



June 2021

**ADDENDUM**  
**to the 2021 and previous versions of**  
***DESIGN VALUES FOR JOISTS AND RAFTERS***  
**(a supplement to Span Tables for Joists and Rafters)**

| <b><u>Page</u></b> | <b><u>Revision</u></b>  |
|--------------------|---|
| 21                 | Add new design values to TABLE W-1 for Non-North American Visually Graded Dimension Lumber (from Table 4F 2018 NDS Supplement) and for Multi-Species and Country Graded Visually Graded Dimension Lumber (from new Table 4G per the Addendum to the 2018 NDS Supplement). |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade   | Size  | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|-------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |       | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>AUSTRIAN SPRUCE - Austria &amp; The Czech Republic</b> |       |                                |              |               |  |                          |                      |
| Select Structural   | 2x4   | 2,590                          | 2,975        | 3,235         | 260  | 1,700,000                | WCLIB                |
| No. 1   |       | 1,725                          | 1,985        | 2,155         | 260  | 1,600,000                |                      |
| No. 2   |       | 1,595                          | 1,835        | 1,995         | 260  | 1,500,000                |                      |
| No. 3   |       | 905                            | 1,040        | 1,130         | 260  | 1,300,000                |                      |
| Stud  |       | 915                            | 1,055        | 1,145         | 260  | 1,300,000                |                      |
| Construction  |       | 1,210                          | 1,390        | 1,510         | 260  | 1,400,000                |                      |
| Standard  |       | 660                            | 760          | 825           | 260  | 1,300,000                |                      |
| Utility   |       | 315                            | 365          | 395           | 260  | 1,200,000                |                      |
| Select Structural   |       | 2x6                            | 2,245        | 2,580         | 2,805  | 260                      |                      |
| No. 1   | 1,495 |                                | 1,720        | 1,870         | 260  | 1,600,000                |                      |
| No. 2   | 1,385 |                                | 1,590        | 1,730         | 260  | 1,500,000                |                      |
| No. 3   | 785   |                                | 905          | 980           | 260  | 1,300,000                |                      |
| Stud  | 835   | 960                            | 1,040        | 260           | 1,300,000  |                          |                      |
| Select Structural   | 2x8   | 2,070                          | 2,380        | 2,590         | 260  | 1,700,000                |                      |
| No. 1   |       | 1,380                          | 1,585        | 1,725         | 260  | 1,600,000                |                      |
| No. 2   |       | 1,275                          | 1,470        | 1,595         | 260  | 1,500,000                |                      |
| No. 3   |       | 725                            | 835          | 905           | 260  | 1,300,000                |                      |
| Select Structural   | 2x10  | 1,900                          | 2,180        | 2,370         | 260  | 1,700,000                |                      |
| No. 1   |       | 1,265                          | 1,455        | 1,580         | 260  | 1,600,000                |                      |
| No. 2   |       | 1,170                          | 1,345        | 1,465         | 260  | 1,500,000                |                      |
| No. 3   |       | 665                            | 765          | 830           | 260  | 1,300,000                |                      |
| Select Structural   | 2x12  | 1,725                          | 1,985        | 2,155         | 260  | 1,700,000                |                      |
| No. 1   |       | 1,150                          | 1,325        | 1,440         | 260  | 1,600,000                |                      |
| No. 2   |       | 1,065                          | 1,225        | 1,330         | 260  | 1,500,000                |                      |
| No. 3   |       | 605                            | 695          | 755           | 260  | 1,300,000                |                      |
| <b>DOUGLAS FIR - France &amp; Germany</b>                 |       |                                |              |               |  |                          |                      |
| Select Structural   | 2x4   | 2,590                          | 2,975        | 3,235         | 540  | 1,900,000                | WCLIB                |
| No. 1   |       | 1,680                          | 1,935        | 2,100         | 540  | 1,700,000                |                      |
| No. 2   |       | 1,425                          | 1,635        | 1,780         | 540  | 1,500,000                |                      |
| No. 3   |       | 820                            | 940          | 1,025         | 540  | 1,300,000                |                      |
| Stud  |       | 820                            | 945          | 1,030         | 540  | 1,300,000                |                      |
| Construction  |       | 1,065                          | 1,225        | 1,330         | 540  | 1,400,000                |                      |
| Standard  |       | 605                            | 695          | 755           | 540  | 1,300,000                |                      |
| Utility   |       | 290                            | 330          | 360           | 540  | 1,200,000                |                      |
| Select Structural   |       | 2x6                            | 2,245        | 2,580         | 2,805  | 540                      |                      |
| No. 1   | 1,460 |                                | 1,675        | 1,820         | 540  | 1,700,000                |                      |
| No. 2   | 1,235 |                                | 1,420        | 1,540         | 540  | 1,500,000                |                      |
| No. 3   | 710   |                                | 815          | 890           | 540  | 1,300,000                |                      |
| Stud  | 750   | 860                            | 935          | 540           | 1,300,000  |                          |                      |
| Select Structural   | 2x8   | 2,070                          | 2,380        | 2,590         | 540  | 1,900,000                |                      |
| No. 1   |       | 1,345                          | 1,545        | 1,680         | 540  | 1,700,000                |                      |
| No. 2   |       | 1,140                          | 1,310        | 1,425         | 540  | 1,500,000                |                      |
| No. 3   |       | 655                            | 755          | 820           | 540  | 1,300,000                |                      |
| Select Structural   | 2x10  | 1,900                          | 2,180        | 2,370         | 540  | 1,900,000                |                      |
| No. 1   |       | 1,235                          | 1,420        | 1,540         | 540  | 1,700,000                |                      |
| No. 2   |       | 1,045                          | 1,200        | 1,305         | 540  | 1,500,000                |                      |
| No. 3   |       | 600                            | 690          | 750           | 540  | 1,300,000                |                      |
| Select Structural   | 2x12  | 1,725                          | 1,985        | 2,155         | 540  | 1,900,000                |                      |
| No. 1   |       | 1,120                          | 1,290        | 1,400         | 540  | 1,700,000                |                      |
| No. 2   |       | 950                            | 1,090        | 1,185         | 540  | 1,500,000                |                      |
| No. 3   |       | 545                            | 630          | 685           | 540  | 1,300,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade  | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>DOUGLAS FIR/EUROPEAN LARCH - Austria, The Czech Republic, &amp; Bavaria<sup>3</sup></b> |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 2,185                          | 2,515        | 2,730         | 440  | 1,800,000                | WCLIB                |
| No. 1  |      | 1,610                          | 1,850        | 2,015         | 440  | 1,700,000                |                      |
| No. 2  |      | 1,555                          | 1,785        | 1,940         | 440  | 1,600,000                |                      |
| No. 3  |      | 890                            | 1,025        | 1,115         | 440  | 1,400,000                |                      |
| Stud   |      | 920                            | 1,060        | 1,150         | 440  | 1,400,000                |                      |
| Construction   |      | 1,150                          | 1,325        | 1,440         | 440  | 1,500,000                |                      |
| Standard   |      | 660                            | 760          | 825           | 440  | 1,300,000                |                      |
| Utility  |      | 315                            | 365          | 395           | 440  | 1,300,000                |                      |
| <b>MONTANE PINE - South Africa</b>   |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 1,680                          | 1,935        | 2,100         | 325  | 1,300,000                | WCLIB                |
| No. 1  |      | 1,120                          | 1,290        | 1,400         | 325  | 1,100,000                |                      |
| No. 2  |      | 1,035                          | 1,190        | 1,295         | 325  | 1,000,000                |                      |
| No. 3  |      | 605                            | 695          | 755           | 325  | 900,000                  |                      |
| Stud   |      | 600                            | 690          | 750           | 325  | 900,000                  |                      |
| Construction   |      | 775                            | 895          | 970           | 325  | 900,000                  |                      |
| Standard   |      | 430                            | 495          | 540           | 325  | 800,000                  |                      |
| Utility  |      | 200                            | 230          | 250           | 325  | 800,000                  |                      |
| Select Structural  | 2x6  | 1,460                          | 1,675        | 1,820         | 325  | 1,300,000                | WCLIB                |
| No. 1  |      | 970                            | 1,120        | 1,215         | 325  | 1,100,000                |                      |
| No. 2  |      | 895                            | 1,030        | 1,120         | 325  | 1,000,000                |                      |
| No. 3  |      | 525                            | 600          | 655           | 325  | 900,000                  |                      |
| Stud   |      | 545                            | 630          | 685           | 325  | 900,000                  |                      |
| Select Structural  | 2x8  | 1,345                          | 1,545        | 1,680         | 325  | 1,300,000                |                      |
| No. 1  |      | 895                            | 1,030        | 1,120         | 325  | 1,100,000                |                      |
| No. 2  |      | 830                            | 950          | 1,035         | 325  | 1,000,000                |                      |
| No. 3  |      | 485                            | 555          | 605           | 325  | 900,000                  |                      |
| Select Structural  | 2x10 | 1,235                          | 1,420        | 1,540         | 325  | 1,300,000                |                      |
| No. 1  |      | 820                            | 945          | 1,030         | 325  | 1,100,000                |                      |
| No. 2  |      | 760                            | 875          | 950           | 325  | 1,000,000                |                      |
| No. 3  |      | 445                            | 510          | 555           | 325  | 900,000                  |                      |
| Select Structural  | 2x12 | 1,120                          | 1,290        | 1,400         | 325  | 1,300,000                |                      |
| No. 1  |      | 750                            | 860          | 935           | 325  | 1,100,000                |                      |
| No. 2  |      | 690                            | 795          | 865           | 325  | 1,000,000                |                      |
| No. 3  |      | 405                            | 465          | 505           | 325  | 900,000                  |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade                                       | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NORWAY SPRUCE - Estonia, Latvia, &amp; Lithuania</b> |      |                                |              |               |  |                          |                      |
| Select Structural                                       | 2x4  | 2,070                          | 2,380        | 2,590         | 430  | 1,600,000                | WCLIB                |
| No. 1   |      | 1,465                          | 1,685        | 1,835         | 430  | 1,400,000                |                      |
| No. 2   |      | 1,380                          | 1,585        | 1,725         | 430  | 1,300,000                |                      |
| No. 3   |      | 775                            | 895          | 970           | 430  | 1,100,000                |                      |
| Stud  |      | 790                            | 910          | 990           | 430  | 1,100,000                |                      |
| Construction Standard                                   |      | 1,035                          | 1,190        | 1,295         | 430  | 1,200,000                |                      |
| Utility   |      | 575                            | 660          | 720           | 430  | 1,100,000                |                      |
| Utility   |      | 290                            | 330          | 360           | 430  | 1,000,000                |                      |
| Select Structural                                       | 2x6  | 1,795                          | 2,065        | 2,245         | 430  | 1,600,000                |                      |
| No. 1   |      | 1,270                          | 1,460        | 1,590         | 430  | 1,400,000                |                      |
| No. 2   |      | 1,195                          | 1,375        | 1,495         | 430  | 1,300,000                |                      |
| No. 3   |      | 675                            | 775          | 840           | 430  | 1,100,000                |                      |
| Stud  |      | 720                            | 825          | 900           | 430  | 1,100,000                |                      |
| Select Structural                                       | 2x8  | 1,655                          | 1,905        | 2,070         | 430  | 1,600,000                |                      |
| No. 1   |      | 1,175                          | 1,350        | 1,465         | 430  | 1,400,000                |                      |
| No. 2   |      | 1,105                          | 1,270        | 1,380         | 430  | 1,300,000                |                      |
| No. 3   |      | 620                            | 715          | 775           | 430  | 1,100,000                |                      |
| Select Structural                                       | 2x10 | 1,520                          | 1,745        | 1,900         | 430  | 1,600,000                |                      |
| No. 1   |      | 1,075                          | 1,235        | 1,345         | 430  | 1,400,000                |                      |
| No. 2   |      | 1,010                          | 1,165        | 1,265         | 430  | 1,300,000                |                      |
| No. 3   |      | 570                            | 655          | 710           | 430  | 1,100,000                |                      |
| Select Structural                                       | 2x12 | 1,380                          | 1,585        | 1,725         | 430  | 1,600,000                |                      |
| No. 1   |      | 980                            | 1,125        | 1,220         | 430  | 1,400,000                |                      |
| No. 2   |      | 920                            | 1,060        | 1,150         | 430  | 1,300,000                |                      |
| No. 3   |      | 520                            | 595          | 645           | 430  | 1,100,000                |                      |
| <b>NORWAY SPRUCE - Finland</b>                          |      |                                |              |               |  |                          |                      |
| Select Structural                                       | 2x4  | 2,330                          | 2,680        | 2,910         | 220  | 1,500,000                |                      |
| No. 1   |      | 1,425                          | 1,635        | 1,780         | 220  | 1,400,000                |                      |
| No. 2   |      | 1,080                          | 1,240        | 1,350         | 220  | 1,200,000                |                      |
| No. 3   |      | 645                            | 745          | 810           | 220  | 1,100,000                |                      |
| Stud  |      | 725                            | 835          | 910           | 220  | 1,100,000                |                      |
| Construction Standard                                   |      | 835                            | 960          | 1,040         | 220  | 1,100,000                |                      |
| Utility   |      | 460                            | 530          | 575           | 220  | 1,000,000                |                      |
| Utility   |      | 230                            | 265          | 290           | 220  | 1,000,000                |                      |
| Select Structural                                       | 2x6  | 2,020                          | 2,320        | 2,525         | 220  | 1,500,000                |                      |
| No. 1   |      | 1,235                          | 1,420        | 1,540         | 220  | 1,400,000                |                      |
| No. 2   |      | 935                            | 1,075        | 1,170         | 220  | 1,200,000                |                      |
| No. 3   |      | 560                            | 645          | 700           | 220  | 1,100,000                |                      |
| Stud  |      | 660                            | 760          | 825           | 220  | 1,100,000                |                      |
| Select Structural                                       | 2x8  | 1,865                          | 2,140        | 2,330         | 220  | 1,500,000                |                      |
| No. 1   |      | 1,140                          | 1,310        | 1,425         | 220  | 1,400,000                |                      |
| No. 2   |      | 865                            | 990          | 1,080         | 220  | 1,200,000                |                      |
| No. 3   |      | 520                            | 595          | 645           | 220  | 1,100,000                |                      |
| Select Structural                                       | 2x10 | 1,710                          | 1,965        | 2,135         | 220  | 1,500,000                |                      |
| No. 1   |      | 1,045                          | 1,200        | 1,305         | 220  | 1,400,000                |                      |
| No. 2   |      | 790                            | 910          | 990           | 220  | 1,200,000                |                      |
| No. 3   |      | 475                            | 545          | 595           | 220  | 1,100,000                |                      |
| Select Structural                                       | 2x12 | 1,555                          | 1,785        | 1,940         | 220  | 1,500,000                |                      |
| No. 1   |      | 950                            | 1,090        | 1,185         | 220  | 1,400,000                |                      |
| No. 2   |      | 720                            | 825          | 900           | 220  | 1,200,000                |                      |
| No. 3   |      | 430                            | 495          | 540           | 220  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade  | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NORWAY SPRUCE - Germany, NE France, &amp; Switzerland</b> |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                | WCLIB                |
| No. 1  |      | 1,425                          | 1,635        | 1,780         | 355  | 1,400,000                |                      |
| No. 2  |      | 1,250                          | 1,440        | 1,565         | 355  | 1,200,000                |                      |
| No. 3  |      | 735                            | 845          | 915           | 355  | 1,100,000                |                      |
| Stud   |      | 725                            | 835          | 910           | 355  | 1,100,000                |                      |
| Construction   |      | 950                            | 1,090        | 1,185         | 355  | 1,100,000                |                      |
| Standard   |      | 545                            | 630          | 685           | 355  | 1,000,000                |                      |
| Utility  |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural  | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1  |      | 1,235                          | 1,420        | 1,540         | 355  | 1,400,000                |                      |
| No. 2  |      | 1,085                          | 1,245        | 1,355         | 355  | 1,200,000                |                      |
| No. 3  |      | 635                            | 730          | 795           | 355  | 1,100,000                |                      |
| Stud   | 660  | 760                            | 825          | 355           | 1,100,000  |                          |                      |
| Select Structural  | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1  |      | 1,140                          | 1,310        | 1,425         | 355  | 1,400,000                |                      |
| No. 2  |      | 1,000                          | 1,150        | 1,250         | 355  | 1,200,000                |                      |
| No. 3  |      | 585                            | 675          | 735           | 355  | 1,100,000                |                      |
| Select Structural  | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1  |      | 1,045                          | 1,200        | 1,305         | 355  | 1,400,000                |                      |
| No. 2  |      | 915                            | 1,055        | 1,145         | 355  | 1,200,000                |                      |
| No. 3  |      | 540                            | 620          | 670           | 355  | 1,100,000                |                      |
| Select Structural  | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1  |      | 950                            | 1,090        | 1,185         | 355  | 1,400,000                |                      |
| No. 2  |      | 835                            | 960          | 1,040         | 355  | 1,200,000                |                      |
| No. 3  |      | 490                            | 560          | 610           | 355  | 1,100,000                |                      |
| <b>NORWAY SPRUCE - Norway</b>                                |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 2,675                          | 3,075        | 3,340         | 360  | 1,800,000                | WCLIB                |
| No. 1  |      | 1,725                          | 1,985        | 2,155         | 360  | 1,500,000                |                      |
| No. 2  |      | 1,380                          | 1,585        | 1,725         | 360  | 1,300,000                |                      |
| No. 3  |      | 820                            | 940          | 1,025         | 360  | 1,200,000                |                      |
| Stud   |      | 790                            | 910          | 990           | 360  | 1,200,000                |                      |
| Construction   |      | 1,065                          | 1,225        | 1,330         | 360  | 1,200,000                |                      |
| Standard   |      | 605                            | 695          | 755           | 360  | 1,100,000                |                      |
| Utility  |      | 290                            | 330          | 360           | 360  | 1,000,000                |                      |
| Select Structural  | 2x6  | 2,315                          | 2,665        | 2,895         | 360  | 1,800,000                |                      |
| No. 1  |      | 1,495                          | 1,720        | 1,870         | 360  | 1,500,000                |                      |
| No. 2  |      | 1,195                          | 1,375        | 1,495         | 360  | 1,300,000                |                      |
| No. 3  |      | 710                            | 815          | 890           | 360  | 1,200,000                |                      |
| Stud   | 720  | 825                            | 900          | 360           | 1,200,000  |                          |                      |
| Select Structural  | 2x8  | 2,140                          | 2,460        | 2,675         | 360  | 1,800,000                |                      |
| No. 1  |      | 1,380                          | 1,585        | 1,725         | 360  | 1,500,000                |                      |
| No. 2  |      | 1,105                          | 1,270        | 1,380         | 360  | 1,300,000                |                      |
| No. 3  |      | 655                            | 755          | 820           | 360  | 1,200,000                |                      |
| Select Structural  | 2x10 | 1,960                          | 2,255        | 2,450         | 360  | 1,800,000                |                      |
| No. 1  |      | 1,265                          | 1,455        | 1,580         | 360  | 1,500,000                |                      |
| No. 2  |      | 1,010                          | 1,165        | 1,265         | 360  | 1,300,000                |                      |
| No. 3  |      | 600                            | 690          | 750           | 360  | 1,200,000                |                      |
| Select Structural  | 2x12 | 1,785                          | 2,050        | 2,230         | 360  | 1,800,000                |                      |
| No. 1  |      | 1,150                          | 1,325        | 1,440         | 360  | 1,500,000                |                      |
| No. 2  |      | 920                            | 1,060        | 1,150         | 360  | 1,300,000                |                      |
| No. 3  |      | 545                            | 630          | 685           | 360  | 1,200,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade                            | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NORWAY SPRUCE - Romania &amp; Ukraine</b> |      |                                |              |               |  |                          |                      |
| Select Structural                            | 2x4  | 2,155                          | 2,480        | 2,695         | 275  | 1,500,000                | WCLIB                |
| No. 1  |      | 1,465                          | 1,685        | 1,835         | 275  | 1,400,000                |                      |
| No. 2  |      | 1,250                          | 1,440        | 1,565         | 275  | 1,200,000                |                      |
| No. 3  |      | 735                            | 845          | 915           | 275  | 1,100,000                |                      |
| Stud   |      | 725                            | 835          | 910           | 275  | 1,100,000                |                      |
| Construction Standard                        |      | 980                            | 1,125        | 1,220         | 275  | 1,100,000                |                      |
| Utility                                      |      | 545                            | 630          | 685           | 275  | 1,000,000                |                      |
| Utility                                      |      | 260                            | 300          | 325           | 275  | 1,000,000                |                      |
| Select Structural                            | 2x6  | 1,870                          | 2,150        | 2,335         | 275  | 1,500,000                |                      |
| No. 1  |      | 1,270                          | 1,460        | 1,590         | 275  | 1,400,000                |                      |
| No. 2  |      | 1,085                          | 1,245        | 1,355         | 275  | 1,200,000                |                      |
| No. 3  |      | 635                            | 730          | 795           | 275  | 1,100,000                |                      |
| Stud   | 660  | 760                            | 825          | 275           | 1,100,000  |                          |                      |
| Select Structural                            | 2x8  | 1,725                          | 1,985        | 2,155         | 275  | 1,500,000                |                      |
| No. 1  |      | 1,175                          | 1,350        | 1,465         | 275  | 1,400,000                |                      |
| No. 2  |      | 1,000                          | 1,150        | 1,250         | 275  | 1,200,000                |                      |
| No. 3  |      | 585                            | 675          | 735           | 275  | 1,100,000                |                      |
| Select Structural                            | 2x10 | 1,580                          | 1,820        | 1,975         | 275  | 1,500,000                |                      |
| No. 1  |      | 1,075                          | 1,235        | 1,345         | 275  | 1,400,000                |                      |
| No. 2  |      | 915                            | 1,055        | 1,145         | 275  | 1,200,000                |                      |
| No. 3  |      | 540                            | 620          | 670           | 275  | 1,100,000                |                      |
| Select Structural                            | 2x12 | 1,440                          | 1,655        | 1,795         | 275  | 1,500,000                |                      |
| No. 1  |      | 980                            | 1,125        | 1,220         | 275  | 1,400,000                |                      |
| No. 2  |      | 835                            | 960          | 1,040         | 275  | 1,200,000                |                      |
| No. 3  |      | 490                            | 560          | 610           | 275  | 1,100,000                |                      |
| <b>NORWAY SPRUCE - Sweden</b>                |      |                                |              |               |  |                          |                      |
| Select Structural                            | 2x4  | 2,155                          | 2,480        | 2,695         | 285  | 1,600,000                | WCLIB                |
| No. 1  |      | 1,425                          | 1,635        | 1,780         | 285  | 1,400,000                |                      |
| No. 2  |      | 1,165                          | 1,340        | 1,455         | 285  | 1,200,000                |                      |
| No. 3  |      | 690                            | 795          | 865           | 285  | 1,100,000                |                      |
| Stud   |      | 695                            | 800          | 870           | 285  | 1,100,000                |                      |
| Construction Standard                        |      | 890                            | 1,025        | 1,115         | 285  | 1,200,000                |                      |
| Utility                                      |      | 490                            | 560          | 610           | 285  | 1,100,000                |                      |
| Utility                                      |      | 230                            | 265          | 290           | 285  | 1,000,000                |                      |
| Select Structural                            | 2x6  | 1,870                          | 2,150        | 2,335         | 285  | 1,600,000                |                      |
| No. 1  |      | 1,235                          | 1,420        | 1,540         | 285  | 1,400,000                |                      |
| No. 2  |      | 1,010                          | 1,160        | 1,260         | 285  | 1,200,000                |                      |
| No. 3  |      | 600                            | 690          | 750           | 285  | 1,100,000                |                      |
| Stud   | 635  | 725                            | 790          | 285           | 1,100,000  |                          |                      |
| Select Structural                            | 2x8  | 1,725                          | 1,985        | 2,155         | 285  | 1,600,000                |                      |
| No. 1  |      | 1,140                          | 1,310        | 1,425         | 285  | 1,400,000                |                      |
| No. 2  |      | 930                            | 1,070        | 1,165         | 285  | 1,200,000                |                      |
| No. 3  |      | 550                            | 635          | 690           | 285  | 1,100,000                |                      |
| Select Structural                            | 2x10 | 1,580                          | 1,820        | 1,975         | 285  | 1,600,000                |                      |
| No. 1  |      | 1,045                          | 1,200        | 1,305         | 285  | 1,400,000                |                      |
| No. 2  |      | 855                            | 980          | 1,065         | 285  | 1,200,000                |                      |
| No. 3  |      | 505                            | 580          | 635           | 285  | 1,100,000                |                      |
| Select Structural                            | 2x12 | 1,440                          | 1,655        | 1,795         | 285  | 1,600,000                |                      |
| No. 1  |      | 950                            | 1,090        | 1,185         | 285  | 1,400,000                |                      |
| No. 2  |      | 775                            | 895          | 970           | 285  | 1,200,000                |                      |
| No. 3  |      | 460                            | 530          | 575           | 285  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade  | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SCOTS PINE - Austria &amp; The Czech Republic, Romania, &amp; Ukraine</b> |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 2,245                          | 2,580        | 2,805         | 270  | 1,700,000                | WCLIB                |
| No. 1  |      | 1,555                          | 1,785        | 1,940         | 270  | 1,600,000                |                      |
| No. 2  |      | 1,335                          | 1,535        | 1,670         | 270  | 1,400,000                |                      |
| No. 3  |      | 775                            | 895          | 970           | 270  | 1,300,000                |                      |
| Stud   |      | 760                            | 875          | 950           | 270  | 1,300,000                |                      |
| Construction Standard  |      | 1,005                          | 1,155        | 1,260         | 270  | 1,300,000                |                      |
| Utility  |      | 575                            | 660          | 720           | 270  | 1,200,000                |                      |
| Utility  |      | 260                            | 300          | 325           | 270  | 1,100,000                |                      |
| Select Structural  | 2x6  | 1,945                          | 2,235        | 2,430         | 270  | 1,700,000                |                      |
| No. 1  |      | 1,345                          | 1,545        | 1,680         | 270  | 1,600,000                |                      |
| No. 2  |      | 1,160                          | 1,330        | 1,450         | 270  | 1,400,000                |                      |
| No. 3  |      | 675                            | 775          | 840           | 270  | 1,300,000                |                      |
| Stud   | 690  | 795                            | 865          | 270           | 1,300,000  |                          |                      |
| Select Structural  | 2x8  | 1,795                          | 2,065        | 2,245         | 270  | 1,700,000                |                      |
| No. 1  |      | 1,240                          | 1,430        | 1,555         | 270  | 1,600,000                |                      |
| No. 2  |      | 1,070                          | 1,230        | 1,335         | 270  | 1,400,000                |                      |
| No. 3  |      | 620                            | 715          | 775           | 270  | 1,300,000                |                      |
| Select Structural  | 2x10 | 1,645                          | 1,890        | 2,055         | 270  | 1,700,000                |                      |
| No. 1  |      | 1,140                          | 1,310        | 1,425         | 270  | 1,600,000                |                      |
| No. 2  |      | 980                            | 1,125        | 1,225         | 270  | 1,400,000                |                      |
| No. 3  |      | 570                            | 655          | 710           | 270  | 1,300,000                |                      |
| Select Structural  | 2x12 | 1,495                          | 1,720        | 1,870         | 270  | 1,700,000                |                      |
| No. 1  |      | 1,035                          | 1,190        | 1,295         | 270  | 1,600,000                |                      |
| No. 2  |      | 890                            | 1,025        | 1,115         | 270  | 1,400,000                |                      |
| No. 3  |      | 520                            | 595          | 645           | 270  | 1,300,000                |                      |
| <b>SCOTS PINE - Estonia, Latvia, &amp; Lithuania</b>                         |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 1,985                          | 2,280        | 2,480         | 430  | 1,500,000                | WCLIB                |
| No. 1  |      | 1,380                          | 1,585        | 1,725         | 430  | 1,400,000                |                      |
| No. 2  |      | 1,295                          | 1,490        | 1,615         | 430  | 1,200,000                |                      |
| No. 3  |      | 735                            | 845          | 915           | 430  | 1,100,000                |                      |
| Stud   |      | 725                            | 835          | 910           | 430  | 1,100,000                |                      |
| Construction Standard  |      | 980                            | 1,125        | 1,220         | 430  | 1,100,000                |                      |
| Utility  |      | 545                            | 630          | 685           | 430  | 1,000,000                |                      |
| Utility  |      | 260                            | 300          | 325           | 430  | 1,000,000                |                      |
| Select Structural  | 2x6  | 1,720                          | 1,975        | 2,150         | 430  | 1,500,000                |                      |
| No. 1  |      | 1,195                          | 1,375        | 1,495         | 430  | 1,400,000                |                      |
| No. 2  |      | 1,120                          | 1,290        | 1,400         | 430  | 1,200,000                |                      |
| No. 3  |      | 635                            | 730          | 795           | 430  | 1,100,000                |                      |
| Stud   | 660  | 760                            | 825          | 430           | 1,100,000  |                          |                      |
| Select Structural  | 2x8  | 1,585                          | 1,825        | 1,985         | 430  | 1,500,000                |                      |
| No. 1  |      | 1,105                          | 1,270        | 1,380         | 430  | 1,400,000                |                      |
| No. 2  |      | 1,035                          | 1,190        | 1,295         | 430  | 1,200,000                |                      |
| No. 3  |      | 585                            | 675          | 735           | 430  | 1,100,000                |                      |
| Select Structural  | 2x10 | 1,455                          | 1,675        | 1,820         | 430  | 1,500,000                |                      |
| No. 1  |      | 1,010                          | 1,165        | 1,265         | 430  | 1,400,000                |                      |
| No. 2  |      | 950                            | 1,090        | 1,185         | 430  | 1,200,000                |                      |
| No. 3  |      | 540                            | 620          | 670           | 430  | 1,100,000                |                      |
| Select Structural  | 2x12 | 1,325                          | 1,520        | 1,655         | 430  | 1,500,000                |                      |
| No. 1  |      | 920                            | 1,060        | 1,150         | 430  | 1,400,000                |                      |
| No. 2  |      | 865                            | 990          | 1,080         | 430  | 1,200,000                |                      |
| No. 3  |      | 490                            | 560          | 610           | 430  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade                       | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SCOTS PINE - Finland</b>             |      |                                |              |               |  |                          |                      |
| Select Structural                       | 2x4  | 2,245                          | 2,580        | 2,805         | 210  | 1,500,000                | WCLIB                |
| No. 1                                   |      | 1,640                          | 1,885        | 2,050         | 210  | 1,400,000                |                      |
| No. 2                                   |      | 1,595                          | 1,835        | 1,995         | 210  | 1,300,000                |                      |
| No. 3                                   |      | 905                            | 1,040        | 1,130         | 210  | 1,200,000                |                      |
| Stud                                    |      | 915                            | 1,055        | 1,145         | 210  | 1,200,000                |                      |
| Construction Standard                   |      | 1,210                          | 1,390        | 1,510         | 210  | 1,200,000                |                      |
| Utility                                 |      | 690                            | 795          | 865           | 210  | 1,100,000                |                      |
| Utility                                 |      | 315                            | 365          | 395           | 210  | 1,000,000                |                      |
| Select Structural                       | 2x6  | 1,945                          | 2,235        | 2,430         | 210  | 1,500,000                |                      |
| No. 1                                   |      | 1,420                          | 1,635        | 1,775         | 210  | 1,400,000                |                      |
| No. 2                                   |      | 1,385                          | 1,590        | 1,730         | 210  | 1,300,000                |                      |
| No. 3                                   |      | 785                            | 905          | 980           | 210  | 1,200,000                |                      |
| Stud                                    | 835  | 960                            | 1,040        | 210           | 1,200,000  |                          |                      |
| Select Structural                       | 2x8  | 1,795                          | 2,065        | 2,245         | 210  | 1,500,000                |                      |
| No. 1                                   |      | 1,310                          | 1,510        | 1,640         | 210  | 1,400,000                |                      |
| No. 2                                   |      | 1,275                          | 1,470        | 1,595         | 210  | 1,300,000                |                      |
| No. 3                                   |      | 725                            | 835          | 905           | 210  | 1,200,000                |                      |
| Select Structural                       | 2x10 | 1,645                          | 1,890        | 2,055         | 210  | 1,500,000                |                      |
| No. 1                                   |      | 1,200                          | 1,380        | 1,500         | 210  | 1,400,000                |                      |
| No. 2                                   |      | 1,170                          | 1,345        | 1,465         | 210  | 1,300,000                |                      |
| No. 3                                   |      | 665                            | 765          | 830           | 210  | 1,200,000                |                      |
| Select Structural                       | 2x12 | 1,495                          | 1,720        | 1,870         | 210  | 1,500,000                |                      |
| No. 1                                   |      | 1,095                          | 1,255        | 1,365         | 210  | 1,400,000                |                      |
| No. 2                                   |      | 1,065                          | 1,225        | 1,330         | 210  | 1,300,000                |                      |
| No. 3                                   |      | 605                            | 695          | 755           | 210  | 1,200,000                |                      |
| <b>SCOTS PINE - Germany<sup>4</sup></b> |      |                                |              |               |  |                          |                      |
| Select Structural                       | 2x4  | 2,070                          | 2,380        | 2,590         | 395  | 1,600,000                | WCLIB                |
| No. 1                                   |      | 1,380                          | 1,585        | 1,725         | 395  | 1,400,000                |                      |
| No. 2                                   |      | 1,210                          | 1,390        | 1,510         | 395  | 1,100,000                |                      |
| No. 3                                   |      | 690                            | 795          | 865           | 395  | 1,000,000                |                      |
| Stud                                    |      | 695                            | 800          | 870           | 395  | 1,000,000                |                      |
| Construction Standard                   |      | 920                            | 1,060        | 1,150         | 395  | 1,100,000                |                      |
| Utility                                 |      | 520                            | 595          | 645           | 395  | 1,000,000                |                      |
| Utility                                 |      | 260                            | 300          | 325           | 395  | 900,000                  |                      |
| Select Structural                       | 2x6  | 1,795                          | 2,065        | 2,245         | 395  | 1,600,000                |                      |
| No. 1                                   |      | 1,195                          | 1,375        | 1,495         | 395  | 1,400,000                |                      |
| No. 2                                   |      | 1,045                          | 1,205        | 1,310         | 395  | 1,100,000                |                      |
| No. 3                                   |      | 600                            | 690          | 750           | 395  | 1,000,000                |                      |
| Stud                                    | 635  | 725                            | 790          | 395           | 1,000,000  |                          |                      |
| Select Structural                       | 2x8  | 1,655                          | 1,905        | 2,070         | 395  | 1,600,000                |                      |
| No. 1                                   |      | 1,105                          | 1,270        | 1,380         | 395  | 1,400,000                |                      |
| No. 2                                   |      | 965                            | 1,110        | 1,210         | 395  | 1,100,000                |                      |
| No. 3                                   |      | 550                            | 635          | 690           | 395  | 1,000,000                |                      |
| Select Structural                       | 2x10 | 1,520                          | 1,745        | 1,900         | 395  | 1,600,000                |                      |
| No. 1                                   |      | 1,010                          | 1,165        | 1,265         | 395  | 1,400,000                |                      |
| No. 2                                   |      | 885                            | 1,020        | 1,105         | 395  | 1,100,000                |                      |
| No. 3                                   |      | 505                            | 580          | 635           | 395  | 1,000,000                |                      |
| Select Structural                       | 2x12 | 1,380                          | 1,585        | 1,725         | 395  | 1,600,000                |                      |
| No. 1                                   |      | 920                            | 1,060        | 1,150         | 395  | 1,400,000                |                      |
| No. 2                                   |      | 805                            | 925          | 1,005         | 395  | 1,100,000                |                      |
| No. 3                                   |      | 460                            | 530          | 575           | 395  | 1,000,000                |                      |



**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade   | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SCOTS PINE - Sweden</b>  |      |                                |              |               |  |                          |                      |
| Select Structural   | 2x4  | 2,330                          | 2,680        | 2,910         | 410  | 1,700,000                | WCLIB                |
| No. 1   |      | 1,425                          | 1,635        | 1,780         | 410  | 1,500,000                |                      |
| No. 2   |      | 990                            | 1,140        | 1,240         | 410  | 1,200,000                |                      |
| No. 3   |      | 560                            | 645          | 700           | 410  | 1,100,000                |                      |
| Stud  |      | 570                            | 655          | 710           | 410  | 1,100,000                |                      |
| Construction Standard   |      | 750                            | 860          | 935           | 410  | 1,200,000                |                      |
| Utility   |      | 430                            | 495          | 540           | 410  | 1,100,000                |                      |
| Utility   |      | 200                            | 230          | 250           | 410  | 1,000,000                |                      |
| Select Structural   | 2x6  | 2,020                          | 2,320        | 2,525         | 410  | 1,700,000                |                      |
| No. 1   |      | 1,235                          | 1,420        | 1,540         | 410  | 1,500,000                |                      |
| No. 2   |      | 860                            | 990          | 1,075         | 410  | 1,200,000                |                      |
| No. 3   |      | 485                            | 560          | 605           | 410  | 1,100,000                |                      |
| Stud  | 520  | 595                            | 645          | 410           | 1,100,000  |                          |                      |
| Select Structural   | 2x8  | 1,865                          | 2,140        | 2,330         | 410  | 1,700,000                |                      |
| No. 1   |      | 1,140                          | 1,310        | 1,425         | 410  | 1,500,000                |                      |
| No. 2   |      | 795                            | 915          | 990           | 410  | 1,200,000                |                      |
| No. 3   |      | 450                            | 515          | 560           | 410  | 1,100,000                |                      |
| Select Structural   | 2x10 | 1,710                          | 1,965        | 2,135         | 410  | 1,700,000                |                      |
| No. 1   |      | 1,045                          | 1,200        | 1,305         | 410  | 1,500,000                |                      |
| No. 2   |      | 725                            | 835          | 910           | 410  | 1,200,000                |                      |
| No. 3   |      | 410                            | 475          | 515           | 410  | 1,100,000                |                      |
| Select Structural   | 2x12 | 1,555                          | 1,785        | 1,940         | 410  | 1,700,000                |                      |
| No. 1   |      | 950                            | 1,090        | 1,185         | 410  | 1,500,000                |                      |
| No. 2   |      | 660                            | 760          | 825           | 410  | 1,200,000                |                      |
| No. 3   |      | 375                            | 430          | 465           | 410  | 1,100,000                |                      |
| <b>SILVER FIR (<i>Abies alba</i>) - Germany, NE France, &amp; Switzerland</b> |      |                                |              |               |  |                          |                      |
| Select Structural   | 2x4  | 1,640                          | 1,885        | 2,050         | 400  | 1,500,000                | WCLIB                |
| No. 1   |      | 1,250                          | 1,440        | 1,565         | 400  | 1,400,000                |                      |
| No. 2   |      | 1,250                          | 1,440        | 1,565         | 400  | 1,300,000                |                      |
| No. 3   |      | 735                            | 845          | 915           | 400  | 1,100,000                |                      |
| Stud  |      | 725                            | 835          | 910           | 400  | 1,100,000                |                      |
| Construction Standard   |      | 950                            | 1,090        | 1,185         | 400  | 1,200,000                |                      |
| Utility   |      | 545                            | 630          | 685           | 400  | 1,100,000                |                      |
| Utility   |      | 260                            | 300          | 325           | 400  | 1,000,000                |                      |
| Select Structural   | 2x6  | 1,420                          | 1,635        | 1,775         | 400  | 1,500,000                |                      |
| No. 1   |      | 1,085                          | 1,245        | 1,355         | 400  | 1,400,000                |                      |
| No. 2   |      | 1,085                          | 1,245        | 1,355         | 400  | 1,300,000                |                      |
| No. 3   |      | 635                            | 730          | 795           | 400  | 1,100,000                |                      |
| Stud  | 660  | 760                            | 825          | 400           | 1,100,000  |                          |                      |
| Select Structural   | 2x8  | 1,310                          | 1,510        | 1,640         | 400  | 1,500,000                |                      |
| No. 1   |      | 1,000                          | 1,150        | 1,250         | 400  | 1,400,000                |                      |
| No. 2   |      | 1,000                          | 1,150        | 1,250         | 400  | 1,300,000                |                      |
| No. 3   |      | 585                            | 675          | 735           | 400  | 1,100,000                |                      |
| Select Structural   | 2x10 | 1,200                          | 1,380        | 1,500         | 400  | 1,500,000                |                      |
| No. 1   |      | 915                            | 1,055        | 1,145         | 400  | 1,400,000                |                      |
| No. 2   |      | 915                            | 1,055        | 1,145         | 400  | 1,300,000                |                      |
| No. 3   |      | 540                            | 620          | 670           | 400  | 1,100,000                |                      |
| Select Structural   | 2x12 | 1,095                          | 1,255        | 1,365         | 400  | 1,500,000                |                      |
| No. 1   |      | 835                            | 960          | 1,040         | 400  | 1,400,000                |                      |
| No. 2   |      | 835                            | 960          | 1,040         | 400  | 1,300,000                |                      |
| No. 3   |      | 490                            | 560          | 610           | 400  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - NON-NORTH AMERICAN VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Species and Grade  | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SOUTHERN PINE - Misiones Argentina</b>  |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 1,900                          | 2,180        | 2,370         | 440  | 1,200,000                | SPIB                 |
| No. 1  |      | 1,335                          | 1,535        | 1,670         | 440  | 1,100,000                |                      |
| No. 2  |      | 1,250                          | 1,440        | 1,565         | 440  | 1,100,000                |                      |
| No. 3  |      | 735                            | 845          | 915           | 440  | 900,000                  |                      |
| Stud   |      | 725                            | 835          | 910           | 440  | 900,000                  |                      |
| Construction Standard  |      | 950                            | 1,090        | 1,185         | 440  | 1,000,000                |                      |
| Utility  |      | 545                            | 630          | 685           | 440  | 900,000                  |                      |
| Utility  |      | 260                            | 300          | 325           | 440  | 800,000                  |                      |
| Select Structural  | 2x6  | 1,645                          | 1,890        | 2,055         | 440  | 1,200,000                |                      |
| No. 1  |      | 1,160                          | 1,330        | 1,450         | 440  | 1,100,000                |                      |
| No. 2  |      | 1,085                          | 1,245        | 1,355         | 440  | 1,100,000                |                      |
| No. 3  |      | 635                            | 730          | 795           | 440  | 900,000                  |                      |
| Stud   | 660  | 760                            | 825          | 440           | 900,000  |                          |                      |
| Select Structural  | 2x8  | 1,520                          | 1,745        | 1,900         | 440  | 1,200,000                |                      |
| No. 1  |      | 1,070                          | 1,230        | 1,335         | 440  | 1,100,000                |                      |
| No. 2  |      | 1,000                          | 1,150        | 1,250         | 440  | 1,100,000                |                      |
| No. 3  |      | 585                            | 675          | 735           | 440  | 900,000                  |                      |
| Select Structural  | 2x10 | 1,390                          | 1,600        | 1,740         | 440  | 1,200,000                |                      |
| No. 1  |      | 980                            | 1,125        | 1,225         | 440  | 1,100,000                |                      |
| No. 2  |      | 915                            | 1,055        | 1,145         | 440  | 1,100,000                |                      |
| No. 3  |      | 540                            | 620          | 670           | 440  | 900,000                  |                      |
| Select Structural  | 2x12 | 1,265                          | 1,455        | 1,580         | 440  | 1,200,000                |                      |
| No. 1  |      | 890                            | 1,025        | 1,115         | 440  | 1,100,000                |                      |
| No. 2  |      | 835                            | 960          | 1,040         | 440  | 1,100,000                |                      |
| No. 3  |      | 490                            | 560          | 610           | 440  | 900,000                  |                      |
| <b>SOUTHERN PINE - Misiones Argentina, Free of Heart Center and Medium Grain Density</b> |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 2,935                          | 3,370        | 3,665         | 710  | 1,500,000                | SPIB                 |
| No. 1  |      | 1,985                          | 2,280        | 2,480         | 710  | 1,500,000                |                      |
| No. 2  |      | 1,725                          | 1,985        | 2,155         | 710  | 1,500,000                |                      |
| No. 3  |      | 990                            | 1,140        | 1,240         | 710  | 1,400,000                |                      |
| Stud   |      | 1,010                          | 1,165        | 1,265         | 710  | 1,400,000                |                      |
| Construction Standard  |      | 1,325                          | 1,520        | 1,655         | 710  | 1,400,000                |                      |
| Utility  |      | 750                            | 860          | 935           | 710  | 1,300,000                |                      |
| Utility  |      | 345                            | 395          | 430           | 710  | 1,200,000                |                      |
| Select Structural  | 2x6  | 2,540                          | 2,925        | 3,175         | 710  | 1,500,000                |                      |
| No. 1  |      | 1,720                          | 1,975        | 2,150         | 710  | 1,500,000                |                      |
| No. 2  |      | 1,495                          | 1,720        | 1,870         | 710  | 1,500,000                |                      |
| No. 3  |      | 860                            | 990          | 1,075         | 710  | 1,400,000                |                      |
| Stud   | 920  | 1,060                          | 1,150        | 710           | 1,400,000  |                          |                      |
| Select Structural  | 2x8  | 2,345                          | 2,700        | 2,935         | 710  | 1,500,000                |                      |
| No. 1  |      | 1,585                          | 1,825        | 1,985         | 710  | 1,500,000                |                      |
| No. 2  |      | 1,380                          | 1,585        | 1,725         | 710  | 1,500,000                |                      |
| No. 3  |      | 795                            | 915          | 990           | 710  | 1,400,000                |                      |
| Select Structural  | 2x10 | 2,150                          | 2,475        | 2,690         | 710  | 1,500,000                |                      |
| No. 1  |      | 1,455                          | 1,675        | 1,820         | 710  | 1,500,000                |                      |
| No. 2  |      | 1,265                          | 1,455        | 1,580         | 710  | 1,500,000                |                      |
| No. 3  |      | 725                            | 835          | 910           | 710  | 1,400,000                |                      |
| Select Structural  | 2x12 | 1,955                          | 2,250        | 2,445         | 710  | 1,500,000                |                      |
| No. 1  |      | 1,325                          | 1,520        | 1,655         | 710  | 1,500,000                |                      |
| No. 2  |      | 1,150                          | 1,325        | 1,440         | 710  | 1,500,000                |                      |
| No. 3  |      | 660                            | 760          | 825           | 710  | 1,400,000                |                      |

<sup>1,2</sup> See Table W1 FOOTNOTES

<sup>3</sup> Design values are applicable only for 2x4 dimensional lumber.

<sup>4</sup> Does not include states of Baden-Wuerttemberg and Saarland.

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>As-N Spr-Sc P (I) AUS ROM UKR</b>      |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 260  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,465                          | 1,685        | 1,835         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 1,250                          | 1,440        | 1,565         | 260  | 1,200,000                |                      |
| No. 3                                     |      | 735                            | 845          | 915           | 260  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 260  | 1,100,000                |                      |
| Construction                              |      | 980                            | 1,125        | 1,220         | 260  | 1,100,000                |                      |
| Standard                                  |      | 545                            | 630          | 685           | 260  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 260  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 260  | 1,500,000                |                      |
| No. 1                                     |      | 1,270                          | 1,460        | 1,590         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 1,085                          | 1,245        | 1,355         | 260  | 1,200,000                |                      |
| No. 3                                     |      | 635                            | 730          | 795           | 260  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 260  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 260  | 1,500,000                |                      |
| No. 1                                     |      | 1,175                          | 1,350        | 1,465         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 1,000                          | 1,150        | 1,250         | 260  | 1,200,000                |                      |
| No. 3                                     |      | 585                            | 675          | 735           | 260  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 260  | 1,500,000                |                      |
| No. 1                                     |      | 1,075                          | 1,235        | 1,345         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 915                            | 1,055        | 1,145         | 260  | 1,200,000                |                      |
| No. 3                                     |      | 540                            | 620          | 670           | 260  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 260  | 1,500,000                |                      |
| No. 1                                     |      | 980                            | 1,125        | 1,220         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 835                            | 960          | 1,040         | 260  | 1,200,000                |                      |
| No. 3                                     |      | 490                            | 560          | 610           | 260  | 1,100,000                |                      |
| <b>AS-Sc P (I) AUS</b>                    |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 260  | 1,700,000                | PLIB                 |
| No. 1                                     |      | 1,555                          | 1,785        | 1,940         | 260  | 1,600,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 260  | 1,400,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 260  | 1,300,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 260  | 1,300,000                |                      |
| Construction                              |      | 1,005                          | 1,155        | 1,260         | 260  | 1,300,000                |                      |
| Standard                                  |      | 575                            | 660          | 720           | 260  | 1,200,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 260  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 260  | 1,700,000                |                      |
| No. 1                                     |      | 1,345                          | 1,545        | 1,680         | 260  | 1,600,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 260  | 1,400,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 260  | 1,300,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 260  | 1,300,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 260  | 1,700,000                |                      |
| No. 1                                     |      | 1,240                          | 1,430        | 1,555         | 260  | 1,600,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 260  | 1,400,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 260  | 1,300,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 260  | 1,700,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 260  | 1,600,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 260  | 1,400,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 260  | 1,300,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 260  | 1,700,000                |                      |
| No. 1                                     |      | 1,035                          | 1,190        | 1,295         | 260  | 1,600,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 260  | 1,400,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 260  | 1,300,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>AS/NSPR/SCOTP(I)AUS/GER</b>            |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 260  | 1,600,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 260  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 260  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 260  | 1,000,000                |                      |
| Construction Standard                     |      | 920                            | 1,060        | 1,150         | 260  | 1,100,000                |                      |
| Utility                                   |      | 520                            | 595          | 645           | 260  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 260  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 260  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 260  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 260  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 260  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 260  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 260  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 260  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 260  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 260  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 260  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 260  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 260  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 260  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 260  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%.

Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>DF/DF-N</b>                            |      |                                |              |               |  |                          |                      |
| <b>DF-L/DF-L(N)</b>                       |      |                                |              |               |  |                          |                      |
| <b>DF-L/DF(N)</b>                         |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,330                          | 2,680        | 2,910         | 625  | 1,900,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,985                          | 2,280        | 2,480         | 625  | 1,800,000                |                      |
| No. 1                                     |      | 1,465                          | 1,685        | 1,835         | 625  | 1,600,000                |                      |
| No. 2                                     |      | 1,465                          | 1,685        | 1,835         | 625  | 1,600,000                |                      |
| No. 3                                     |      | 820                            | 940          | 1,025         | 625  | 1,400,000                |                      |
| Stud                                      |      | 820                            | 945          | 1,030         | 625  | 1,400,000                |                      |
| Construction                              |      | 1,095                          | 1,255        | 1,365         | 625  | 1,500,000                |                      |
| Standard                                  |      | 605                            | 695          | 755           | 625  | 1,400,000                |                      |
| Utility                                   |      | 290                            | 330          | 360           | 625  | 1,300,000                |                      |
| Select Structural                         | 2x6  | 2,020                          | 2,320        | 2,525         | 625  | 1,900,000                |                      |
| No. 1 & Btr                               |      | 1,720                          | 1,975        | 2,150         | 625  | 1,800,000                |                      |
| No. 1                                     |      | 1,270                          | 1,460        | 1,590         | 625  | 1,600,000                |                      |
| No. 2                                     |      | 1,270                          | 1,460        | 1,590         | 625  | 1,600,000                |                      |
| No. 3                                     |      | 710                            | 815          | 890           | 625  | 1,400,000                |                      |
| Stud                                      | 750  | 860                            | 935          | 625           | 1,400,000  |                          |                      |
| Select Structural                         | 2x8  | 1,865                          | 2,140        | 2,330         | 625  | 1,900,000                |                      |
| No. 1 & Btr                               |      | 1,585                          | 1,825        | 1,985         | 625  | 1,800,000                |                      |
| No. 1                                     |      | 1,175                          | 1,350        | 1,465         | 625  | 1,600,000                |                      |
| No. 2                                     |      | 1,175                          | 1,350        | 1,465         | 625  | 1,600,000                |                      |
| No. 3                                     | 655  | 755                            | 820          | 625           | 1,400,000  |                          |                      |
| Select Structural                         | 2x10 | 1,710                          | 1,965        | 2,135         | 625  | 1,900,000                |                      |
| No. 1 & Btr                               |      | 1,455                          | 1,675        | 1,820         | 625  | 1,800,000                |                      |
| No. 1                                     |      | 1,075                          | 1,235        | 1,345         | 625  | 1,600,000                |                      |
| No. 2                                     |      | 1,075                          | 1,235        | 1,345         | 625  | 1,600,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 625  | 1,400,000                |                      |
| Select Structural                         | 2x12 | 1,555                          | 1,785        | 1,940         | 625  | 1,900,000                |                      |
| No. 1 & Btr                               |      | 1,325                          | 1,520        | 1,655         | 625  | 1,800,000                |                      |
| No. 1                                     |      | 980                            | 1,125        | 1,220         | 625  | 1,600,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,220         | 625  | 1,600,000                |                      |
| No. 3                                     |      | 545                            | 630          | 685           | 625  | 1,400,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>D Fir-L-HF</b>                         |      |                                |              |               |  |                          |                      |
| <b>DF-HF</b>                              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,415                          | 2,775        | 3,020         | 405  | 1,600,000                | PLIB                 |
| No. 1 & Btr                               |      | 1,900                          | 2,180        | 2,370         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,680                          | 1,935        | 2,100         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,465                          | 1,685        | 1,835         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 865                            | 990          | 1,080         | 405  | 1,200,000                |                      |
| Stud                                      |      | 855                            | 980          | 1,065         | 405  | 1,200,000                |                      |
| Construction                              |      | 1,120                          | 1,290        | 1,400         | 405  | 1,300,000                |                      |
| Standard                                  |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Utility                                   |      | 290                            | 330          | 360           | 405  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 2,095                          | 2,405        | 2,615         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,645                          | 1,890        | 2,055         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,460                          | 1,675        | 1,820         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,270                          | 1,460        | 1,590         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 750                            | 860          | 935           | 405  | 1,200,000                |                      |
| Stud                                      | 775  | 895                            | 970          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x8  | 1,930                          | 2,220        | 2,415         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,520                          | 1,745        | 1,900         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,345                          | 1,545        | 1,680         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,175                          | 1,350        | 1,465         | 405  | 1,300,000                |                      |
| No. 3                                     | 690  | 795                            | 865          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x10 | 1,770                          | 2,035        | 2,215         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,390                          | 1,600        | 1,740         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,075                          | 1,235        | 1,345         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Select Structural                         | 2x12 | 1,610                          | 1,850        | 2,015         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,265                          | 1,455        | 1,580         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,120                          | 1,290        | 1,400         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,220         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 575                            | 660          | 720           | 405  | 1,200,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>DF-HF-SPF</b>                          |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 405  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 405  | 1,400,000                |                      |
| No. 2                                     |      | 1,465                          | 1,685        | 1,835         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 865                            | 990          | 1,080         | 405  | 1,200,000                |                      |
| Stud                                      |      | 855                            | 980          | 1,065         | 405  | 1,200,000                |                      |
| Construction Standard                     |      | 1,120                          | 1,290        | 1,400         | 405  | 1,300,000                |                      |
| Standard                                  |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Utility                                   |      | 290                            | 330          | 360           | 405  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 405  | 1,400,000                |                      |
| No. 2                                     |      | 1,270                          | 1,460        | 1,590         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 750                            | 860          | 935           | 405  | 1,200,000                |                      |
| Stud                                      |      | 775                            | 895          | 970           | 405  | 1,200,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 405  | 1,400,000                |                      |
| No. 2                                     |      | 1,175                          | 1,350        | 1,465         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 405  | 1,200,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 405  | 1,400,000                |                      |
| No. 2                                     |      | 1,075                          | 1,235        | 1,345         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 405  | 1,400,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,220         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 575                            | 660          | 720           | 405  | 1,200,000                |                      |
| <b>DF-HF-SPF(S)</b>                       |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 335  | 1,300,000                | PLIB                 |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 335  | 1,000,000                |                      |
| Construction Standard                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,000,000                |                      |
| Standard                                  |      | 575                            | 660          | 720           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 335  | 1,000,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>D Fir-SPF</b>                          |      |                                |              |               |  |                          |                      |
| <b>DF-L-SPF</b>                           |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 425  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 425  | 1,400,000                |                      |
| No. 2                                     |      | 1,510                          | 1,735        | 1,885         | 425  | 1,400,000                |                      |
| No. 3                                     |      | 865                            | 990          | 1,080         | 425  | 1,200,000                |                      |
| Stud                                      |      | 855                            | 980          | 1,065         | 425  | 1,200,000                |                      |
| Construction                              |      | 1,150                          | 1,325        | 1,440         | 425  | 1,300,000                |                      |
| Standard                                  |      | 635                            | 725          | 790           | 425  | 1,200,000                |                      |
| Utility                                   |      | 315                            | 365          | 395           | 425  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 425  | 1,500,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 425  | 1,400,000                |                      |
| No. 2                                     |      | 1,310                          | 1,505        | 1,635         | 425  | 1,400,000                |                      |
| No. 3                                     |      | 750                            | 860          | 935           | 425  | 1,200,000                |                      |
| Stud                                      |      | 775                            | 895          | 970           | 425  | 1,200,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 425  | 1,500,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 425  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 425  | 1,400,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 425  | 1,200,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 425  | 1,500,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 425  | 1,400,000                |                      |
| No. 2                                     |      | 1,105                          | 1,275        | 1,385         | 425  | 1,400,000                |                      |
| No. 3                                     |      | 635                            | 725          | 790           | 425  | 1,200,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 425  | 1,500,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 425  | 1,400,000                |                      |
| No. 2                                     |      | 1,005                          | 1,155        | 1,260         | 425  | 1,400,000                |                      |
| No. 3                                     |      | 575                            | 660          | 720           | 425  | 1,200,000                |                      |



**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>DF-N Spr (I) N FRA</b>                 |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                | PLIB                 |
| No. 1                                     |      | 1,425                          | 1,635        | 1,780         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,250                          | 1,440        | 1,565         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 735                            | 845          | 915           | 355  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 355  | 1,100,000                |                      |
| Construction Standard                     |      | 950                            | 1,090        | 1,185         | 355  | 1,100,000                |                      |
| Utility                                   |      | 545                            | 630          | 685           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,085                          | 1,245        | 1,355         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 635                            | 730          | 795           | 355  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,000                          | 1,150        | 1,250         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 585                            | 675          | 735           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,045                          | 1,200        | 1,305         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 915                            | 1,055        | 1,145         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 540                            | 620          | 670           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 950                            | 1,090        | 1,185         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 835                            | 960          | 1,040         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 490                            | 560          | 610           | 355  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>DF/NSPR/SCOTP(I)GER/ROM/SW/UKR</b>     |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 270  | 1,500,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 270  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 270  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 270  | 1,000,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 270  | 1,100,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 270  | 1,000,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 270  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 270  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 270  | 1,000,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 270  | 1,000,000                |                      |
| <b>DF/NSPR/SCOTP(I)GER</b>                |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction Standard                     |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>ES-LP</b>                              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 335  | 1,300,000                | PLIB, WWPA           |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 335  | 1,000,000                |                      |
| Construction Standard                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,000,000                |                      |
| Utility                                   |      | 575                            | 660          | 720           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 335  | 1,000,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |
| <b>ES-LP-AF</b>                           |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,555                          | 1,785        | 1,940         | 335  | 1,200,000                | PLIB, WWPA           |
| No. 1                                     |      | 1,165                          | 1,340        | 1,455         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,165                          | 1,340        | 1,455         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 335  | 900,000                  |                      |
| Stud                                      |      | 665                            | 765          | 830           | 335  | 900,000                  |                      |
| Construction Standard                     |      | 890                            | 1,025        | 1,115         | 335  | 1,000,000                |                      |
| Utility                                   |      | 490                            | 560          | 610           | 335  | 900,000                  |                      |
| Utility                                   |      | 230                            | 265          | 290           | 335  | 800,000                  |                      |
| Select Structural                         | 2x6  | 1,345                          | 1,545        | 1,680         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 1,010                          | 1,160        | 1,260         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,010                          | 1,160        | 1,260         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 335  | 900,000                  |                      |
| Stud                                      |      | 605                            | 695          | 755           | 335  | 900,000                  |                      |
| Select Structural                         | 2x8  | 1,240                          | 1,430        | 1,555         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 930                            | 1,070        | 1,165         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 930                            | 1,070        | 1,165         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 900,000                  |                      |
| Select Structural                         | 2x10 | 1,140                          | 1,310        | 1,425         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 855                            | 980          | 1,065         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 855                            | 980          | 1,065         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 335  | 900,000                  |                      |
| Select Structural                         | 2x12 | 1,035                          | 1,190        | 1,295         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 775                            | 895          | 970           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 335  | 900,000                  |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>HF/DF-N/SPF/SPF-S</b>                  |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 335  | 1,300,000                | TP                   |
| No. 1                                     |      | 1,465                          | 1,685        | 1,835         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 335  | 1,000,000                |                      |
| Construction                              |      | 1,005                          | 1,155        | 1,260         | 335  | 1,000,000                |                      |
| Standard                                  |      | 575                            | 660          | 720           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,270                          | 1,460        | 1,590         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 335  | 1,000,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,175                          | 1,350        | 1,465         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,075                          | 1,235        | 1,345         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 980                            | 1,125        | 1,220         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>HF/HF(N)</b>                           |      |                                |              |               |  |                          |                      |
| <b>HF/HF-N</b>                            |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 405  | 1,600,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,900                          | 2,180        | 2,370         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,680                          | 1,935        | 2,100         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,465                          | 1,685        | 1,835         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 865                            | 990          | 1,080         | 405  | 1,200,000                |                      |
| Stud                                      |      | 855                            | 980          | 1,065         | 405  | 1,200,000                |                      |
| Construction                              |      | 1,120                          | 1,290        | 1,400         | 405  | 1,300,000                |                      |
| Standard                                  |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Utility                                   |      | 290                            | 330          | 360           | 405  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 405  | 1,600,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,645                          | 1,890        | 2,055         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,460                          | 1,675        | 1,820         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,270                          | 1,460        | 1,590         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 750                            | 860          | 935           | 405  | 1,200,000                |                      |
| Stud                                      | 775  | 895                            | 970          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 405  | 1,600,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,520                          | 1,745        | 1,900         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,345                          | 1,545        | 1,680         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,175                          | 1,350        | 1,465         | 405  | 1,300,000                |                      |
| No. 3                                     | 690  | 795                            | 865          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 405  | 1,600,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,390                          | 1,600        | 1,740         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,075                          | 1,235        | 1,345         | 405  | 1,300,000                |                      |
| No. 3                                     | 635  | 725                            | 790          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 405  | 1,600,000                | PLIB, TP, WWPA       |
| No. 1 & Btr                               |      | 1,265                          | 1,455        | 1,580         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,120                          | 1,290        | 1,400         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,220         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 575                            | 660          | 720           | 405  | 1,200,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>HF-SS</b>                              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 335  | 1,300,000                | PLIB                 |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 335  | 1,000,000                |                      |
| Construction                              |      | 1,005                          | 1,155        | 1,260         | 335  | 1,000,000                |                      |
| Standard                                  |      | 575                            | 660          | 720           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 335  | 1,000,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |
| <b>N Spr (I) EST FIN GER LTH NOR SW</b>   |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 220  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,425                          | 1,635        | 1,780         | 220  | 1,400,000                |                      |
| No. 2                                     |      | 1,080                          | 1,240        | 1,350         | 220  | 1,200,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 220  | 1,100,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 220  | 1,100,000                |                      |
| Construction                              |      | 835                            | 960          | 1,040         | 220  | 1,100,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 220  | 1,000,000                |                      |
| Utility                                   |      | 230                            | 265          | 290           | 220  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 220  | 1,500,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 220  | 1,400,000                |                      |
| No. 2                                     |      | 935                            | 1,075        | 1,170         | 220  | 1,200,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 220  | 1,100,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 220  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 220  | 1,500,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 220  | 1,400,000                |                      |
| No. 2                                     |      | 865                            | 990          | 1,080         | 220  | 1,200,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 220  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 220  | 1,500,000                |                      |
| No. 1                                     |      | 1,045                          | 1,200        | 1,305         | 220  | 1,400,000                |                      |
| No. 2                                     |      | 790                            | 910          | 990           | 220  | 1,200,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 220  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 220  | 1,500,000                |                      |
| No. 1                                     |      | 950                            | 1,090        | 1,185         | 220  | 1,400,000                |                      |
| No. 2                                     |      | 720                            | 825          | 900           | 220  | 1,200,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 220  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P(I) EST</b>                  | 2x4  |                                |              |               |  |                          | PLIB, TP             |
| <b>N Spr-Sc P(I) LAT</b>                  |      |                                |              |               |  |                          |                      |
| <b>N Spr-Sc P(I) LTH</b>                  |      |                                |              |               |  |                          |                      |
| <b>NSPR/SCOTP(I)LAT/LTH</b>               |      |                                |              |               |  |                          |                      |
| Select Structural                         |      | 1,985                          | 2,280        | 2,480         | 430  | 1,500,000                |                      |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 430  | 1,400,000                |                      |
| No. 2                                     |      | 1,295                          | 1,490        | 1,615         | 430  | 1,200,000                |                      |
| No. 3                                     |      | 735                            | 845          | 915           | 430  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 430  | 1,100,000                |                      |
| Construction Standard                     |      | 980                            | 1,125        | 1,220         | 430  | 1,100,000                |                      |
| Utility                                   | 545  | 630                            | 685          | 430           | 1,000,000  |                          |                      |
|   |      | 260                            | 300          | 325           | 430  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,720                          | 1,975        | 2,150         | 430  | 1,500,000                | PLIB, TP             |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 430  | 1,400,000                |                      |
| No. 2                                     |      | 1,120                          | 1,290        | 1,400         | 430  | 1,200,000                |                      |
| No. 3                                     |      | 635                            | 730          | 795           | 430  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 430  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,585                          | 1,825        | 1,985         | 430  | 1,500,000                | PLIB, TP             |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 430  | 1,400,000                |                      |
| No. 2                                     |      | 1,035                          | 1,190        | 1,295         | 430  | 1,200,000                |                      |
| No. 3                                     |      | 585                            | 675          | 735           | 430  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,455                          | 1,675        | 1,820         | 430  | 1,500,000                | PLIB, TP             |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 430  | 1,400,000                |                      |
| No. 2                                     |      | 950                            | 1,090        | 1,185         | 430  | 1,200,000                |                      |
| No. 3                                     |      | 540                            | 620          | 670           | 430  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,325                          | 1,520        | 1,655         | 430  | 1,500,000                | PLIB, TP             |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 430  | 1,400,000                |                      |
| No. 2                                     |      | 865                            | 990          | 1,080         | 430  | 1,200,000                |                      |
| No. 3                                     |      | 490                            | 560          | 610           | 430  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P(I) FIN</b>                  |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 210  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,425                          | 1,635        | 1,780         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 1,080                          | 1,240        | 1,350         | 210  | 1,200,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 210  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 210  | 1,100,000                |                      |
| Construction Standard                     |      | 835                            | 960          | 1,040         | 210  | 1,100,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 210  | 1,000,000                |                      |
| Utility                                   |      | 230                            | 265          | 290           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 935                            | 1,075        | 1,170         | 210  | 1,200,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 210  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 865                            | 990          | 1,080         | 210  | 1,200,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 210  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,045                          | 1,200        | 1,305         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 790                            | 910          | 990           | 210  | 1,200,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 210  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 950                            | 1,090        | 1,185         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 720                            | 825          | 900           | 210  | 1,200,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 210  | 1,100,000                |                      |
| <b>N Spr-Sc P(I) GER</b>                  |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                | PLIB                 |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction Standard                     |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |



**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P(I) ROM</b>                  |      |                                |              |               |  |                          |                      |
| <b>N Spr-Sc P(I) ROM-UKR</b>              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 270  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,465                          | 1,685        | 1,835         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 1,250                          | 1,440        | 1,565         | 270  | 1,200,000                |                      |
| No. 3                                     |      | 735                            | 845          | 915           | 270  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 270  | 1,100,000                |                      |
| Construction Standard                     |      | 980                            | 1,125        | 1,220         | 270  | 1,100,000                |                      |
| Utility                                   |      | 545                            | 630          | 685           | 270  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,270                          | 1,460        | 1,590         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 1,085                          | 1,245        | 1,355         | 270  | 1,200,000                |                      |
| No. 3                                     |      | 635                            | 730          | 795           | 270  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 270  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,175                          | 1,350        | 1,465         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 1,000                          | 1,150        | 1,250         | 270  | 1,200,000                |                      |
| No. 3                                     |      | 585                            | 675          | 735           | 270  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,075                          | 1,235        | 1,345         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 915                            | 1,055        | 1,145         | 270  | 1,200,000                |                      |
| No. 3                                     |      | 540                            | 620          | 670           | 270  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 980                            | 1,125        | 1,220         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 835                            | 960          | 1,040         | 270  | 1,200,000                |                      |
| No. 3                                     |      | 490                            | 560          | 610           | 270  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P(I) SW</b>                   |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 285  | 1,600,000                | PLIB                 |
| No. 1                                     |      | 1,425                          | 1,635        | 1,780         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 285  | 1,200,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 285  | 1,100,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 285  | 1,100,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 285  | 1,200,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 285  | 1,100,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 285  | 1,200,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 285  | 1,100,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 285  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 285  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,045                          | 1,200        | 1,305         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 285  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 950                            | 1,090        | 1,185         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 285  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-S Fir (I) GER</b>                | 2x4  |                                |              |               |  |                          | PLIB                 |
| <b>N Spr-S Fir (I) N FRA</b>              |      |                                |              |               |  |                          |                      |
| <b>N Spr-S Fir(I) GER N FRA</b>           |      |                                |              |               |  |                          |                      |
| Select Structural                         |      | 1,640                          | 1,885        | 2,050         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 1,250                          | 1,440        | 1,565         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,250                          | 1,440        | 1,565         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 735                            | 845          | 915           | 355  | 1,100,000                |                      |
| Stud                                      |      | 725                            | 835          | 910           | 355  | 1,100,000                |                      |
| Construction Standard                     |      | 950                            | 1,090        | 1,185         | 355  | 1,100,000                |                      |
| Utility                                   |      | 545                            | 630          | 685           | 355  | 1,000,000                |                      |
|   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 355  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,085                          | 1,245        | 1,355         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,085                          | 1,245        | 1,355         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 635                            | 730          | 795           | 355  | 1,100,000                |                      |
| Stud                                      |      | 660                            | 760          | 825           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 355  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,000                          | 1,150        | 1,250         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,000                          | 1,150        | 1,250         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 585                            | 675          | 735           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 355  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 915                            | 1,055        | 1,145         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 915                            | 1,055        | 1,145         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 540                            | 620          | 670           | 355  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 355  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 835                            | 960          | 1,040         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 835                            | 960          | 1,040         | 355  | 1,200,000                |                      |
| No. 3                                     |      | 490                            | 560          | 610           | 355  | 1,100,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P-DF (I) GER</b>              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                | PLIB                 |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction                              |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |
| <b>N Spr-Sc P-DF-L (I) GER</b>            |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction                              |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 355  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>N Spr-Sc P-DF-S Fir (I) GER</b>        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 355  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,250                          | 1,440        | 1,565         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction Standard                     |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 1,085                          | 1,245        | 1,355         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 1,000                          | 1,150        | 1,250         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 915                            | 1,055        | 1,145         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 835                            | 960          | 1,040         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade       | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NSPR/SCOTP(I)EST/FIN/GER/LIT/ROM /SW/UKR</b> |      |                                |              |               |  |                          |                      |
| Select Structural                               | 2x4  | 1,985                          | 2,280        | 2,480         | 210  | 1,500,000                | TP                   |
| No. 1   |      | 1,380                          | 1,585        | 1,725         | 210  | 1,400,000                |                      |
| No. 2   |      | 990                            | 1,140        | 1,240         | 210  | 1,100,000                |                      |
| No. 3   |      | 560                            | 645          | 700           | 210  | 1,000,000                |                      |
| Stud  |      | 570                            | 655          | 710           | 210  | 1,000,000                |                      |
| Construction                                    |      | 750                            | 860          | 935           | 210  | 1,100,000                |                      |
| Standard  |      | 430                            | 495          | 540           | 210  | 1,000,000                |                      |
| Utility   |      | 200                            | 230          | 250           | 210  | 900,000                  |                      |
| Select Structural                               | 2x6  | 1,720                          | 1,975        | 2,150         | 210  | 1,500,000                |                      |
| No. 1   |      | 1,195                          | 1,375        | 1,495         | 210  | 1,400,000                |                      |
| No. 2   |      | 860                            | 990          | 1,075         | 210  | 1,100,000                |                      |
| No. 3   |      | 485                            | 560          | 605           | 210  | 1,000,000                |                      |
| Stud  |      | 520                            | 595          | 645           | 210  | 1,000,000                |                      |
| Select Structural                               | 2x8  | 1,585                          | 1,825        | 1,985         | 210  | 1,500,000                |                      |
| No. 1   |      | 1,105                          | 1,270        | 1,380         | 210  | 1,400,000                |                      |
| No. 2   |      | 795                            | 915          | 990           | 210  | 1,100,000                |                      |
| No. 3   |      | 450                            | 515          | 560           | 210  | 1,000,000                |                      |
| Select Structural                               | 2x10 | 1,455                          | 1,675        | 1,820         | 210  | 1,500,000                |                      |
| No. 1   |      | 1,010                          | 1,165        | 1,265         | 210  | 1,400,000                |                      |
| No. 2   |      | 725                            | 835          | 910           | 210  | 1,100,000                |                      |
| No. 3   |      | 410                            | 475          | 515           | 210  | 1,000,000                |                      |
| Select Structural                               | 2x12 | 1,325                          | 1,520        | 1,655         | 210  | 1,500,000                |                      |
| No. 1   |      | 920                            | 1,060        | 1,150         | 210  | 1,400,000                |                      |
| No. 2   |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| No. 3   |      | 375                            | 430          | 465           | 210  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NSPR/SCOTP(D)GER/ROM/SW/UKR</b>        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 270  | 1,500,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 270  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 270  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 270  | 1,000,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 270  | 1,100,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 270  | 1,000,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 270  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 270  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 270  | 1,000,000                |                      |
| Stud                                      | 520  | 595                            | 645          | 270           | 1,000,000  |                          |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 270  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 270  | 1,500,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 270  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 270  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 270  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NSPR/SCOTP(D)GER/SW</b>                |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 285  | 1,600,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 285  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 285  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 285  | 1,000,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 285  | 1,100,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 285  | 1,000,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 285  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 285  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 285  | 1,000,000                |                      |
| Stud                                      | 520  | 595                            | 645          | 285           | 1,000,000  |                          |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 285  | 1,000,000                |                      |
| <b>NSPR/SCOTP(I)SW</b>                    |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,155                          | 2,480        | 2,695         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,425                          | 1,635        | 1,780         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 285  | 1,200,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 285  | 1,100,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 285  | 1,100,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 285  | 1,200,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 285  | 1,100,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x6  | 1,870                          | 2,150        | 2,335         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 285  | 1,200,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 285  | 1,100,000                |                      |
| Stud                                      | 520  | 595                            | 645          | 285           | 1,100,000  |                          |                      |
| Select Structural                         | 2x8  | 1,725                          | 1,985        | 2,155         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,140                          | 1,310        | 1,425         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 285  | 1,100,000                |                      |
| Select Structural                         | 2x10 | 1,580                          | 1,820        | 1,975         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 1,045                          | 1,200        | 1,305         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 285  | 1,100,000                |                      |
| Select Structural                         | 2x12 | 1,440                          | 1,655        | 1,795         | 285  | 1,600,000                |                      |
| No. 1                                     |      | 950                            | 1,090        | 1,185         | 285  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 285  | 1,200,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 285  | 1,100,000                |                      |



**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>NSPR/SCOTP/SFIR(D)GER</b>              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 355  | 1,500,000                | TP                   |
| No. 1                                     |      | 1,250                          | 1,440        | 1,565         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 355  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 355  | 1,000,000                |                      |
| Construction                              |      | 920                            | 1,060        | 1,150         | 355  | 1,100,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 355  | 1,000,000                |                      |
| Utility                                   |      | 260                            | 300          | 325           | 355  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 1,085                          | 1,245        | 1,355         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 355  | 1,000,000                |                      |
| Stud                                      | 635  | 725                            | 790          | 355           | 1,000,000  |                          |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 1,000                          | 1,150        | 1,250         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 915                            | 1,055        | 1,145         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 355  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 355  | 1,500,000                |                      |
| No. 1                                     |      | 835                            | 960          | 1,040         | 355  | 1,400,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 355  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 355  | 1,000,000                |                      |
| <b>PP-LP</b>                              |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,555                          | 1,785        | 1,940         | 335  | 1,200,000                | PLIB, WWPA           |
| No. 1                                     |      | 1,165                          | 1,340        | 1,455         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,165                          | 1,340        | 1,455         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 335  | 900,000                  |                      |
| Stud                                      |      | 665                            | 765          | 830           | 335  | 900,000                  |                      |
| Construction                              |      | 890                            | 1,025        | 1,115         | 335  | 1,000,000                |                      |
| Standard                                  |      | 490                            | 560          | 610           | 335  | 900,000                  |                      |
| Utility                                   |      | 230                            | 265          | 290           | 335  | 800,000                  |                      |
| Select Structural                         | 2x6  | 1,345                          | 1,545        | 1,680         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 1,010                          | 1,160        | 1,260         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,010                          | 1,160        | 1,260         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 335  | 900,000                  |                      |
| Stud                                      | 605  | 695                            | 755          | 335           | 900,000  |                          |                      |
| Select Structural                         | 2x8  | 1,240                          | 1,430        | 1,555         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 930                            | 1,070        | 1,165         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 930                            | 1,070        | 1,165         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 900,000                  |                      |
| Select Structural                         | 2x10 | 1,140                          | 1,310        | 1,425         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 855                            | 980          | 1,065         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 855                            | 980          | 1,065         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 335  | 900,000                  |                      |
| Select Structural                         | 2x12 | 1,035                          | 1,190        | 1,295         | 335  | 1,200,000                |                      |
| No. 1                                     |      | 775                            | 895          | 970           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 335  | 900,000                  |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>R. PINE/NSPR(N)/SPF/SPF(S)</b>         |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 335  | 1,100,000                | TP                   |
| No. 1                                     |      | 1,080                          | 1,240        | 1,350         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,080                          | 1,240        | 1,350         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 605                            | 695          | 755           | 335  | 1,000,000                |                      |
| Stud                                      |      | 600                            | 690          | 750           | 335  | 1,000,000                |                      |
| Construction                              |      | 805                            | 925          | 1,005         | 335  | 1,000,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 335  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 935                            | 1,075        | 1,170         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 935                            | 1,075        | 1,170         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 525                            | 600          | 655           | 335  | 1,000,000                |                      |
| Stud                                      |      | 545                            | 630          | 685           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 865                            | 990          | 1,080         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 865                            | 990          | 1,080         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 555          | 605           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 790                            | 910          | 990           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 790                            | 910          | 990           | 335  | 1,100,000                |                      |
| No. 3                                     |      | 445                            | 510          | 555           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 720                            | 825          | 900           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 720                            | 825          | 900           | 335  | 1,100,000                |                      |
| No. 3                                     |      | 405                            | 465          | 505           | 335  | 1,000,000                |                      |
| <b>Sc P (I) EST FIN GER LTH SW</b>        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,985                          | 2,280        | 2,480         | 210  | 1,500,000                | PLIB                 |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 210  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 210  | 1,000,000                |                      |
| Construction                              |      | 750                            | 860          | 935           | 210  | 1,100,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 210  | 1,000,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 210  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,720                          | 1,975        | 2,150         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 210  | 1,000,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,585                          | 1,825        | 1,985         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,455                          | 1,675        | 1,820         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,325                          | 1,520        | 1,655         | 210  | 1,500,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 210  | 1,400,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 210  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>Sitka Sp/HF</b>                        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,245                          | 2,580        | 2,805         | 335  | 1,300,000                | PLIB                 |
| No. 1                                     |      | 1,510                          | 1,735        | 1,885         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 775                            | 895          | 970           | 335  | 1,000,000                |                      |
| Stud                                      |      | 760                            | 875          | 950           | 335  | 1,000,000                |                      |
| Construction                              |      | 1,005                          | 1,155        | 1,260         | 335  | 1,000,000                |                      |
| Standard                                  |      | 575                            | 660          | 720           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,945                          | 2,235        | 2,430         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,310                          | 1,505        | 1,635         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 675                            | 775          | 840           | 335  | 1,000,000                |                      |
| Stud                                      |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,795                          | 2,065        | 2,245         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,210                          | 1,390        | 1,510         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 620                            | 715          | 775           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,645                          | 1,890        | 2,055         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,275        | 1,385         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 570                            | 655          | 710           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,495                          | 1,720        | 1,870         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,005                          | 1,155        | 1,260         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size  | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency       |
|---|-------|--------------------------------|--------------|---------------|--|--------------------------|----------------------------|
|   |       | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                            |
| <b>SPF/SPF-S</b>                          | 2x4   |                                |              |               |  |                          | NLGA,<br>PLIB, TP,<br>WWPA |
| <b>SPF/SPF(S)</b>                         |       |                                |              |               |  |                          |                            |
| <b>SPF<sup>S</sup>/SPF</b>                |       |                                |              |               |  |                          |                            |
| <b>SPF/SPF-s</b>                          |       |                                |              |               |  |                          |                            |
| <b>S-P-F/SPFs</b>                         |       |                                |              |               |  |                          |                            |
| Select Structural                         |       | 2,155                          | 2,480        | 2,695         | 335  | 1,300,000                |                            |
| No. 1                                     |       | 1,510                          | 1,735        | 1,885         | 335  | 1,200,000                |                            |
| No. 2                                     |       | 1,335                          | 1,535        | 1,670         | 335  | 1,100,000                |                            |
| No. 3                                     |       | 775                            | 895          | 970           | 335  | 1,000,000                |                            |
| Stud                                      |       | 760                            | 875          | 950           | 335  | 1,000,000                |                            |
| Construction                              | 1,005 | 1,155                          | 1,260        | 335           | 1,000,000  |                          |                            |
| Standard                                  | 575   | 660                            | 720          | 335           | 900,000  |                          |                            |
| Utility                                   | 260   | 300                            | 325          | 335           | 900,000  |                          |                            |
| Select Structural                         | 2x6   | 1,870                          | 2,150        | 2,335         | 335  | 1,300,000                | NLGA,<br>PLIB, TP,<br>WWPA |
| No. 1                                     |       | 1,310                          | 1,505        | 1,635         | 335  | 1,200,000                |                            |
| No. 2                                     |       | 1,160                          | 1,330        | 1,450         | 335  | 1,100,000                |                            |
| No. 3                                     |       | 675                            | 775          | 840           | 335  | 1,000,000                |                            |
| Stud                                      |       | 690                            | 795          | 865           | 335  | 1,000,000                |                            |
| Select Structural                         | 2x8   | 1,725                          | 1,985        | 2,155         | 335  | 1,300,000                | NLGA,<br>PLIB, TP,<br>WWPA |
| No. 1                                     |       | 1,210                          | 1,390        | 1,510         | 335  | 1,200,000                |                            |
| No. 2                                     |       | 1,070                          | 1,230        | 1,335         | 335  | 1,100,000                |                            |
| No. 3                                     |       | 620                            | 715          | 775           | 335  | 1,000,000                |                            |
| Select Structural                         | 2x10  | 1,580                          | 1,820        | 1,975         | 335  | 1,300,000                | NLGA,<br>PLIB, TP,<br>WWPA |
| No. 1                                     |       | 1,105                          | 1,275        | 1,385         | 335  | 1,200,000                |                            |
| No. 2                                     |       | 980                            | 1,125        | 1,225         | 335  | 1,100,000                |                            |
| No. 3                                     |       | 570                            | 655          | 710           | 335  | 1,000,000                |                            |
| Select Structural                         | 2x12  | 1,440                          | 1,655        | 1,795         | 335  | 1,300,000                | NLGA,<br>PLIB, TP,<br>WWPA |
| No. 1                                     |       | 1,005                          | 1,155        | 1,260         | 335  | 1,200,000                |                            |
| No. 2                                     |       | 890                            | 1,025        | 1,115         | 335  | 1,100,000                |                            |
| No. 3                                     |       | 520                            | 595          | 645           | 335  | 1,000,000                |                            |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS</b> |      |                                |              |               |  |                          |                      |
| <b>/EST/FIN/GER/LTH/SW</b>                |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 210  | 1,300,000                | TP                   |
| No. 1                                     |      | 1,250                          | 1,440        | 1,565         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 210  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 210  | 1,000,000                |                      |
| Construction                              |      | 750                            | 860          | 935           | 210  | 1,000,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 210  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 210  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 210  | 1,300,000                |                      |
| No. 1                                     |      | 1,085                          | 1,245        | 1,355         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 210  | 1,000,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 210  | 1,300,000                |                      |
| No. 1                                     |      | 1,000                          | 1,150        | 1,250         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 210  | 1,000,000                |                      |
| Select Structural                         |      | 2x10                           | 1,200        | 1,380         | 1,500  | 210                      |                      |
| No. 1                                     | 915  |                                | 1,055        | 1,145         | 210  | 1,200,000                |                      |
| No. 2                                     | 725  |                                | 835          | 910           | 210  | 1,100,000                |                      |
| No. 3                                     | 410  |                                | 475          | 515           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 210  | 1,300,000                |                      |
| No. 1                                     |      | 835                            | 960          | 1,040         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 210  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS</b> |      |                                |              |               |  |                          |                      |
| <b>/FIN/GER/SW</b>                        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 210  | 1,300,000                | TP                   |
| No. 1                                     |      | 1,250                          | 1,440        | 1,565         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 210  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 210  | 1,000,000                |                      |
| Construction                              |      | 750                            | 860          | 935           | 210  | 1,000,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 210  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 210  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 210  | 1,300,000                |                      |
| No. 1                                     |      | 1,085                          | 1,245        | 1,355         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 210  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 210  | 1,000,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 210  | 1,300,000                |                      |
| No. 1                                     |      | 1,000                          | 1,150        | 1,250         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 210  | 1,000,000                |                      |
| Select Structural                         |      | 2x10                           | 1,200        | 1,380         | 1,500  | 210                      |                      |
| No. 1                                     | 915  |                                | 1,055        | 1,145         | 210  | 1,200,000                |                      |
| No. 2                                     | 725  |                                | 835          | 910           | 210  | 1,100,000                |                      |
| No. 3                                     | 410  |                                | 475          | 515           | 210  | 1,000,000                |                      |
| Select Structural                         | 2x12 |                                | 1,095        | 1,255         | 1,365  | 210                      |                      |
| No. 1                                     |      | 835                            | 960          | 1,040         | 210  | 1,200,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 210  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade                 | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS /GER/ROM/SW/UKR</b> |      |                                |              |               |  |                          |                      |
| Select Structural   | 2x4  | 1,640                          | 1,885        | 2,050         | 260  | 1,300,000                | TP                   |
| No. 1   |      | 1,250                          | 1,440        | 1,565         | 260  | 1,200,000                |                      |
| No. 2   |      | 990                            | 1,140        | 1,240         | 260  | 1,100,000                |                      |
| No. 3   |      | 560                            | 645          | 700           | 260  | 1,000,000                |                      |
| Stud  |      | 570                            | 655          | 710           | 260  | 1,000,000                |                      |
| Construction Standard                                     |      | 750                            | 860          | 935           | 260  | 1,000,000                |                      |
| Utility   |      | 430                            | 495          | 540           | 260  | 900,000                  |                      |
| Utility   |      | 200                            | 230          | 250           | 260  | 900,000                  |                      |
| Select Structural   | 2x6  | 1,420                          | 1,635        | 1,775         | 260  | 1,300,000                |                      |
| No. 1   |      | 1,085                          | 1,245        | 1,355         | 260  | 1,200,000                |                      |
| No. 2   |      | 860                            | 990          | 1,075         | 260  | 1,100,000                |                      |
| No. 3   |      | 485                            | 560          | 605           | 260  | 1,000,000                |                      |
| Stud  |      | 520                            | 595          | 645           | 260  | 1,000,000                |                      |
| Select Structural   | 2x8  | 1,310                          | 1,510        | 1,640         | 260  | 1,300,000                |                      |
| No. 1   |      | 1,000                          | 1,150        | 1,250         | 260  | 1,200,000                |                      |
| No. 2   |      | 795                            | 915          | 990           | 260  | 1,100,000                |                      |
| No. 3   |      | 450                            | 515          | 560           | 260  | 1,000,000                |                      |
| Stud  |      | 450                            | 515          | 560           | 260  | 1,000,000                |                      |
| Select Structural   | 2x10 | 1,200                          | 1,380        | 1,500         | 260  | 1,300,000                |                      |
| No. 1   |      | 915                            | 1,055        | 1,145         | 260  | 1,200,000                |                      |
| No. 2   |      | 725                            | 835          | 910           | 260  | 1,100,000                |                      |
| No. 3   |      | 410                            | 475          | 515           | 260  | 1,000,000                |                      |
| Stud  |      | 410                            | 475          | 515           | 260  | 1,000,000                |                      |
| Select Structural   | 2x12 | 1,095                          | 1,255        | 1,365         | 260  | 1,300,000                |                      |
| No. 1   |      | 835                            | 960          | 1,040         | 260  | 1,200,000                |                      |
| No. 2   |      | 660                            | 760          | 825           | 260  | 1,100,000                |                      |
| No. 3   |      | 375                            | 430          | 465           | 260  | 1,000,000                |                      |
| Stud  |      | 375                            | 430          | 465           | 260  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade                                  | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|--|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|  |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S AS/NSPR/SCOTP/SFIR(I)AUS<br/>/EST/FIN/GER/LTH/ROM/ SW/UKR</b> |      |                                |              |               |  |                          |                      |
| Select Structural  | 2x4  | 1,640                          | 1,885        | 2,050         | 210  | 1,300,000                | TP                   |
| No. 1  |      | 1,250                          | 1,440        | 1,565         | 210  | 1,200,000                |                      |
| No. 2  |      | 990                            | 1,140        | 1,240         | 210  | 1,100,000                |                      |
| No. 3  |      | 560                            | 645          | 700           | 210  | 1,000,000                |                      |
| Stud   |      | 570                            | 655          | 710           | 210  | 1,000,000                |                      |
| Construction   |      | 750                            | 860          | 935           | 210  | 1,000,000                |                      |
| Standard   |      | 430                            | 495          | 540           | 210  | 900,000                  |                      |
| Utility  |      | 200                            | 230          | 250           | 210  | 900,000                  |                      |
| Select Structural  | 2x6  | 1,420                          | 1,635        | 1,775         | 210  | 1,300,000                |                      |
| No. 1  |      | 1,085                          | 1,245        | 1,355         | 210  | 1,200,000                |                      |
| No. 2  |      | 860                            | 990          | 1,075         | 210  | 1,100,000                |                      |
| No. 3  |      | 485                            | 560          | 605           | 210  | 1,000,000                |                      |
| Stud   |      | 520                            | 595          | 645           | 210  | 1,000,000                |                      |
| Select Structural  | 2x8  | 1,310                          | 1,510        | 1,640         | 210  | 1,300,000                |                      |
| No. 1  |      | 1,000                          | 1,150        | 1,250         | 210  | 1,200,000                |                      |
| No. 2  |      | 795                            | 915          | 990           | 210  | 1,100,000                |                      |
| No. 3  |      | 450                            | 515          | 560           | 210  | 1,000,000                |                      |
| Select Structural  |      | 2x10                           | 1,200        | 1,380         | 1,500  | 210                      |                      |
| No. 1  | 915  |                                | 1,055        | 1,145         | 210  | 1,200,000                |                      |
| No. 2  | 725  |                                | 835          | 910           | 210  | 1,100,000                |                      |
| No. 3  | 410  |                                | 475          | 515           | 210  | 1,000,000                |                      |
| Select Structural  | 2x12 |                                | 1,095        | 1,255         | 1,365  | 210                      |                      |
| No. 1  |      | 835                            | 960          | 1,040         | 210  | 1,200,000                |                      |
| No. 2  |      | 660                            | 760          | 825           | 210  | 1,100,000                |                      |
| No. 3  |      | 375                            | 430          | 465           | 210  | 1,000,000                |                      |



**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>S-P-F/ NSpr(N)</b>                     |      |                                |              |               |  |                          |                      |
| <b>SPF/NSpr(N)</b>                        |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 410  | 1,500,000                | NLGA                 |
| No. 1                                     |      | 1,120                          | 1,290        | 1,400         | 410  | 1,300,000                |                      |
| No. 2                                     |      | 1,120                          | 1,290        | 1,400         | 410  | 1,300,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 410  | 1,200,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 410  | 1,200,000                |                      |
| Construction                              |      | 805                            | 925          | 1,005         | 410  | 1,200,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 410  | 1,100,000                |                      |
| Utility                                   |      | 200                            | 230          | 250           | 410  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 410  | 1,500,000                |                      |
| No. 1                                     |      | 970                            | 1,120        | 1,215         | 410  | 1,300,000                |                      |
| No. 2                                     |      | 970                            | 1,120        | 1,215         | 410  | 1,300,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 410  | 1,200,000                |                      |
| Stud                                      |      | 575                            | 660          | 720           | 410  | 1,200,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 410  | 1,500,000                |                      |
| No. 1                                     |      | 895                            | 1,030        | 1,120         | 410  | 1,300,000                |                      |
| No. 2                                     |      | 895                            | 1,030        | 1,120         | 410  | 1,300,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 410  | 1,200,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 410  | 1,500,000                |                      |
| No. 1                                     |      | 820                            | 945          | 1,030         | 410  | 1,300,000                |                      |
| No. 2                                     |      | 820                            | 945          | 1,030         | 410  | 1,300,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 410  | 1,200,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 410  | 1,500,000                |                      |
| No. 1                                     |      | 750                            | 860          | 935           | 410  | 1,300,000                |                      |
| No. 2                                     |      | 750                            | 860          | 935           | 410  | 1,300,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 410  | 1,200,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>S-P-F/ SPFs/NSpr(N)</b>                |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,640                          | 1,885        | 2,050         | 335  | 1,300,000                | NLGA                 |
| No. 1                                     |      | 1,120                          | 1,290        | 1,400         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,120                          | 1,290        | 1,400         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 645                            | 745          | 810           | 335  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 335  | 1,000,000                |                      |
| Construction Standard                     |      | 805                            | 925          | 1,005         | 335  | 1,000,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 335  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,420                          | 1,635        | 1,775         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 970                            | 1,120        | 1,215         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 970                            | 1,120        | 1,215         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 335  | 1,000,000                |                      |
| Stud                                      |      | 575                            | 660          | 720           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,310                          | 1,510        | 1,640         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 895                            | 1,030        | 1,120         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 895                            | 1,030        | 1,120         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 520                            | 595          | 645           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,200                          | 1,380        | 1,500         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 820                            | 945          | 1,030         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 820                            | 945          | 1,030         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 475                            | 545          | 595           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,095                          | 1,255        | 1,365         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 750                            | 860          | 935           | 335  | 1,200,000                |                      |
| No. 2                                     |      | 750                            | 860          | 935           | 335  | 1,100,000                |                      |
| No. 3                                     |      | 430                            | 495          | 540           | 335  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S NSPR/SCOTP(I)GER</b>         |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 335  | 1,300,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,210                          | 1,390        | 1,510         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 690                            | 795          | 865           | 335  | 1,000,000                |                      |
| Stud                                      |      | 695                            | 800          | 870           | 335  | 1,000,000                |                      |
| Construction Standard                     |      | 920                            | 1,060        | 1,150         | 335  | 1,000,000                |                      |
| Standard                                  |      | 520                            | 595          | 645           | 335  | 900,000                  |                      |
| Utility                                   |      | 260                            | 300          | 325           | 335  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 1,045                          | 1,205        | 1,310         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 600                            | 690          | 750           | 335  | 1,000,000                |                      |
| Stud                                      |      | 635                            | 725          | 790           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 965                            | 1,110        | 1,210         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 550                            | 635          | 690           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 885                            | 1,020        | 1,105         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 505                            | 580          | 635           | 335  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 335  | 1,300,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 335  | 1,200,000                |                      |
| No. 2                                     |      | 805                            | 925          | 1,005         | 335  | 1,100,000                |                      |
| No. 3                                     |      | 460                            | 530          | 575           | 335  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade     | Size  | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|-------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |       | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S NSPR/SCOTP(I)GER/ROM /SW/UKR</b> |       |                                |              |               |  |                          |                      |
| Select Structural                             | 2x4   | 2,070                          | 2,380        | 2,590         | 270  | 1,300,000                | TP                   |
| No. 1   |       | 1,380                          | 1,585        | 1,725         | 270  | 1,200,000                |                      |
| No. 2   |       | 990                            | 1,140        | 1,240         | 270  | 1,100,000                |                      |
| No. 3   |       | 560                            | 645          | 700           | 270  | 1,000,000                |                      |
| Stud  |       | 570                            | 655          | 710           | 270  | 1,000,000                |                      |
| Construction                                  |       | 750                            | 860          | 935           | 270  | 1,000,000                |                      |
| Standard                                      |       | 430                            | 495          | 540           | 270  | 900,000                  |                      |
| Utility                                       |       | 200                            | 230          | 250           | 270  | 900,000                  |                      |
| Select Structural                             | 2x6   | 1,795                          | 2,065        | 2,245         | 270  | 1,300,000                |                      |
| No. 1   |       | 1,195                          | 1,375        | 1,495         | 270  | 1,200,000                |                      |
| No. 2   |       | 860                            | 990          | 1,075         | 270  | 1,100,000                |                      |
| No. 3   |       | 485                            | 560          | 605           | 270  | 1,000,000                |                      |
| Stud  |       | 520                            | 595          | 645           | 270  | 1,000,000                |                      |
| Select Structural                             | 2x8   | 1,655                          | 1,905        | 2,070         | 270  | 1,300,000                |                      |
| No. 1   |       | 1,105                          | 1,270        | 1,380         | 270  | 1,200,000                |                      |
| No. 2   |       | 795                            | 915          | 990           | 270  | 1,100,000                |                      |
| No. 3   |       | 450                            | 515          | 560           | 270  | 1,000,000                |                      |
| Select Structural                             |       | 2x10                           | 1,520        | 1,745         | 1,900  | 270                      |                      |
| No. 1   | 1,010 |                                | 1,165        | 1,265         | 270  | 1,200,000                |                      |
| No. 2   | 725   |                                | 835          | 910           | 270  | 1,100,000                |                      |
| No. 3   | 410   |                                | 475          | 515           | 270  | 1,000,000                |                      |
| Select Structural                             | 2x12  |                                | 1,380        | 1,585         | 1,725  | 270                      |                      |
| No. 1   |       | 920                            | 1,060        | 1,150         | 270  | 1,200,000                |                      |
| No. 2   |       | 660                            | 760          | 825           | 270  | 1,100,000                |                      |
| No. 3   |       | 375                            | 430          | 465           | 270  | 1,000,000                |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>SPF/SPF-S NSPR/SCOTP(I)GER/SW</b>      |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,070                          | 2,380        | 2,590         | 285  | 1,300,000                | TP                   |
| No. 1                                     |      | 1,380                          | 1,585        | 1,725         | 285  | 1,200,000                |                      |
| No. 2                                     |      | 990                            | 1,140        | 1,240         | 285  | 1,100,000                |                      |
| No. 3                                     |      | 560                            | 645          | 700           | 285  | 1,000,000                |                      |
| Stud                                      |      | 570                            | 655          | 710           | 285  | 1,000,000                |                      |
| Construction Standard                     |      | 750                            | 860          | 935           | 285  | 1,000,000                |                      |
| Standard                                  |      | 430                            | 495          | 540           | 285  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 285  | 900,000                  |                      |
| Select Structural                         | 2x6  | 1,795                          | 2,065        | 2,245         | 285  | 1,300,000                |                      |
| No. 1                                     |      | 1,195                          | 1,375        | 1,495         | 285  | 1,200,000                |                      |
| No. 2                                     |      | 860                            | 990          | 1,075         | 285  | 1,100,000                |                      |
| No. 3                                     |      | 485                            | 560          | 605           | 285  | 1,000,000                |                      |
| Stud                                      |      | 520                            | 595          | 645           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x8  | 1,655                          | 1,905        | 2,070         | 285  | 1,300,000                |                      |
| No. 1                                     |      | 1,105                          | 1,270        | 1,380         | 285  | 1,200,000                |                      |
| No. 2                                     |      | 795                            | 915          | 990           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 450                            | 515          | 560           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x10 | 1,520                          | 1,745        | 1,900         | 285  | 1,300,000                |                      |
| No. 1                                     |      | 1,010                          | 1,165        | 1,265         | 285  | 1,200,000                |                      |
| No. 2                                     |      | 725                            | 835          | 910           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 410                            | 475          | 515           | 285  | 1,000,000                |                      |
| Select Structural                         | 2x12 | 1,380                          | 1,585        | 1,725         | 285  | 1,300,000                |                      |
| No. 1                                     |      | 920                            | 1,060        | 1,150         | 285  | 1,200,000                |                      |
| No. 2                                     |      | 660                            | 760          | 825           | 285  | 1,100,000                |                      |
| No. 3                                     |      | 375                            | 430          | 465           | 285  | 1,000,000                |                      |
| <b>SYP/WEST WOODS/NORTH SPECIES</b>       |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 1,555                          | 1,785        | 1,940         | 335  | 1,100,000                | TP                   |
| No. 1                                     |      | 1,080                          | 1,240        | 1,350         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 1,080                          | 1,240        | 1,350         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 605                            | 695          | 755           | 335  | 900,000                  |                      |
| Stud                                      |      | 600                            | 690          | 750           | 335  | 900,000                  |                      |
| Construction Standard                     |      | 805                            | 925          | 1,005         | 335  | 1,000,000                |                      |
| Standard                                  |      | 460                            | 530          | 575           | 335  | 900,000                  |                      |
| Utility                                   |      | 200                            | 230          | 250           | 335  | 800,000                  |                      |
| Select Structural                         | 2x6  | 1,345                          | 1,545        | 1,680         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 935                            | 1,075        | 1,170         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 935                            | 1,075        | 1,170         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 525                            | 600          | 655           | 335  | 900,000                  |                      |
| Stud                                      |      | 545                            | 630          | 685           | 335  | 900,000                  |                      |
| Select Structural                         | 2x8  | 1,240                          | 1,430        | 1,555         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 865                            | 990          | 1,080         | 335  | 1,100,000                |                      |
| No. 2                                     |      | 865                            | 990          | 1,080         | 335  | 1,000,000                |                      |
| No. 3                                     |      | 485                            | 555          | 605           | 335  | 900,000                  |                      |
| Select Structural                         | 2x10 | 1,140                          | 1,310        | 1,425         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 790                            | 910          | 990           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 790                            | 910          | 990           | 335  | 1,000,000                |                      |
| No. 3                                     |      | 445                            | 510          | 555           | 335  | 900,000                  |                      |
| Select Structural                         | 2x12 | 1,035                          | 1,190        | 1,295         | 335  | 1,100,000                |                      |
| No. 1                                     |      | 720                            | 825          | 900           | 335  | 1,100,000                |                      |
| No. 2                                     |      | 720                            | 825          | 900           | 335  | 1,000,000                |                      |
| No. 3                                     |      | 405                            | 465          | 505           | 335  | 900,000                  |                      |

**TABLE W-1 DESIGN VALUES FOR JOISTS AND RAFTERS - MULTI-SPECIES AND COUNTRY GRADEMARKED VISUALLY GRADED LUMBER<sup>1,2</sup>**

These  $F_b$  values are for use where repetitive members are spaced not more than 24 inches. For wider spacing,  $F_b$  values shall be reduced 13%. Values for surfaced dry or surfaced green lumber apply at 19% maximum moisture content in use.

| Multi-Species Country Grademark and Grade | Size | Design Value in Bending, $F_b$ |              |               | Compression perpendicular to grain, $F_{c\perp}$ | Modulus of Elasticity, E | Grading Rules Agency |
|---|------|--------------------------------|--------------|---------------|--|--------------------------|----------------------|
|   |      | Normal Duration                | Snow Loading | 7-Day Loading |  |                          |                      |
| <b>WH-S Fir</b>                           |      |                                |              |               |  |                          |                      |
| Select Structural                         | 2x4  | 2,415                          | 2,775        | 3,020         | 405  | 1,600,000                | PLIB                 |
| No. 1 & Btr                               |      | 1,900                          | 2,180        | 2,370         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,680                          | 1,935        | 2,100         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,465                          | 1,685        | 1,835         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 865                            | 990          | 1,080         | 405  | 1,200,000                |                      |
| Stud                                      |      | 855                            | 980          | 1,065         | 405  | 1,200,000                |                      |
| Construction                              |      | 1,120                          | 1,290        | 1,400         | 405  | 1,300,000                |                      |
| Standard                                  |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Utility                                   |      | 290                            | 330          | 360           | 405  | 1,100,000                |                      |
| Select Structural                         | 2x6  | 2,095                          | 2,405        | 2,615         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,645                          | 1,890        | 2,055         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,460                          | 1,675        | 1,820         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,270                          | 1,460        | 1,590         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 750                            | 860          | 935           | 405  | 1,200,000                |                      |
| Stud                                      | 775  | 895                            | 970          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x8  | 1,930                          | 2,220        | 2,415         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,520                          | 1,745        | 1,900         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,345                          | 1,545        | 1,680         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,175                          | 1,350        | 1,465         | 405  | 1,300,000                |                      |
| No. 3                                     | 690  | 795                            | 865          | 405           | 1,200,000  |                          |                      |
| Select Structural                         | 2x10 | 1,770                          | 2,035        | 2,215         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,390                          | 1,600        | 1,740         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,235                          | 1,420        | 1,540         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 1,075                          | 1,235        | 1,345         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 635                            | 725          | 790           | 405  | 1,200,000                |                      |
| Select Structural                         | 2x12 | 1,610                          | 1,850        | 2,015         | 405  | 1,600,000                |                      |
| No. 1 & Btr                               |      | 1,265                          | 1,455        | 1,580         | 405  | 1,500,000                |                      |
| No. 1                                     |      | 1,120                          | 1,290        | 1,400         | 405  | 1,500,000                |                      |
| No. 2                                     |      | 980                            | 1,125        | 1,220         | 405  | 1,300,000                |                      |
| No. 3                                     |      | 575                            | 660          | 720           | 405  | 1,200,000                |                      |