AMERICAN WOOD COUNCIL

April 2022

ERRATA

to the 2018 Edition of the *Design Values for Wood Construction*

(a supplement to the *National Design Specification® (NDS®) for Wood Construction*)

(All print and electronic versions)

Page **Revision**

41 Modify the following reference design values in Table 4B for Mixed Southern Pine as shown below (footnotes remain unchanged):

Table 4B (Cont.) **Reference Design Values for Visually Graded Southern Pine Dimension Lumber (2" - 4" thick)[1,2,3,4,5]**

(Tabulated design values are for normal load duration and dry service conditions, unless specified otherwise. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4B ADJUSTMENT FACTORS

Species and commercial grade	Size classification	Design values in pounds per square inch (psi)							Specific Gravity[6]	Grading Rules Agency
		Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
		F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
SOUTHERN PINE		(Surfaced Dry - Used in dry service condtions - 19% or less moisture content)								
Dense Structural 86	2" & wider	2,600	1,750	175	660	2,000	1,800,000	660,000	0.55	SPIB
Dense Structural 72		2,200	1,450	175	660	1,650	1,800,000	660,000		
Dense Structural 65		2,000	1,300	175	660	1,500	1,800,000	660,000		
SOUTHERN PINE		(Surfaced Green - Used in any service condtion)								
Dense Structural 86	2-1/2" & wider 2-1/2"-4" thick	2,100	1,400	165	440	1,300	1,600,000	580,000	0.55	SPIB
Dense Structural 72		1,750	1,200	165	440	1,100	1,600,000	580,000		
Dense Structural 65		1,600	1,050	165	440	1,000	1,600,000	580,000		
MIXED SOUTHERN PINE										
Select Structural	2" - 4" wide	2,050	1,200	175	565	1,800	1,600,000	580,000	0.51	SPIB
No.1		1,450	875	175	565	1,650	1,500,000	550,000		
No.2		1,100	675	175	565	1,450	1,400,000	510,000		
No.3 and Stud		650	400	175	565	850	1,200,000	440,000		
Construction	4" wide	~~850~~ 875	500	175	565	1,600	1,300,000	470,000	0.51	
Standard		475	275	175	565	1,300	1,200,000	440,000		
Utility		225	125	175	565	850	1,100,000	400,000		
Select Structural	5" - 6" wide	1,850	1,100	175	565	1,700	1,600,000	580,000	0.51	
No.1		1,300	750	175	565	1,550	1,500,000	550,000		
No.2		1,000	600	175	565	1,400	1,400,000	510,000		
No.3 and Stud		575	350	175	565	~~775~~ 800	1,200,000	440,000		
Select Structural	8" wide	1,750	1,000	175	565	1,600	1,600,000	580,000	0.51	
No.1		1,200	700	175	565	1,450	1,500,000	550,000		
No.2		925	550	175	565	1,350	1,400,000	510,000		
No.3 and Stud		525	325	175	565	~~800~~ 775	1,200,000	440,000		
Select Structural	10" wide	1,500	875	175	565	1,600	1,600,000	580,000	0.51	
No.1		1,050	600	175	565	1,450	1,500,000	550,000		
No.2		800	475	175	565	1,300	1,400,000	510,000		
No.3 and Stud		475	275	175	565	750	1,200,000	440,000		
Select Structural	12" wide	1,400	825	175	565	1,550	1,600,000	580,000	0.51	
No.1		975	575	175	565	1,400	1,500,000	550,000		
No.2		750	450	175	565	1,250	1,400,000	510,000		
No.3 and Stud		450	250	175	565	725	1,200,000	440,000		

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&

to the ADDENDUM (March 2019) to the *2018 NDS Supplement*

Modify the following design values for E_{min} as follows:

Table 4A Reference Design Values for Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]

(All species except Southern Pine – see table 4B) (Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4A ADJUSTMENT FACTORS

Species and commercial grade	Size classification	Design values in pounds per square inch (psi)								Specific Gravity[4]	Grading Rules Agency
		Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}		G	
NORWAY SPRUCE (NORTH)											
Select Structural	2" & wider	950	600	190	410	1,100	1,500,000	~~1,000,000~~	550,000	0.40	NLGA
No. 1/No.2		650	425	190	410	900	1,300,000	~~800,000~~	470,000		
No.3		375	250	190	410	525	1,200,000	~~700,000~~	440,000		
Stud	2" & wider	500	325	190	410	575	1,200,000	~~700,000~~	440,000		
Construction	2" - 4" wide	725	475	190	410	1,100	1,200,000	~~700,000~~	440,000		
Standard		400	275	190	410	925	1,100,000	~~700,000~~	400,000		
Utility		200	125	190	410	600	1,100,000	~~600,000~~	400,000		

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Modify the following bending design values for No. 1 Norway Spruce from Finland, and No. 2 Norway Spruce from Romania and Ukraine as shown:

Table 4F Reference Design Values for Non-North American Visually Graded Dimension Lumber (2" - 4" thick)[1,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4F ADJUSTMENT FACTORS

Species and commercial Grade	Size classification	Design values in pounds per square inch (psi)							Specific Gravity[5]	Grading Rules Agency
		Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
		F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
NORWAY SPRUCE - Finland										
Select Structural	2" & wider	1,350	600	125	220	1,200	1,500,000	550,000	0.42	WCLIB
No. 1		~~825~~ 850	375	125	220	1,000	1,400,000	510,000		
No. 2		625	275	125	220	875	1,200,000	440,000		
No. 3		375	175	125	220	500	1,100,000	400,000		
Stud	2" & wider	575	250	125	220	600	1,100,000	400,000		
Construction	2" - 4" wide	725	325	125	220	1,100	1,100,000	400,000		
Standard		400	175	125	220	900	1,000,000	370,000		
Utility		200	75	125	220	600	1,000,000	370,000		

Table 4F Reference Design Values for Non-North American Visually Graded Dimension Lumber (2" - 4" thick)[1,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4F ADJUSTMENT FACTORS

Species and commercial Grade	Size classification	Design values in pounds per square inch (psi)							Specific Gravity[5]	Grading Rules Agency
		Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
		F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
NORWAY SPRUCE - Romania & Ukraine										
Select Structural	2" & wider	1,250	575	100	275	1,200	1,500,000	550,000	0.38	WCLIB
No. 1		850	375	100	275	1,050	1,400,000	510,000		
No. 2		~~725~~ 750	325	100	275	950	1,200,000	440,000		
No. 3		425	200	100	275	550	1,100,000	400,000		
Stud	2" & wider	575	250	100	275	600	1,100,000	400,000		
Construction	2" - 4" wide	850	375	100	275	1,200	1,100,000	400,000		
Standard		475	200	100	275	1,000	1,000,000	370,000		
Utility		225	100	100	275	650	1,000,000	370,000		

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ADDENDUM
to the 2018 Edition of the
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Page	Revision
62	Add new Table 4G, Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2"- 4" thick) as shown on the following pages.

Repetitive Member Factor, C_r

Bending design values, F_b, for dimension lumber 2" to 4" thick shall be multiplied by the repetitive member factor, C_r = 1.15, when such members are used as joists, truss chords, rafters, studs, planks, decking, or similar members which are in contact or spaced not more than 24" on center, are not less than 3 in number and are joined by floor, roof, or other load distributing elements adequate to support the design load.

Wet Service Factor, C_M

When dimension lumber is used where moisture content will exceed 19% for an extended time period, design values shall be multiplied by the appropriate wet service factors from the following table:

Wet Service Factors, C_M

F_b	F_t	F_v	$F_{c\perp}$	F_c	E and E_{min}
0.85*	1.0	0.97	0.67	0.8**	0.9

* when $(F_b)(C_F) \le 1{,}150$ psi, $C_M = 1.0$

** when $(F_c)(C_F) \le 750$ psi, $C_M = 1.0$

Flat Use Factor, C_{fu}

Bending design values adjusted by size factors are based on edgewise use (load applied to narrow face). When dimension lumber is used flatwise (load applied to wide face), the bending design value, F_b, shall also be permitted to be multiplied by the following flat use factors:

Flat Use Factors, C_{fu}

Width (depth)	Thickness (breadth)	
	2" & 3"	4"
2" & 3"	1.0	—
4"	1.1	1.0
5"	1.1	1.05
6"	1.15	1.05
8"	1.15	1.05
10" & wider	1.2	1.1

NOTE

To facilitate the use of Table 4G, shading has been employed to distinguish design values based on a 4" nominal width (Construction, Standard, and Utility grades) or a 6" nominal width (Stud grade) from design values based on a 12" nominal width (Select Structural, No.1 & Btr, No.1, No.2, and No.3 grades).

Size Factor, C_F

Tabulated bending, tension, and compression parallel to grain design values for dimension lumber 2" to 4" thick shall be multiplied by the following size factors:

Size Factors, C_F

		F_b		F_t	F_c
		Thickness (breadth)			
Grades	Width (depth)	2" & 3"	4"		
Select Structural, No.1 & Btr, No.1, No.2, No.3	2", 3", & 4"	1.5	1.5	1.5	1.15
	5"	1.4	1.4	1.4	1.1
	6"	1.3	1.3	1.3	1.1
	8"	1.2	1.3	1.2	1.05
	10"	1.1	1.2	1.1	1.0
	12"	1.0	1.1	1.0	1.0
	14" & wider	0.9	1.0	0.9	0.9
Stud	2", 3", & 4"	1.1	1.1	1.1	1.05
	5" & 6"	1.0	1.0	1.0	1.0
	8" & wider	Use No.3 Grade tabulated design values and size factors			
Construction, Standard	2", 3", & 4"	1.0	1.0	1.0	1.0
Utility	4"	1.0	1.0	1.0	1.0
	2" & 3"	0.4	—	0.4	0.6

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
As-N Spr-Sc P (I) AUS ROM UKR		AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE & SCOTS PINE from AUSTRIA, ROMANIA, & UKRAINE									PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from ROMANIA & UKRAINE; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE	Select Structural	2" & wider	1250	575	100	260	1200	1.5	0.55	0.38	
	No. 1		850	375	100	260	1050	1.4	0.51		
	No. 2		725	325	100	260	950	1.2	0.44		
	No. 3		425	200	100	260	550	1.1	0.40		
	Stud	2" & wider	575	250	100	260	600	1.1	0.40		
	Construction	2" - 4" wide	850	375	100	260	1200	1.1	0.40		
	Standard		475	200	100	260	1000	1	0.37		
	Utility		225	100	100	260	650	1	0.37		
AS-Sc P (I) AUS		AUSTRIAN SPRUCE & SCOTS PINE from AUSTRIA									PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE	Select Structural	2" & wider	1300	600	135	260	1200	1.7	0.62	0.43	
	No. 1		900	400	135	260	1050	1.6	0.58		
	No. 2		775	350	135	260	1000	1.4	0.51		
	No. 3		450	200	135	260	575	1.3	0.47		
	Stud	2" & wider	600	275	135	260	625	1.3	0.47		
	Construction	2" - 4" wide	875	400	135	260	1200	1.3	0.47		
	Standard		500	225	135	260	1000	1.2	0.44		
	Utility		225	100	135	260	675	1.1	0.40		
AS/NSPR/SCOTP(I)AUS/GER		AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE & SCOTS PINE from AUSTRIA & GERMANY [5]									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from GERMANY[5]	Select Structural	2" & wider	1200	550	135	260	1200	1.6	0.58	0.42	
	No. 1		800	375	135	260	1050	1.4	0.51		
	No. 2		700	325	135	260	950	1.1	0.40		
	No. 3		400	175	135	260	550	1	0.37		
	Stud	2" & wider	550	250	135	260	600	1	0.37		
	Construction	2" - 4" wide	800	375	135	260	1150	1.1	0.40		
	Standard		450	200	135	260	975	1	0.37		
	Utility		225	100	135	260	625	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
DF/DF-N			DOUGLAS FIR & DOUGLAS FIR (NORTH)								TP
DF-L/DF-L(N)			DOUGLAS FIR-LARCH & DOUGLAS FIR-LARCH (NORTH)								PLIB, WWPA
DF-L/DF(N)			DOUGLAS FIR-LARCH & DOUGLAS FIR (NORTH)								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: DOUGLAS FIR-LARCH & DOUGLAS FIR-LARCH (NORTH)	Select Structural	2" & wider	1350	825	180	625	1700	1.9	0.69	0.49	
	No. 1 & Btr		1150	750	180	625	1550	1.8	0.66		
	No. 1		850	500	180	625	1400	1.6	0.58		
	No. 2		850	500	180	625	1350	1.6	0.58		
	No. 3		475	300	180	625	775	1.4	0.51		
	Stud	2" & wider	650	400	180	625	850	1.4	0.51		
	Construction	2" - 4" wide	950	575	180	625	1650	1.5	0.55		
	Standard		525	325	180	625	1400	1.4	0.51		
	Utility		250	150	180	625	900	1.3	0.47		
D Fir-L-HF			DOUGLAS FIR-LARCH & HEM-FIR from U.S.								PLIB
DF-HF			DOUGLAS FIR & HEM-FIR from U.S.								
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: DOUGLAS FIR-LARCH; HEM-FIR	Select Structural	2" & wider	1400	925	150	405	1500	1.6	0.58	0.43	
	No. 1&Btr		1100	725	150	405	1350	1.5	0.55		
	No. 1		975	625	150	405	1350	1.5	0.55		
	No. 2		850	525	150	405	1300	1.3	0.47		
	No. 3		500	300	150	405	725	1.2	0.44		
	Stud	2" & wider	675	400	150	405	800	1.2	0.44		
	Construction	2" - 4" wide	975	600	150	405	1550	1.3	0.47		
	Standard		550	325	150	405	1300	1.2	0.44		
	Utility		250	150	150	405	850	1.1	0.40		
DF-HF-SPF			DOUGLAS FIR, HEM-FIR & SPRUCE-PINE-FIR from NORTH AMERICA								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: DOUGLAS FIR-LARCH; HEM-FIR; SPRUCE-PINE-FIR	Select Structural	2" & wider	1250	700	135	405	1400	1.5	0.55	0.42	
	No. 1		875	450	135	405	1150	1.4	0.51		
	No. 2		850	450	135	405	1150	1.3	0.47		
	No. 3		500	250	135	405	650	1.2	0.44		
	Stud	2" & wider	675	350	135	405	725	1.2	0.44		
	Construction	2" - 4" wide	975	500	135	405	1400	1.3	0.47		
	Standard		550	275	135	405	1150	1.2	0.44		
	Utility		250	125	135	405	750	1.1	0.40		

Table 4G

Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
			F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
DF-HF-SPF(S)			DOUGLAS FIR, HEM-FIR & SPRUCE-PINE-FIR (SOUTH) from U.S.								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: DOUGLAS FIR-LARCH; HEM-FIR; SPRUCE-PINE-FIR (SOUTH)	Select Structural	2" & wider	1300	575	135	335	1200	1.3	0.47	0.36	
	No. 1		875	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		
D Fir-SPF			DOUGLAS FIR & SPRUCE-PINE-FIR from NORTH AMERICA								PLIB
DF-L-SPF			DOUGLAS FIR-LARCH & SPRUCE-PINE-FIR from NORTH AMERICA								
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: DOUGLAS FIR-LARCH; SPRUCE-PINE-FIR	Select Structural	2" & wider	1250	700	135	425	1400	1.5	0.55	0.42	
	No. 1		875	450	135	425	1150	1.4	0.51		
	No. 2		875	450	135	425	1150	1.4	0.51		
	No. 3		500	250	135	425	650	1.2	0.44		
	Stud	2" & wider	675	350	135	425	725	1.2	0.44		
	Construction	2" - 4" wide	1000	500	135	425	1400	1.3	0.47		
	Standard		550	275	135	425	1150	1.2	0.44		
	Utility		275	125	135	425	750	1.1	0.40		
DF-N Spr (I) N FRA			DOUGLAS FIR & NORWAY SPRUCE from NORTHERN FRANCE								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: DOUGLAS FIR from FRANCE & GERMANY; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	1200	550	170	355	1200	1.6	0.58	0.42	
	No. 1		825	375	170	355	1050	1.4	0.51		
	No. 2		725	325	170	355	950	1.2	0.44		
	No. 3		425	200	170	355	550	1.1	0.40		
	Stud	2" & wider	575	250	170	355	600	1.1	0.40		
	Construction	2" - 4" wide	825	375	170	355	1200	1.1	0.40		
	Standard		475	200	170	355	975	1	0.37		
	Utility		225	100	170	355	650	0.9	0.33		
DF/NSPR/SCOTP(I)GER/ROM/SW/UKR			DOUGLAS FIR from GERMANY, NORWAY SPRUCE & SCOTS PINE from GERMANY [5], ROMANIA, SWEDEN, or UKRAINE								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: DOUGLAS FIR from FRANCE & GERMANY; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from ROMANIA & UKRAINE; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1200	550	100	270	1200	1.5	0.55	0.38	
	No. 1		800	375	100	270	1000	1.4	0.51		
	No. 2		575	250	100	270	825	1.1	0.40		
	No. 3		325	150	100	270	475	1	0.37		
	Stud	2" & wider	450	200	100	270	525	1	0.37		
	Construction	2" - 4" wide	650	300	100	270	1050	1.1	0.40		
	Standard		375	175	100	270	850	1	0.37		
	Utility		175	75	100	270	550	0.9	0.33		

Table 4G

Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
DF/NSPR/SCOTP(I)GER			DOUGLAS FIR, NORWAY SPRUCE, & SCOTS PINE from GERMANY[5]								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: DOUGLAS FIR from FRANCE & GERMANY; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]	Select Structural	2" & wider	1200	550	160	355	1200	1.6	0.58	0.42	
	No. 1		800	375	160	355	1050	1.4	0.51		
	No. 2		700	325	160	355	950	1.1	0.40		
	No. 3		400	175	160	355	550	1	0.37		
	Stud	2" & wider	550	250	160	355	600	1	0.37		
	Construction	2" - 4" wide	800	375	160	355	1150	1.1	0.40		
	Standard		450	200	160	355	975	1	0.37		
	Utility		225	100	160	355	625	0.9	0.33		
ES-LP			ENGELMANN SPRUCE & LODGEPOLE PINE from NORTH AMERICA								PLIB, WWPA
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR (SOUTH)	Select Structural	2" & wider	1300	575	135	335	1200	1.3	0.47	0.36	
	No. 1		875	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		
ES-LP-AF			ENGELMANN SPRUCE, LODGEPOLE PINE & SUBALPINE FIR from U.S.								PLIB, WWPA
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR (SOUTH); WESTERN WOODS	Select Structural	2" & wider	900	400	135	335	1050	1.2	0.44	0.36	
	No. 1		675	300	135	335	950	1.1	0.40		
	No. 2		675	300	135	335	900	1	0.37		
	No. 3		375	175	135	335	525	0.9	0.33		
	Stud	2" & wider	525	225	135	335	575	0.9	0.33		
	Construction	2" - 4" wide	775	350	135	335	1100	1	0.37		
	Standard		425	200	135	335	925	0.9	0.33		
	Utility		200	100	135	335	600	0.8	0.29		
HF/DF-N/SPF/SPF-S			HEM-FIR, DOUGLAS FIR (NORTH), SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: HEM-FIR; DOUGLAS FIR-LARCH (NORTH); SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH)	Select Structural	2" & wider	1250	575	135	335	1200	1.3	0.47	0.36	
	No. 1		850	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
HF/HF(N)			HEM-FIR & HEM-FIR (NORTH) from NORTH AMERICA								PLIB, WWPA
HF/HF-N			HEM-FIR & HEM-FIR (NORTH) from NORTH AMERICA								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: HEM-FIR; HEM-FIR (NORTH)	Select Structural	2" & wider	1300	775	145	405	1500	1.6	0.58	0.43	
	No. 1 & Btr		1100	725	145	405	1350	1.5	0.55		
	No. 1		975	575	145	405	1350	1.5	0.55		
	No. 2		850	525	145	405	1300	1.3	0.47		
	No. 3		500	300	145	405	725	1.2	0.44		
	Stud	2" & wider	675	400	145	405	800	1.2	0.44		
	Construction	2" - 4" wide	975	600	145	405	1550	1.3	0.47		
	Standard		550	325	145	405	1300	1.2	0.44		
	Utility		250	150	145	405	850	1.1	0.40		
HF-SS			HEM-FIR & SITKA SPRUCE from U.S.								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: HEM-FIR; SITKA SPRUCE	Select Structural	2" & wider	1300	575	135	335	1200	1.3	0.47	0.36	
	No. 1		875	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		
N Spr (I) EST FIN GER LTH NOR SW			NORWAY SPRUCE from ESTONIA, FINLAND, GERMANY, LITHUANIA, NORWAY, & SWEDEN								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from ESTONIA, LATVIA, & LITHUANIA; NORWAY SPRUCE from FINLAND; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from NORWAY; NORWAY SPRUCE from SWEDEN	Select Structural	2" & wider	1200	550	115	220	1200	1.5	0.55	0.42	
	No. 1		825	375	115	220	1000	1.4	0.51		
	No. 2		625	275	115	220	875	1.2	0.44		
	No. 3		375	175	115	220	500	1.1	0.40		
	Stud	2" & wider	550	250	115	220	575	1.1	0.40		
	Construction	2" - 4" wide	725	325	115	220	1100	1.1	0.40		
	Standard		400	175	115	220	900	1	0.37		
	Utility		200	75	115	220	600	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
N Spr-Sc P(I) EST			NORWAY SPRUCE & SCOTS PINE from ESTONIA								PLIB
N Spr-Sc P(I) LAT			NORWAY SPRUCE & SCOTS PINE from LATVIA								PLIB
N Spr-Sc P(I) LTH			NORWAY SPRUCE & SCOTS PINE from LITHUANIA								PLIB
NSPR/SCOTP(I)LAT/LTH			NORWAY SPRUCE & SCOTS PINE from LATVIA & LITHUANIA								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from ESTONIA, LATVIA, & LITHUANIA; SCOTS PINE from ESTONIA, LATVIA, & LITHUANIA	Select Structural	2" & wider	1150	525	130	430	1150	1.5	0.55	0.42	
	No. 1		800	350	130	430	1050	1.4	0.51		
	No. 2		750	325	130	430	975	1.2	0.44		
	No. 3		425	200	130	430	550	1.1	0.40		
	Stud	2" & wider	575	275	130	430	625	1.1	0.40		
	Construction	2" - 4" wide	850	375	130	430	1200	1.1	0.40		
	Standard		475	225	130	430	1000	1	0.37		
	Utility		225	100	130	430	650	1	0.37		
N Spr-Sc P(I) FIN			NORWAY SPRUCE & SCOTS PINE from FINLAND								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from FINLAND; SCOTS PINE from FINLAND	Select Structural	2" & wider	1300	600	125	210	1200	1.5	0.55	0.42	
	No. 1		825	375	125	210	1000	1.4	0.51		
	No. 2		625	275	125	210	875	1.2	0.44		
	No. 3		375	175	125	210	500	1.1	0.40		
	Stud	2" & wider	575	250	125	210	600	1.1	0.40		
	Construction	2" - 4" wide	725	325	125	210	1100	1.1	0.40		
	Standard		400	175	125	210	900	1	0.37		
	Utility		200	75	125	210	600	1	0.37		
N Spr-Sc P(I) GER			NORWAY SPRUCE & SCOTS PINE from GERMANY[5]								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]	Select Structural	2" & wider	1200	550	160	355	1200	1.6	0.58	0.42	
	No. 1		800	375	160	355	1050	1.4	0.51		
	No. 2		700	325	160	355	950	1.1	0.40		
	No. 3		400	175	160	355	550	1	0.37		
	Stud	2" & wider	550	250	160	355	600	1	0.37		
	Construction	2" - 4" wide	800	375	160	355	1150	1.1	0.40		
	Standard		450	200	160	355	975	1	0.37		
	Utility		225	100	160	355	625	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
N Spr-Sc P(I) ROM			NORWAY SPRUCE & SCOTS PINE from ROMANIA								PLIB
N SPr-Sc P(I) ROM-UKR			NORWAY SPRUCE & SCOTS PINE from ROMANIA & UKRAINE								
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from ROMANIA & UKRAINE; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE	Select Structural	2" & wider	1250	575	100	270	1200	1.5	0.55	0.38	
	No. 1		850	375	100	270	1050	1.4	0.51		
	No. 2		725	325	100	270	950	1.2	0.44		
	No. 3		425	200	100	270	550	1.1	0.40		
	Stud	2" & wider	575	250	100	270	600	1.1	0.40		
	Construction	2" - 4" wide	850	375	100	270	1200	1.1	0.40		
	Standard		475	200	100	270	1000	1	0.37		
	Utility		225	100	100	270	650	1	0.37		
N Spr-Sc P(I) SW			NORWAY SPRUCE & SCOTS PINE from SWEDEN								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from SWEDEN; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1250	550	120	285	1200	1.6	0.58	0.42	
	No. 1		825	375	120	285	1000	1.4	0.51		
	No. 2		575	250	120	285	825	1.2	0.44		
	No. 3		325	150	120	285	475	1.1	0.40		
	Stud	2" & wider	450	200	120	285	525	1.1	0.40		
	Construction	2" - 4" wide	650	300	120	285	1050	1.2	0.44		
	Standard		375	175	120	285	850	1.1	0.40		
	Utility		175	75	120	285	550	1	0.37		
N Spr-S Fir (I) GER			NORWAY SPRUCE & SILVER FIR from GERMANY								PLIB
N Spr-S Fir (I) N FRA			NORWAY SPRUCE & SILVER FIR from NORTHERN FRANCE								
N Spr-S Fir(I) GER N FRA			NORWAY SPRUCE & SILVER FIR from GERMANY & NORTHERN FRANCE								
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	125	355	1100	1.5	0.55	0.42	
	No. 1		725	325	125	355	975	1.4	0.51		
	No. 2		725	325	125	355	950	1.2	0.44		
	No. 3		425	200	125	355	550	1.1	0.40		
	Stud	2" & wider	575	250	125	355	600	1.1	0.40		
	Construction	2" - 4" wide	825	375	125	355	1150	1.1	0.40		
	Standard		475	200	125	355	975	1	0.37		
	Utility		225	100	125	355	650	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
N Spr-Sc P-DF (I) GER	NORWAY SPRUCE, SCOTS PINE & DOUGLAS FIR from GERMANY[5]										PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]; DOUGLAS FIR from FRANCE & GERMANY	Select Structural	2" & wider	1200	550	160	355	1200	1.6	0.58	0.42	
	No. 1		800	375	160	355	1050	1.4	0.51		
	No. 2		700	325	160	355	950	1.1	0.40		
	No. 3		400	175	160	355	550	1	0.37		
	Stud	2" & wider	550	250	160	355	600	1	0.37		
	Construction		800	375	160	355	1150	1.1	0.40		
	Standard	2" - 4" wide	450	200	160	355	975	1	0.37		
	Utility		225	100	160	355	625	0.9	0.33		
N Spr-Sc P-DF-L (I) GER	NORWAY SPRUCE, SCOTS PINE & DOUGLAS FIR from GERMANY[5], EUROPEAN LARCH from AUSTRIA, THE CZECH REPUBLIC & BAVARIA (2x4, 3x4 and 4x4 only)										PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]; DOUGLAS FIR from FRANCE & GERMANY; EUROPEAN LARCH from AUSTRIA, THE CZECH REPUBLIC & BAVARIA (This grademark only available in 2x4, 3x4 and 4x4 sizes)	Select Structural	2" & wider	1200	550	160	355	1200	1.6	0.58	0.42	
	No. 1		800	375	160	355	1050	1.4	0.51		
	No. 2		700	325	160	355	950	1.1	0.40		
	No. 3		400	175	160	355	550	1	0.37		
	Stud	2" & wider	550	250	160	355	600	1	0.37		
	Construction		800	375	160	355	1150	1.1	0.40		
	Standard	2" - 4" wide	450	200	160	355	975	1	0.37		
	Utility		225	100	160	355	625	0.9	0.33		
N Spr-Sc P-DF-S Fir (I) GER	NORWAY SPRUCE, SCOTS PINE, DOUGLAS FIR & SILVER FIR from GERMANY[5]										PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]; DOUGLAS FIR from FRANCE & GERMANY; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	125	355	1100	1.5	0.55	0.42	
	No. 1		725	325	125	355	975	1.4	0.51		
	No. 2		700	325	125	355	950	1.1	0.40		
	No. 3		400	175	125	355	550	1	0.37		
	Stud	2" & wider	550	250	125	355	600	1	0.37		
	Construction		800	375	125	355	1150	1.1	0.40		
	Standard	2" - 4" wide	450	200	125	355	975	1	0.37		
	Utility		225	100	125	355	625	0.9	0.33		
NSPR/SCOTP(I)EST/FIN/GER/LIT/ROM/SW/UKR	NORWAY SPRUCE & SCOTS PINE from ESTONIA, FINLAND, GERMANY[5], LITHUANIA, ROMANIA, SWEDEN & UKRAINE										TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from ESTONIA, LATVIA, & LITHUANIA; NORWAY SPRUCE from FINLAND; NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from SWEDEN; NORWAY SPRUCE from ROMANIA & UKRAINE; SCOTS PINE from ESTONIA, LATVIA, & LITHUANIA; SCOTS PINE from FINLAND; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE	Select Structural	2" & wider	1150	525	100	210	1150	1.5	0.55	0.38	
	No. 1		800	350	100	210	1000	1.4	0.51		
	No. 2		575	250	100	210	825	1.1	0.40		
	No. 3		325	150	100	210	475	1	0.37		
	Stud	2" & wider	450	200	100	210	525	1	0.37		
	Construction		650	300	100	210	1050	1.1	0.40		
	Standard	2" - 4" wide	375	175	100	210	850	1	0.37		
	Utility		175	75	100	210	550	0.9	0.33		

Table 4G

Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
NSPR/SCOTP(I)GER/ROM/SW/UKR		NORWAY SPRUCE & SCOTS PINE from GERMANY[5], ROMANIA, SWEDEN or UKRAINE									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from SWEDEN; NORWAY SPRUCE from ROMANIA & UKRAINE; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN, SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE	Select Structural	2" & wider	1200	550	100	270	1200	1.5	0.55	0.38	
	No. 1		800	375	100	270	1000	1.4	0.51		
	No. 2		575	250	100	270	825	1.1	0.40		
	No. 3		325	150	100	270	475	1	0.37		
	Stud	2" & wider	450	200	100	270	525	1	0.37		
	Construction	2" - 4" wide	650	300	100	270	1050	1.1	0.40		
	Standard		375	175	100	270	850	1	0.37		
	Utility		175	75	100	270	550	0.9	0.33		
NSPR/SCOTP(I)GER/SW		NORWAY SPRUCE & SCOTS PINE from GERMANY[5] or SWEDEN									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from SWEDEN; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1200	550	120	285	1200	1.6	0.58	0.42	
	No. 1		800	375	120	285	1000	1.4	0.51		
	No. 2		575	250	120	285	825	1.1	0.40		
	No. 3		325	150	120	285	475	1	0.37		
	Stud	2" & wider	450	200	120	285	525	1	0.37		
	Construction	2" - 4" wide	650	300	120	285	1050	1.1	0.40		
	Standard		375	175	120	285	850	1	0.37		
	Utility		175	75	120	285	550	0.9	0.33		
NSPR/SCOTP(I)SW		NORWAY SPRUCE & SCOTS PINE from SWEDEN									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from SWEDEN; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1250	550	120	285	1200	1.6	0.58	0.42	
	No. 1		825	375	120	285	1000	1.4	0.51		
	No. 2		575	250	120	285	825	1.2	0.44		
	No. 3		325	150	120	285	475	1.1	0.40		
	Stud	2" & wider	450	200	120	285	525	1.1	0.40		
	Construction	2" - 4" wide	650	300	120	285	1050	1.2	0.44		
	Standard		375	175	120	285	850	1.1	0.40		
	Utility		175	75	120	285	550	1	0.37		
NSPR/SCOTP/SFIR(I)GER		NORWAY SPRUCE, SCOTS PINE & SILVER FIR from GERMANY[5]									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	125	355	1100	1.5	0.55	0.42	
	No. 1		725	325	125	355	975	1.4	0.51		
	No. 2		700	325	125	355	950	1.1	0.40		
	No. 3		400	175	125	355	550	1	0.37		
	Stud	2" & wider	550	250	125	355	600	1	0.37		
	Construction	2" - 4" wide	800	375	125	355	1150	1.1	0.40		
	Standard		450	200	125	355	975	1	0.37		
	Utility		225	100	125	355	625	0.9	0.33		

Table 4G

Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
PP-LP			PONDEROSA PINE & LODGEPOLE PINE from NORTH AMERICA								PLIB, WWPA
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR (SOUTH); WESTERN WOODS	Select Structural	2" & wider	900	400	135	335	1050	1.2	0.44	0.36	
	No. 1		675	300	135	335	950	1.1	0.40		
	No. 2		675	300	135	335	900	1	0.37		
	No. 3		375	175	135	335	525	0.9	0.33		
	Stud	2" & wider	525	225	135	335	575	0.9	0.33		
	Construction	2" - 4" wide	775	350	135	335	1100	1	0.37		
	Standard		425	200	135	335	925	0.9	0.33		
	Utility		200	100	135	335	600	0.8	0.29		
R. PINE/NSPR(N)/SPF/SPF(S)			RED PINE, NORWAY SPRUCE (NORTH), SPRUCE-PINE-FIR, & SPRUCE-PINE-FIR(S) from NORTH AMERICA								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: NORTHERN SPECIES; NORWAY SPRUCE (NORTH); SPRUCE-PINE-FIR; SPRUCE-PINE-FIR(S)	Select Structural	2" & wider	950	425	110	335	1100	1.1	0.40	0.35	
	No. 1		625	275	110	335	850	1.1	0.40		
	No. 2		625	275	110	335	850	1.1	0.40		
	No. 3		350	150	110	335	500	1	0.37		
	Stud	2" & wider	475	225	110	335	550	1	0.37		
	Construction	2" - 4" wide	700	325	110	335	1050	1	0.37		
	Standard		400	175	110	335	875	0.9	0.33		
	Utility		175	75	110	335	575	0.9	0.33		
Sc P (I) EST FIN GER LTH SW			SCOTS PINE from ESTONIA, FINLAND, GERMANY, LITHUANIA, or SWEDEN								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4F: SCOTS PINE from ESTONIA, LATVIA, & LITHUANIA; SCOTS PINE from FINLAND; SCOTS PINE from GERMANY; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1150	525	120	210	1150	1.5	0.55	0.45	
	No. 1		800	350	120	210	1000	1.4	0.51		
	No. 2		575	250	120	210	825	1.1	0.40		
	No. 3		325	150	120	210	475	1	0.37		
	Stud	2" & wider	450	200	120	210	525	1	0.37		
	Construction	2" - 4" wide	650	300	120	210	1050	1.1	0.40		
	Standard		375	175	120	210	850	1	0.37		
	Utility		175	75	120	210	550	0.9	0.33		
Sitka Sp/HF			SITKA SPRUCE & HEM-FIR from U.S.								PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: HEM-FIR; SITKA SPRUCE	Select Structural	2" & wider	1300	575	135	335	1200	1.3	0.47	0.36	
	No. 1		875	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
SPF/SPF-S			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								TP
SPF/SPF(S)			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								PLIB
SPF[S]/SPF			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								WWPA
SPF/SPF-s			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								NLGA
S-P-F/SPFs			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA								NLGA
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH)	Select Structural	2" & wider	1250	575	135	335	1200	1.3	0.47	0.36	
	No. 1		875	400	135	335	1050	1.2	0.44		
	No. 2		775	350	135	335	1000	1.1	0.40		
	No. 3		450	200	135	335	575	1	0.37		
	Stud	2" & wider	600	275	135	335	625	1	0.37		
	Construction	2" - 4" wide	875	400	135	335	1200	1	0.37		
	Standard		500	225	135	335	1000	0.9	0.33		
	Utility		225	100	135	335	675	0.9	0.33		
SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS/EST/FIN/GER/LTH/SW			SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE from ESTONIA, FINLAND, GERMANY, LITHUANIA, or SWEDEN, SCOTS PINE from AUSTRIA, ESTONIA, FINLAND, GERMANY [5], LITHUANIA, or SWEDEN, & SILVER FIR from GERMANY								TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from ESTONIA, LATVIA, & LITHUANIA; NORWAY SPRUCE from FINLAND; NORWAY SPRUCE from GERMANY, NE FRANCE & SWITZERLAND; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from ESTONIA, LATVIA, & LITHUANIA; SCOTS PINE from FINLAND; SCOTS PINE from GERMANY; SCOTS PINE from SWEDEN; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	120	210	1100	1.3	0.47	0.36	
	No. 1		725	325	120	210	975	1.2	0.44		
	No. 2		575	250	120	210	825	1.1	0.40		
	No. 3		325	150	120	210	475	1	0.37		
	Stud	2" & wider	450	200	120	210	525	1	0.37		
	Construction	2" - 4" wide	650	300	120	210	1050	1	0.37		
	Standard		375	175	120	210	850	0.9	0.33		
	Utility		175	75	120	210	550	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS/FIN/GER/SW		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE from FINLAND, GERMANY, LITHUANIA, or SWEDEN, SCOTS PINE from AUSTRIA, FINLAND, GERMANY [5], LITHUANIA, or SWEDEN, & SILVER FIR from GERMANY									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from FINLAND; NORWAY SPRUCE from GERMANY, NE FRANCE & SWITZERLAND; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from FINLAND; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	120	210	1100	1.3	0.47	0.36	
	No. 1		725	325	120	210	975	1.2	0.44		
	No. 2		575	250	120	210	825	1.1	0.40		
	No. 3		325	150	120	210	475	1	0.37		
	Stud	2" & wider	450	200	120	210	525	1	0.37		
	Construction	2" - 4" wide	650	300	120	210	1050	1	0.37		
	Standard		375	175	120	210	850	0.9	0.33		
	Utility		175	75	120	210	550	0.9	0.33		
SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS/GER/ROM/SW/UKR		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE from GERMANY, ROMANIA, SWEDEN, or UKRAINE, SCOTS PINE from AUSTRIA, GERMANY [5], ROMANIA, SWEDEN, or UKRAINE, or SILVER FIR from GERMANY									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from GERMANY, NE FRANCE & SWITZERLAND; NORWAY SPRUCE from ROMANIA & UKRAINE; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	100	260	1100	1.3	0.47	0.36	
	No. 1		725	325	100	260	975	1.2	0.44		
	No. 2		575	250	100	260	825	1.1	0.40		
	No. 3		325	150	100	260	475	1	0.37		
	Stud	2" & wider	450	200	100	260	525	1	0.37		
	Construction	2" - 4" wide	650	300	100	260	1050	1	0.37		
	Standard		375	175	100	260	850	0.9	0.33		
	Utility		175	75	100	260	550	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending F_b	Tension parallel to grain F_t	Shear parallel to grain F_v	Compression perpendicular to grain $F_{c\perp}$	Compression parallel to grain F_c	Modulus of Elasticity E	Modulus of Elasticity E_{min}	G	
SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS/EST/FIN/GER/LTH/ROM/SW/UKR		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, AUSTRIAN SPRUCE from AUSTRIA, NORWAY SPRUCE from ESTONIA, FINLAND, GERMANY, LITHUANIA, or SWEDEN, SCOTS PINE from AUSTRIA, ESTONIA, FINLAND, GERMANY [5], LITHUANIA, or SWEDEN, & SILVER FIR from GERMANY									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); AUSTRIAN SPRUCE from AUSTRIA & THE CZECH REPUBLIC; NORWAY SPRUCE from ESTONIA, LATVIA, & LITHUANIA; NORWAY SPRUCE from FINLAND; NORWAY SPRUCE from GERMANY, NE FRANCE & SWITZERLAND; NORWAY SPRUCE from ROMANIA & UKRAINE; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from ESTONIA, LATVIA, & LITHUANIA; SCOTS PINE from FINLAND; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN; SILVER FIR (*Abies alba*) from GERMANY, NE FRANCE, & SWITZERLAND	Select Structural	2" & wider	950	425	100	210	1100	1.3	0.47	0.36	
	No. 1		725	325	100	210	975	1.2	0.44		
	No. 2		575	250	100	210	825	1.1	0.40		
	No. 3		325	150	100	210	475	1	0.37		
	Stud	2" & wider	450	200	100	210	525	1	0.37		
	Construction	2" - 4" wide	650	300	100	210	1050	1	0.37		
	Standard		375	175	100	210	850	0.9	0.33		
	Utility		175	75	100	210	550	0.9	0.33		
S-P-F/ NSpr(N)		SPRUCE-PINE-FIR & NORWAY SPRUCE (NORTH) from CANADA									NLGA
SPF/NSpr(N)		SPRUCE-PINE-FIR & NORWAY SPRUCE (NORTH) from CANADA									
Tabulated design values are the minimum values for from the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR; NORWAY SPRUCE (NORTH)	Select Structural	2" & wider	950	600	135	410	1100	1.5	0.55	0.40	
	No. 1		650	425	135	410	900	1.3	0.47		
	No. 2		650	425	135	410	900	1.3	0.47		
	No. 3		375	250	135	410	525	1.2	0.44		
	Stud	2" & wider	500	325	135	410	575	1.2	0.44		
	Construction	2" - 4" wide	725	475	135	410	1100	1.2	0.44		
	Standard		400	275	135	410	925	1.1	0.40		
	Utility		200	125	135	410	600	1.1	0.40		
S-P-F/ SPFs/NSpr(N)		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (S) From NORTH AMERICA, & NORWAY SPRUCE (NORTH) from NORTH AMERICA									NLGA
Tabulated desing values are the minimum values for the following species and commercial grades in Table 4A: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (S); NORWAY SPRUCE (NORTH)	Select Structural	2" & wider	950	575	135	335	1100	1.3	0.47	0.36	
	No. 1		650	400	135	335	900	1.2	0.44		
	No. 2		650	350	135	335	900	1.1	0.40		
	No. 3		375	200	135	335	525	1	0.37		
	Stud	2" & wider	500	275	135	335	575	1	0.37		
	Construction	2" - 4" wide	725	400	135	335	1100	1	0.37		
	Standard		400	225	135	335	925	0.9	0.33		
	Utility		200	100	135	335	600	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
			F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
SPF/SPF-S NSPR/SCOTP(I)GER		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, NORWAY SPRUCE, & SCOTS PINE from GERMANY[5]									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; SCOTS PINE from GERMANY[5]	Select Structural	2" & wider	1200	550	135	335	1200	1.3	0.47	0.36	
	No. 1		800	375	135	335	1050	1.2	0.44		
	No. 2		700	325	135	335	950	1.1	0.40		
	No. 3		400	175	135	335	550	1	0.37		
	Stud	2" & wider	550	250	135	335	600	1	0.37		
	Construction	2" - 4" wide	800	375	135	335	1150	1	0.37		
	Standard		450	200	135	335	975	0.9	0.33		
	Utility		225	100	135	335	625	0.9	0.33		
SPF/SPF-S NSPR/SCOTP(I)GER/ROM/SW/UKR		SPRUCE-PINE-FIR & SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, NORWAY SPRUCE, SCOTS PINE from GERMANY[5], ROMANIA, SWEDEN, & UKRAINE									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); NORWAY SPRUCE from GERMANY, NE FRANCE, & SWITZERLAND; NORWAY SPRUCE from ROMANIA & UKRAINE; NORWAY SPRUCE from SWEDEN; SCOTS PINE from AUSTRIA & THE CZECH REPUBLIC, ROMANIA, & UKRAINE; SCOTS PINE from GERMANY[5]; SCOTS PINE from SWEDEN	Select Structural	2" & wider	1200	550	100	270	1200	1.3	0.47	0.36	
	No. 1		800	375	100	270	1000	1.2	0.44		
	No. 2		575	250	100	270	825	1.1	0.40		
	No. 3		325	150	100	270	475	1	0.37		
	Stud	2" & wider	450	200	100	270	525	1	0.37		
	Construction	2" - 4" wide	650	300	100	270	1050	1	0.37		
	Standard		375	175	100	270	850	0.9	0.33		
	Utility		175	75	100	270	550	0.9	0.33		
SPF/SPF-S NSPR/SCOTP(I)GER/SW		SPRUCE-PINE-FIR, SPRUCE-PINE-FIR (SOUTH) from NORTH AMERICA, NORWAY SPRUCE, SCOTS PINE from GERMANY[5] & SWEDEN									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4F: SPRUCE-PINE-FIR; SPRUCE-PINE-FIR (SOUTH); NORWAY SPRUCE from GERMANY[5] & SWEDEN; SCOTS PINE from GERMANY[5] & SWEDEN	Select Structural	2" & wider	1200	550	120	285	1200	1.3	0.47	0.36	
	No. 1		800	375	120	285	1000	1.2	0.44		
	No. 2		575	250	120	285	825	1.1	0.40		
	No. 3		325	150	120	285	475	1	0.37		
	Stud	2" & wider	450	200	120	285	525	1	0.37		
	Construction	2" - 4" wide	650	300	120	285	1050	1	0.37		
	Standard		375	175	120	285	850	0.9	0.33		
	Utility		175	75	120	285	550	0.9	0.33		

Table 4G **Reference Design Values for Multi-Species and Country Grademarked Visually Graded Dimension Lumber (2" - 4" thick)[1,2,3]**

(Tabulated design values are for normal load duration and dry service conditions. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4G ADJUSTMENT FACTORS

Multi-Species and Country Label	Commercial Grade	Size Classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grade Stamping Agency
			Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
			F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
SYP/WEST WOODS/NORTH SPECIES		SOUTHERN PINE, WESTERN WOODS, & NORTHERN SPECIES from NORTH AMERICA									TP
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A & 4B: SOUTHERN PINE; WESTERN WOODS; NORTHERN SPECIES	Select Structural	2" & wider	900	400	110	335	1050	1.1	0.40	0.35	
	No. 1		625	275	110	335	850	1.1	0.40		
	No. 2		625	275	110	335	850	1	0.37		
	No. 3		350	150	110	335	500	0.9	0.33		
	Stud	2" & wider	475	225	110	335	550	0.9	0.33		
	Construction	2" - 4" wide	700	325	110	335	1050	1	0.37		
	Standard		400	175	110	335	875	0.9	0.33		
	Utility		175	75	110	335	575	0.8	0.29		
WH-S Fir		WESTERN HEMLOCK & PACIFIC SILVER FIR from U.S.									PLIB
Tabulated design values are the minimum values for the following species and commercial grades in Table 4A: HEM-FIR	Select Structural	2" & wider	1400	925	150	405	1500	1.6	0.58	0.43	
	No. 1 & Btr		1100	725	150	405	1350	1.5	0.55		
	No. 1		975	625	150	405	1350	1.5	0.55		
	No. 2		850	525	150	405	1300	1.3	0.47		
	No. 3		500	300	150	405	725	1.2	0.44		
	Stud	2" & wider	675	400	150	405	800	1.2	0.44		
	Construction	2" - 4" wide	975	600	150	405	1550	1.3	0.47		
	Standard		550	325	150	405	1300	1.2	0.44		
	Utility		250	150	150	405	850	1.1	0.40		

Table 4G Footnotes

1. Reference design values are applicable to lumber that will be used under dry conditions such as in most covered structures. For 2" to 4" thick lumber the DRY dressed sizes shall be used (see Table 1A) regardless of the moisture content at the time of manufacture or use. In calculating design values, the natural gain in strength and stiffness that occurs as lumber dries has been taken into consideration as well as the reduction in size that occurs when unseasoned lumber shrinks. The gain in the load carrying capacity due to increased strength and stiffness resulting from drying more than offsets the design effect of size reductions due to shrinkage.

2. The ALSC Board of Review permits the use of combination stamps in certain instances, provided that the associated Reference Design Value elements for such combination-stamped lumber be assigned based on the lowest value among the combined species/regions. For the Species and/or Countries combinations listed, each of the individual Reference Design Value (RDV) elements from Tables 4A, 4B, and 4F (i.e. - F_b, F_t, F_v, $F_{c\perp}$, F_c, E, E_{min}, and G) have been compared on its own merit for each species/regions listed on the stamp; the lowest value found and tabulated is the applicable value to be used for each Species and/or Countries, Region, and Agency category in the table. RDVs are only available for countries/regions that have completed ALSC Board of Review approved sampling and testing plans. Not all species group/grade/size combinations listed may be available at any given time.

3. The three entries on the black bar show in order: 1) The label stamped on the lumber; 2) The intended mix of species and countries; and 3) Agency stamping the lumber.

4. Specific gravity, G, based on weight and volume when oven-dry.

5. SCOTS PINE from GERMANY does not include states of Baden-Wurttemberg and Saarland.

AMERICAN WOOD COUNCIL

April 2019

Errata

to the 1991 to 2018 Editions of the *Design Values for Wood Construction*

(a supplement to the *National Design Specification® (NDS®) for Wood Construction*)

Modify the following design value in Table 4D for No. 1 Eastern Hemlock Posts & Timbers:

Table 4D Reference Design Values for Visually Graded Timbers (5" x 5" and larger)[1,3]

(Tabulated design values are for normal load duration and dry service conditions, unless specified otherwise. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4D ADJUSTMENT FACTORS

Species and commercial grade	Size classification	Design values in pounds per square inch (psi)							Specific Gravity[4]	Grading Rules Agency
		Bending	Tension parallel to grain	Shear parallel to grain	Compression perpendicular to grain	Compression parallel to grain	Modulus of Elasticity			
		F_b	F_t	F_v	$F_{c\perp}$	F_c	E	E_{min}	G	
EASTERN HEMLOCK										
Select Structural	Posts and Timbers	1,250	850	155	550	1,000	1,200,000	440,000	0.41	NELMA
No. 1		1,050	700	155	~~500~~ 550	875	1,200,000	440,000		
No.2		600	400	155	550	400	900,000	330,000		