

**SUPPLEMENT NO. XIV(a)
STANDARD GRADING RULES
FOR**

WEST COAST LUMBER NO. 17

Approved by the Board of Directors

September 26, 2003

Approved by the ALS Board of Review

February 4, 2004

**Para. 207. MACHINE GRADED SCAFFOLD
PLANK - ALL SPECIES**

There are three categories of machine graded scaffold plank, E-Rated Visual, E-Rated Machine Graded, and MSR. All categories of machine graded scaffold have been evaluated by mechanical stress rating equipment. It is distinguished from visually graded scaffold plank in that each piece is nondestructively tested and marked to indicate the long span modulus of elasticity (E). E-Rated Scaffold Plank grades shall be qualified and quality controlled in accordance with the requirements of the Bureau and the American Lumber Standard Committee, Inc. E-Rated Scaffold Plank grades shall be marked to indicate the designated E-Rated grade E in millions of pounds per square inch (psi).

207a. E-Rated Visual Scaffold Plank.

Conforms to all provisions of Paragraph 171a, 171 aa, 171b, or 171bb as applicable.

All pieces shall be mechanically E-rated by a process approved by the American Lumber Standard Committee Board of Review, and the Bureau.

The average long span modulus of elasticity of the E-rated grade shall be qualified by test and quality controlled. Only E-Rated grades which equal or exceed the E listed for the same visual grade and species as

listed in Paragraph 200, Table 8a or 8b. may be qualified.

The 5th percentile tolerance limit (75% confidence) long span E for the grade shall equal or exceed 0.82 times the assigned average long span E of the grade qualified.

The assigned extreme fiber in bending (Fb) shall be as specified in Paragraph 200, Table 8a or 8b, applicable for the visual grade and species.

E-Rated Scaffold shall be marked with an approved grade stamp which includes the agency logo, the mill identification, species, seasoning, the E-Rated grade designation in millions of pounds per square inch (psi), and the applicable grade name as specified in Paragraph 171a, 171aa, 171b, or 171bb.

207b. E-Rated Machine Graded Scaffold Plank

E-rated Machine Graded Scaffold Plank is graded from Machine Stress Rated lumber which conforms to the provisions of Paragraph 206, combined with the E-Rating and visual limitations of this Paragraph.

All pieces shall be mechanically E-rated by a process approved by the American Lumber Standard Committee Board of Review, and the Bureau.

The average long span modulus of elasticity of the E-rated grade shall be qualified by test and quality controlled. Only E-Rated grades which equal or exceed the E listed for the same grade and species as listed in Paragraph 200, Table 8a or 8b. may be qualified.

The 5th percentile tolerance limit (75% confidence) long span E for the grade shall equal or exceed 0.82 times the assigned average long span E of the grade qualified.

The assigned extreme fiber in bending (Fb) of the E-

Rated Machine Graded Scaffold Plank shall be the assigned Fb of the MSR grade from which E-Rated Machine Graded Scaffold Plank is graded adjusted for flatwise use in accordance with Paragraph 200-g, and rounded to the nearest 50 psi.

The following visual characteristics and limiting provisions are permitted:

Cup - light

Holes - limited to $1/6$ the width or 1-1/2 inches, whichever is smaller.

Knots - knots may be sound, unsound, or encased.

- Edge knots are measured and limited in accordance with Paragraph 206.
- Knots away from the edge (elsewhere knots) are limited in size to the next larger edge knot category.
- Surface spike knots are limited on wide face to $1/3$ the width
- Chipped or sloughed knots at the edge of the wide face are permitted, if not through the thickness.

Pitch pockets - medium

Pitch streaks - medium

Pith - pith (heart center) is permitted in all grades of machine graded scaffold.

Skips - light, hit & miss in a maximum of 10% of the pieces. See Para. 720(f).

Shake - none through. Surface shakes up to 2' long.

Slope of Grain - limited to $1/15$ for machines which do not evaluate slope of grain,

Wane - $1/3$ the thickness and $1/10$ the width for $1/4$ the length, or equivalent except on the wide face.

Warp - light, except very light twist.

The ends of the lumber not tested by the stress grading equipment shall be limited as follows:

Knots

- edge knots limited in accordance with Paragraph 206.
- knots away from the edge (elsewhere knots) limited in size to the largest edge knot or non edge knot in the tested portion of the piece which ever is larger.

Slope of grain - limited to 1/12. Limited to 1/15 for machines which do not evaluate slope of grain.

E-Rated Machine Graded Scaffold Plank shall be marked with an approved grade stamp which includes the agency logo, the mill identification, species, seasoning, the designation "Machine Graded" together with the applicable E-Rated grade designation in millions of pounds per square inch (psi) and applicable flatwise Fb.

207c. Machine Stress Rated (MSR) Scaffold Plank

Machine Stress Rated Scaffold Plank is graded to conform with all provisions of Paragraph 206, Machine Stress Rated Lumber, and the E-Rating and visual limitations of this Paragraph.

All pieces shall be mechanically E-rated by a process approved by the American Lumber Standard Committee Board of Review, and the Bureau.

All MSR grades used to manufacture Machine Stress Rated Scaffold Plank shall be qualified and quality controlled in accordance with the provisions of Paragraph 206, and the Bureau Qualification and Quality Control Procedures for Machine Graded Lumber.

The average long span modulus of elasticity of the E-rated grade shall be qualified by test and quality controlled.

The 5th percentile tolerance limit (75% confidence) long

span E for the grade shall equal or exceed 0.82 times the assigned average long span E of the grade qualified.

The assigned extreme fiber in bending (Fb) of a Machine Stress Rated Scaffold Plank grade shall be the assigned Fb for the MSR grade adjusted for flatwise use in accordance with Paragraph 200-g, and rounded to the nearest 50 psi.

The following visual characteristics and limiting provisions are permitted:

Cup - light

Holes - limited to 1/6 the width or 1-1/2 inches, whichever is smaller.

Knots - knots may be sound, unsound, or encased.

- Edge knots are measured and limited in accordance with Paragraph 206.
- Knots away from the edge (elsewhere knots) are limited in size to the next larger edge knot category.
- Surface spike knots are limited on wide face to 1/3 the width
- Chipped or sloughed knots at the edge of the wide face are permitted, if not through the thickness.

Pitch pockets - medium

Pitch streaks - medium

Pith - pith (heart center) is permitted in all grades of machine graded scaffold.

Skips - light, hit & miss in a maximum of 10% of the pieces. See Para. 720(f).

Shake - none through. Surface shakes up to 2' long.

Slope of Grain - limited to 1/15 for machines which do not evaluate slope of grain,

Wane - 1/3 the thickness and 1/10 the width for 1/4 the length, or equivalent except on the wide face.

Warp - light, except very light twist.

The ends of the lumber not tested by the stress grading equipment shall be limited as follows:

Knots

- edge knots limited in accordance with Para. 206.
- knots away from the edge (elsewhere knots) limited in size to the largest edge knot or non edge knot in the tested portion of the piece which ever is larger.

Slope of grain - limited to 1/12. Limited to 1/15 for machines which do not evaluate slope of grain.

Machine Stress Rated Scaffold Plank shall be marked with an approved grade stamp which includes the agency logo, the mill identification, species, seasoning, the E-Rated grade designation in millions of pounds per square inch (psi), the designation "MSR", and the applicable MSR E-f grade designation.

Grade Stamp Facsimiles

Para. 207a



Para. 207b



Para. 207c



**SUPPLEMENT NO. XIV(b)
STANDARD GRADING RULES
FOR
WEST COAST LUMBER NO. 17**

Approved by the ALS Board of Review
January 29, 2004; April 29, 2004; July 22, 2004;
October 21, 2004; February 3, 2005;
November 2, 2005; April 27, 2006

Para. 200-1. Add the following species and specific gravity values to the table of imported species:

Species or Species Group	Country of Origin	Specific Gravity (OD WT./OD VOL.)
Montane pine	Rep. South Africa	0.45
Norway spruce	Romania & Ukraine	0.38
Silver fir	Germany, NE France, Switzerland	0.43
Revise listing for Scots pine from Lithuania & Estonia to read as follows:		
Scots pine	Baltic States (Estonia, Latvia, Lithuania)	0.45

Para. 200 Tables 5c & 5d. Add new species and revise listed species as follows:

Para. 200 Table 5c & 5d. Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
N. Spr. - Baltic Countries (Estonia, Latvia, Lithuania)	Sel. Str.	1,200	550	1,200	430	150	1,600,000
	No. 1	850	375	1,050	430	150	1,400,000
	No. 2	800	350	1,000	430	150	1,300,000
	No.3	450	200	575	430	150	1,100,000

Para. 200 Tables 5c & 5d (cont.). Add new species and revise listed species as follows:

Para. 200 Table 5c & 5d. Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
N. Spr. - Germany, NE France, Switzerland	Sel. Str.	1,200	550	1,200	355	170	1,600,000
	No. 1	825	375	1,050	355	170	1,400,000
	No. 2	725	325	950	355	170	1,200,000
	No.3	425	200	550	355	170	1,100,000
N. Spr. - Romania & Ukraine	Sel. Str.	1,250	575	1,200	275	100	1,500,000
	No. 1	850	375	1,050	275	100	1,400,000
	No. 2	750	325	950	275	100	1,200,000
	No.3	425	200	550	275	100	1,100,000

Para. 200 Tables 5c & 5d (cont.). Add new species and revise listed species as follows:

Para. 200 Table 5c & 5d (cont.). Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
Sc. Pine - Austria, Czech Rep., Romania, Ukraine	Sel. Str.	1,300	600	1,200	270	135	1,700,000
	No. 1	900	400	1,050	270	135	1,600,000
	No. 2	775	350	1,000	270	135	1,400,000
	No.3	450	200	575	270	135	1,300,000
Sc. Pine - Baltic Countries (Estonia, Latvia, Lithuania)	Sel. Str.	1,150	525	1,150	430	130	1,500,000
	No. 1	800	350	1,050	430	130	1,400,000
	No. 2	750	325	975	430	130	1,200,000
	No.3	425	200	550	430	130	1,100,000

Para. 200 Tables 5c & 5d (cont.). Add new species and revise listed species as follows:

Para. 200 Table 5c & 5d (cont.). Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
Montane Pine - Republic of South Africa	Sel. Str.	975	425	1,100	325	135	1,300,000
	No. 1	650	300	950	325	135	1,100,000
	No. 2	600	275	850	325	135	1,000,000
	No.3	350	150	475	325	135	900,000
Silver Fir - Germany, NE France, Switzerland	Sel. Str.	950	425	1,100	400	130	1,500,000
	No. 1	725	325	975	400	130	1,400,000
	No. 2	725	325	950	400	130	1,300,000
	No.3	425	200	550	400	130	1,100,000

Para. 200 Tables 6c & 6d. Add new species and revise listed species as follows:

Para. 200 Table 6c & 6d (cont.). Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
N. Spr. - Baltic Countries (Estonia, Latvia, Lithuania)	Const.	900	400	1,200	430	150	1,200,000
	Stand.	500	225	1,050	430	150	1,100,000
	Utility	250	100	675	430	150	1,000,000
	Stud	625	275	625	430	150	1,100,000

Para. 200 Tables 6c & 6d (cont.). Add new species and revise listed species and revise listed species as follows:

Para. 200 Table 6c & 6d (cont.). Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension Parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. To grain, Fc _⊥ (psi)	Horiz. Shear, Fv (psi)	Modulus of elasticity, E (psi)
N. Spr. - Germany, NE France, Switzerland	Const.	825	375	1,200	355	170	1,100,000
	Stand.	475	200	975	355	170	1,000,000
	Utility	225	100	650	355	170	900,000
	Stud	575	250	600	355	170	1,100,000
N. Spr. - Romania & Ukraine	Const.	850	375	1,200	275	100	1,100,000
	Stand.	475	200	1,000	275	100	1,000,000
	Utility	225	100	650	275	100	1,000,000
	Stud	575	250	600	275	100	1,100,000

Para. 200 Tables 6c & 6d (cont.). Add new species and revise listed species as follows:
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Para. 200 Table 6c & 6d (cont.). Add new species and revise listed species as follows:

SPECIES	GRADE	Ext. Fiber bending, Fb (psi)	Tension parallel to grain, Ft (psi)	Comp. Parallel to grain, Fc (psi)	Comp. Perp. to grain, Fc _⊥ (psi)	Horiz. shear, Fv (psi)	Modulus of elasticity, E (psi)
Sc. Pine - Austria, Czech Rep., Romania, Ukraine	Const.	875	400	1,200	270	135	1,300,000
	Stand.	500	225	1,000	270	135	1,200,000
	Utility	225	100	675	270	135	1,100,000
	Stud	600	275	625	270	135	1,300,000
Sc. Pine - Baltic Countries (Estonia, Latvia, Lithuania)	Const.	850	375	1,200	430	130	1,100,000
	Stand.	475	225	1,000	430	130	1,000,000
	Utility	225	100	650	430	130	1,000,000
	Stud	575	275	625	430	130	1,100,000