt segment is the longest.

TABLE IV
STANDARD CONVERTING FACTORS - USFS LOG SCALING HANDBOOK

PRODUCT	ASSUMED DIMENSIONS	EQUIVALENT IN BOARD FEET
Cord, standard	4 by 4 by 8 feet.	500
Cord, long	4 by 4 by 8 feet.	.625
Cord, shingle bolts	4 by 4 by 8 feet	.600
Cord, small material (averaging less than 5" middle diameter in the round)	do	333-1/3
Cord, short.	4 by 3 by 8 feet	375
Cord, short, small material	do	250
Load (small, irregular pieces that cannot be ricked)	4 by 4 by 8 feet	333-1/3
Tie, standard.	7 by 9 inches by 8 feet.	35
Do	7 by 8 inches by 8 feet	30
Do	6 by 6 inches by 8 feet	20
Tie, narrow gage	7 by 8 inches by 6-1/2 feet	25
Do	6 by 7 inches by 6-1/2 feet	20
Do	6 by 6 inches by 6-1/2 feet	15
Pole (telephone) or piling	8 inches by 45 feet	200
Do	8 inches by 40 feet	150
Do	8 inches by 35 feet	100
Do	7 inches by 60 feet	280
Do	7 inches by 50 feet	200
Do	7 inches by 40 feet	100
Do	7 inches by 35 feet	80
Do	7 inches by 30 feet	60
Do	7 inches by 25 feet	50
Do	5 inches by 25 feet	30
Cubic foot	13.6 inches by 1 foot	6
Linear foot	10 inches by 1 foot	3
Linear Foot (long piling)	80 to 125 feet by 6 inches	5-1/2
Derrick pole	7 inches by 30 feet	60
Derrick pole (11 pieces)		480
Post, fence	6 inches by 7 feet.	7
Do	5 inches by 7 feet	5
Post, split	18 inches circumference by 7 feet	6
Brace, fence	4 inches by 6 feet.	2
Stake, fence	3 inches by 5 feet	1
Stay, fence	2 inches by 6 feet	1/2
Rail, fence (split)	20 inches circumference by 16 feet	15
Pole, fence.	4 inches by 20 feet	10
Pole (12 pieces)	4 inches by 16 feet	100
Pole, converter	4 inches by 20 feet	10
Prop	6 inches by 10 feet	10
Lagging (6 pieces)	3 inches by 6 feet	10