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May 20, 1942

FEDERAL SPECIFICATION

LUMBER; SOFTWOOD

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers all species of softwood lumber listed in Product Standard 20 (PS 20).

2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein.

Federal Specification:

TT-W-571 - Wood Preservation: Treating Practices.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications, Standards, and Handbooks and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications, Standards, and Handbooks from established distribution points in their agencies.)

Military Specifications:

- MIL-L-14362 - Lumber, Unitizing and Loading.
- MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated.

Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-1363 - Measurement of Wood Moisture Content.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

Department of Commerce:

- Product Standard (PS 20) - American Softwood Lumber Standard.

(Application for copies should be addressed to the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.)

3. REQUIREMENTS

3.1 Description. Softwood lumber shall conform to Product Standard 20 and as specified herein.

3.2 Material. Softwood lumber furnished by the supplier shall be limited to those species listed in Product Standard 20. When specified (see 6.2), the lumber shall be of one species.

3.3 Seasoning. Unless otherwise specified (see 6.2), the moisture content of dry lumber shall not exceed 19 percent except that the moisture content of finish grades of boards and pattern lumber shall not exceed 15 percent. Any piece of lumber having a moisture content in excess of the amount specified at the time of dressing shall be considered unseasoned. Moisture content of lumber shall be determined as specified in 4.3.3.

3.4 Lumber sizes. Lumber sizes shall be as specified (see 6.2 and 6.4).

3.4.1 Minimum dressed sizes. Minimum dressed sizes of softwood lumber shall conform to the sizes listed in tables I through V. Lumber surfaced to its full nominal size shall be considered rough lumber.

3.4.2 Rough dry lumber. When rough dry lumber is specified, the minimum rough dry thickness of finish and common boards, dimension, and timbers of sizes 1 or more inches nominal thickness shall be not less than 1/8 inch thicker than the corresponding minimum dressed dry thickness, except that 20 percent of a shipment may be not less than 3/32 inch

thicker than the corresponding minimum dressed dry thickness. The minimum rough dry widths of finish and common strips, boards, dimension, and timbers shall be not less than 1/8 inch wider than the corresponding minimum dressed dry width.

3.4.3 Rough green lumber. When rough green lumber is specified, the minimum rough green thickness of finish and common boards, dimension and timbers of sizes 1 or more inches nominal thickness shall be not less than 1/8 inch thicker than the corresponding minimum dressed green thickness, except that 20 percent of a shipment may be not less than 3/32 inch thicker than the corresponding minimum dressed green thickness. The minimum rough green widths of finish and common strip, boards, dimension and timbers shall be not less than 1/8 inch wider than the corresponding minimum dressed green width.

3.4.4 Length trimming. The length of the lumber shall be not less than that specified (see 6.2). All lumber shall be trimmed for the removal of spur or splintered ends. Lumber 2 inches or more in specified thickness shall be double-end-trimmed to a length that is not over 3 inches in excess of the specified length, except that lumber over 24 feet long shall be trimmed to not over 7 inches in excess of the specified length.

Table I. Nominal and minimum-dressed dry sizes of finish, flooring, ceiling, partition, and stepping at 19 percent maximum-moisture content

(The thicknesses apply to all widths and all widths to all thicknesses except as modified.)

Item	Thicknesses		Face Widths	
	Nominal [1]	Minimum dressed	Nominal	Minimum dressed
		Inches		Inches
Finish	3/8	5/16	2	1-1/2
	1/2	7/16	3	2-1/2
	5/8	9/16	4	3-1/2
	3/4	5/8	5	4-1/2
	1	3/4	6	5-1/2
	1-1/4	1	7	6-1/2
	1-1/2	1-1/4	8	7-1/4
	1-3/4	1-3/8	9	8-1/4
	2	1-1/2	10	9-1/4
	2-1/2	2	11	10-1/4
	3	2-1/2	12	11-1/4
	3-1/2	3	14	13-1/4
	4	3-1/2	16	15-1/4
	Flooring [2]	3/8	5/16	2
1/2		7/16	3	2-1/8
5/8		9/16	4	3-1/8
1		3/4	5	4-1/8
1-1/4		1	6	5-1/8
1-1/2		1-1/4		

Table I. Nominal and minimum-dressed dry sizes of finish, flooring, ceiling, partition, and stepping at 19 percent maximum-moisture content (cont'd)

(The thicknesses apply to all widths and all widths to all thicknesses except as modified.)

Item	Thicknesses		Face Widths	
	Nominal [1]	Minimum dressed	Nominal	Minimum dressed
		Inches		Inches
Ceiling [2]	3/8	5/16	3	2-1/8
	1/2	7/16	4	3-1/8
	5/8	9/16	5	4-1/8
	3/4	11/16	6	5-1/8
Partition [2]	1	23/32	3	2-1/8
			4	3-1/8
			5	4-1/8
			6	5-1/8
Stepping [2]	1	3/4	8	7-1/4
	1-1/4	1	10	9-1/4
	1-1/2	1-1/4	12	11-1/4
	2	1-1/2		

[1] For nominal thicknesses under 1 inch, the board measure count is based on the nominal surface dimensions (width by length). With the exception of nominal thicknesses under 1 inch, the nominal thicknesses and widths in this table are the same as the board measure or count sizes.

[2] In tongued-and-grooved flooring and in tongued-and-grooved and ship-lapped ceiling of 5/16-inch, 7/16-inch, and 9/16-inch dressed thicknesses, the tongue or lap shall be 3/16-inch wide, with the overall widths 3/16 inch wider than the face widths shown in the table above. In all other worked lumber of dressed thicknesses of 5/8 inch to 1-1/4 inches, the tongue shall be 1/4 inch wide or wider in tongued-and-grooved lumber, and the lap 3/8-inch wide or wider in shiplapped lumber, and the overall widths shall be not less than the dressed face widths shown in the above table plus the width of the tongue or lap.

Table II. Nominal and minimum-dressed dry sizes of siding at 19 percent maximum-moisture content

(The thicknesses apply to all widths and all widths to all thicknesses)

Item	Thicknesses		Face Widths	
	Nominal [1]	Minimum dressed	Nominal	Minimum dressed
		Inches		Inches
Bevel siding	1/2	7/16 butt, 3/16 tip	4	3-1/2
	9/16	15/32 butt, 3/16 tip	5	4-1/2
	5/8	9/16 butt, 3/16 tip	6	5-1/2
	3/4	11/16 butt, 3/16 tip	8	7-1/4
	1	3/4 butt, 3/16 tip	10 12	9-1/4 11-1/4
Bungalow siding	3/4	11/16 butt, 1/16 tip	8 10 12	7-1/4 9-1/4 11-1/4
	5/8 1	9/16 23/32	4 5 6	3 4 5
			4 5 6 8 10 12	2-7/8 3-7/8 4-7/8 6-5/8 8-5/8 10-5/8
Rustic and drip siding (shiplapped, 1/2 in. lap)	5/8 1	9/16 23/32	4 5 6 8 10 12	3-1/8 4-1/8 5-1/8 6-7/8 8-7/8
			4 5 6 8 10	3-1/8 4-1/8 5-1/8 6-7/8 8-7/8
Rustic and drop siding (dressed and matched)	5/8 1	9/16 23/32	4 5 6 8 10	3-1/8 4-1/8 5-1/8 6-7/8 8-7/8

[1] For nominal thicknesses under 1 inch, the board measure count is based on the nominal surface dimensions (width by length). With the exception of nominal thicknesses under 1 inch, the nominal thicknesses and widths in this table are the same as the board measure or count sizes.

Table III. Nominal and minimum-dressed sizes of boards, dimension, and timbers

(The thicknesses apply to all widths and all widths to all thicknesses.)

Item	Thicknesses			Nominal	Face Widths	
	Nominal	Minimum dressed			Dry [1]	Green [2]
		Dry [1]	Green [1]			
		Inches	Inches		Inches	Inches
Boards [2]	1	3/4	25/32	2	2-2/3	1-9/16
	1-1/4	1	1-1/32	3	2-1/2	2-9/16
	1-1/2	1-1/4	1-9/32	4	3-1/2	3-9/16
				5	4-1/2	4-5/8
				6	5-1/2	5-5/8
				7	6-1/2	6-5/8
				8	7-1/4	7-1/2
				9	8-1/4	8-1/2
				10	9-1/4	9-1/2
				11	10-1/4	10-1/2
				12	11-1/4	11-1/2
				14	13-1/4	13-1/2
				16	15-1/4	15-1/2
Dimension	2	1-1/2	1-9/16	2	1-1/2	1-9/16
	2-1/2	2	2-1/16	3	2-1/2	2-9/16
	3	2-1/2	2-9/16	4	3-1/2	3-9/16
	3-1/2	3	3-1/16	5	4-1/2	4-5/8
				6	5-1/2	5-5/8
				8	7-1/4	7-1/2
				10	9-1/4	9-1/2
				12	11-1/4	11-1/2
				14	13-1/4	13-1/2
				16	15-1/4	15-1/2
Dimension	4	3-1/2	3-9/16	2	1-1/2	1-9/16
	4-1/2	4	4-1/16	3	2-1/2	2-9/16
				4	3-1/2	3-9/16
				5	4-1/2	4-5/8
				6	5-1/2	5-5/8
				8	7-1/4	7-1/2
				10	9-1/4	9-1/2
				12	11-1/4	11-1/2
Timbers				14	----	13-1/2
				16	----	15-1/2
	5 and thicker	----	1/2 off	5 and wider	----	1/2 off

[1] See 3.4.2 and 3.4.3 for the definitions of dry and green lumber.

[2] Boards less than the minimum thickness for 1 inch nominal but 5/8 inch or greater thickness dry (11/16 inch green) may be regarded as American Standard Lumber, but such boards shall be marked to show the size and condition of seasoning at the time of dressing. They shall also be distinguished from 1-inch boards with invoices and certificates.

Table IV. Nominal and minimum-dressed sizes of (2-inch and under) shiplap, centermatch, and D and M

(The thickness supply to all widths and all widths to all thickness.)

Item	Thicknesses			Nominal	Face Widths				
	Nominal	Minimum dressed			Nominal	Minimum dressed			
		Dry [1]	Green [1]			Dry [1]	Green [2]		
		Inches	Inches		Inches	Inches			
Shiplap, 3/8-inch lap	1	3/4	25/32	4	3-1/8	3-3/16			
				6	5-1/8	5-1/4			
				8	6-7/8	7-1/8			
				10	8-7/8	9-1/8			
				12	10-7/8	11-1/8			
				14	12-7/8	13-1/8			
				16	14-7/8	15-1/8			
Shiplap, 1/2-inch lap	1	3/4	25/32	4	3	3-1/16			
				6	5	5-1/8			
				8	6-3/4	7			
				10	8-3/4	9			
				12	10-3/4	11			
				14	12-3/4	13			
				16	14-3/4	15			
Center- match, 1/4 inch tongue	1	3/4	25/32	4	3-1/8	3-3/16			
	1-1/4	1	1-1/32	5	4-1/8	4-1/4			
	1-1/2	1-1/4	1-9/32	6	5-1/8	5-1/4			
				8	6-7/8	7-1/8			
				10	8-7/8	9-1/8			
				12	10-7/8	11-1/8			
				16	14-3/4	15			
2" D & M, 3/8-inch tongue	2	1-1/2	1-9/16	4	3	3-1/16			
				6	5	5-1/8			
				8	6-3/4	7			
				10	8-3/4	9			
				12	10-3/4	11			
							16	14-3/4	15
							20	18-3/4	19
2" Ship- lap, 1/2 inch lap	2	1-1/2	1-9/16	4	3	3-1/16			
				6	5	5-1/8			
				8	6-3/4	7			
				10	8-3/4	9			
				12	10-3/4	11			
							16	14-3/4	15
							20	18-3/4	19

[1] See 3.4.2 and 3.4.3 for the definitions of dry and green lumber.

Table V. Worked lumber such as factor flooring, heavy roofing, decking, and sheet piling
(The thicknesses apply to all widths and all widths to all thicknesses.) (See Note.)

Thicknesses [1]			Face widths		
Nominal	Minimum dressed		Nominal		Minimum dressed
	Inches				Inches
Tongue and grooved					
	Dry	Green		Dry	Green
2-1/2	2	2-1/16	4	3	3-1/16
3	2-1/2	2-9/16	6	5	5-1/8
3-1/2	3	3-1/16	8	6-3/4	7
4	3-1/2	3-9/16	10	8-3/4	9
4-1/2	4	4-1/16	12	10-3/4	11
Shiplap					
	Dry	Green		Dry	Green
2-1/2	2	2-1/16	4	3	3-1/16
3	2-1/2	2-1/6	6	5	5-1/8
3-1/3	3	3-1/16	8	6-3/4	7
4	3-1/2	3-9/16	10	8-3/4	9
4-1/2	4	4-1/16	12	10-3/4	11
Grooved-for-splines					
	Dry	Green		Dry	Green
2-1/2	2	2-1/16	4	3-12	3-9/16
3	2-1/2	2-9/16	6	5-1/2	5-5/8
3-1/2	3	3-1/16	8	7-1/4	7-1/2
4	3-1/2	3-9/16	10	9-1/4	9-1/2
4-1/2	4	4-1/16	12	11-1/4	11-1/2

Note: In worked lumber of nominal thicknesses of 2 inches and over, the tongue shall be 3/8 inch wide in tongued-and-grooved lumber and the lap 1/2 inch wide in shiplapped lumber, with the overall widths 3/8 inch and 1/2 inch wider, respectively, than the face widths shown in the above table. Double tongued-and-grooved decking may be manufactured with a 5/16-inch tongue.

[1] See table III for information on 2-inch dimension.

3.5 Surfacing. Lumber shall be furnished dressed or rough as specified (see 6.2).

3.6 Grades. The lumber shall be of the grade specified (see 6.2), and shall conform to the grade quality requirement of the applicable grading rules and specifications, approved under the provisions of PS-20.

3.6.1 Stress rated grade lumber. When specified (see 6.2), stress rated grade lumber for engineered applications shall be designated by specifying the grade, stress rating value, and species required, if one species is required (see 6.3).

3.7 Marking. Each piece of lumber and each bundle of like grade, size, and species shall be identified with the grade mark symbol of a lumber inspection agency certified by the Board of Review, American Lumber Standards Committee (see PS-20). When no grade mark symbol exists for the lumber specified, the supplier shall furnish a certificate of inspection for each car, truck, or trailer of lumber. The certificate of inspection shall be issued by one of the lumber inspection agencies approved by the Board of Review, American Lumber Standards Committee.

3.8 Patterned lumber. When patterned lumber is required, the pattern shall be as specified (see 6.2), and shall conform to the pattern specification of the applicable grading rules and specifications approved under the provisions of PS-20.

3.9 Lumber treatment.

3.9.1 Preservative treatment. When specified (see 6.2), lumber shall be preservative treated in accordance with TT-W-571 (see 6.5).

3.9.2 Fire retardant treatment. When specified (see 6.2), lumber shall be fire retardant treated in accordance with MIL-L-19140 (see 6.6).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Classification of inspection. Inspection shall be classified as follows:

- (a) Quality conformance inspection of the lumber (see 4.3).
- (b) Inspection of preparation for delivery (see 4.5).

4.3 Quality conformance inspection.

4.3.1 Sampling.

4.3.1.1 Unit of product. For the purpose of inspection, each piece of lumber shall constitute a unit of product.

4.3.1.2 Lot. For the purpose of inspection, a lot shall consist of all pieces of the same material and manufacturing classification offered for delivery at one time.

4.3.1.3 Examination. Samples for examination shall be selected in accordance with MIL-STD-105.

4.3.1.4 Test. Samples for test shall be selected only from lots of seasoned lumber in accordance with MIL-STD-105, inspection level S-4.

4.3.2 Examination. Each piece of lumber selected in accordance with 4.3.1.3 shall be examined as specified in 4.4.1. The AQL shall be 2.5 percent defective.

4.3.3 Test. Each piece of lumber selected in accordance with 4.3.1.4 shall be tested as specified in 4.4.2. The AQL shall be 1.5 percent defective.

4.4 Inspection procedure.

4.4.1 Examination. The lumber shall be examined as specified herein for the following defects:

101. Size (thickness, width, and length) not as specified.
102. Species not as specified.
103. Grade not as specified.
104. Stress rating not as specified (when required).
105. Grade mark missing or illegible.
106. Moisture content not as specified (seasoning).
107. Preservative treatment not as specified (when required).
108. Fire retardant treatment not as specified (when required).
109. Surfacing not as specified.
110. Pattern not as specified (when required).

4.4.2 Test. Each sample shall be tested for moisture content in accordance with MIL-STD-1363, method as specified (see 6.2).

4.5 Inspection of preparation for delivery.

4.5.1 Bundling, unitizing and marking. Inspection of bundling, unitizing, and marking shall be in accordance with MIL-L-14362.

5. PREPARATION FOR DELIVERY

5.1 Bundling, unitizing, and marking. Bundling, unitizing, and marking shall be in accordance with MIL-L-14362 as specified (see 6.2).

6. NOTES

6.1 Intended use. Softwood lumber is intended for use in construction and fabrication of engineered and nonengineered structures and other end items for which softwood is a convenient, suitable material.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents.

- (a) Title, number, and date of this specification
- (b) Species required when one particular species is required (see 3.2).
- (c) Moisture content (seasoning) required if other than as specified (see 3.3).
- (d) Size required (see 3.4).

- (e) Length of lumber required (see 3.4.4).
- (f) Surfacing required (see 3.5).
- (g) Grade required or stress rating required as applicable (see 3.6 and 6.3).
- (h) Pattern of lumber required (see 3.8) when required.
- (i) Preservative treatment required (see 3.9.1 and 6.4).
- (j) Fire retardant treatment required (see 3.9.2 and 6.5).
- (k) Method required (see 4.4.2).
- (l) Bundling, unitizing, and marking (see 5.1).

6.3 Stress rated grade lumber. Stress rated grade lumber should be utilized only in those instances where definite engineering requirements exist and the required mechanical properties of the material are specified. In addition to the grade and stress rating, a particular species of lumber may be required by the ordering activity. The contracting officer should furnish the supplier with the required grade, mechanical properties; and, when required, the species of lumber.

6.4 Definition. Timbers are defined as lumber having a thickness of 5 or more inches.

6.5 Preservative treatment. Except for a few species, softwood has a low resistance to decay and frequently gives unsatisfactory service where decay hazards exist. Preservative treatment should be used whenever a high degree of protection is required, such as, wood in contact with the ground or in structures exposed to the weather. The contracting officer should provide the necessary preservative treatment requirements to the supplier.

6.6 Fire retardant treatment. When lumber is used under conditions where flammability is a serious consideration, fire retardant treatment is recommended. The contracting officer should provide the fire retardant treatment requirements to the supplier.

6.7 Grade marking. Official grade marks do not exist for all available grades, therefore, the contracting officer should require a certificate of inspection issued by a lumber inspection agency approved by the Board of Review, American Lumber Standards Committee.

MILITARY INTEREST:

Custodians:
 Army - ME
 Navy - SH
 Air Force - 84

Review activities:

Navy - AS, MS

User activities:

Navy - OS, MC

Preparing activity:

Army - ME

CIVIL AGENCIES INTEREST:

FO
 VA
 COM
 NBS
 FSS

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