

**Table 1B Section Properties of Standard Dressed (S4S) Sawn Lumber**

| Nominal<br>Size<br>b d | Standard<br>Dressed<br>Size (S4S)<br>b d<br><br>inches inches |       | Area<br>of<br>Section<br>A<br>in. <sup>2</sup> | X-X Axis  |  | Y-Y Axis  |  | Approximate weight in pounds per linear foot (lb./ft.)<br>of piece when density of wood equals: |                         |                         |                         |                         |                         |
|------------------------|---|-------|--|---|--|---|--|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                        |   |       |  | Section<br>Modulus<br>S <sub>xx</sub><br>in. <sup>3</sup> | Moment<br>of<br>Inertia<br>I <sub>xx</sub><br>in. <sup>4</sup> | Section<br>Modulus<br>S <sub>yy</sub><br>in. <sup>3</sup> | Moment<br>of<br>Inertia<br>I <sub>yy</sub><br>in. <sup>4</sup> |   |                         |                         |                         |                         |                         |
|                        |   |       |  |   |  |   |  | 25 lb./ft. <sup>3</sup>   | 30 lb./ft. <sup>3</sup> | 35 lb./ft. <sup>3</sup> | 40 lb./ft. <sup>3</sup> | 45 lb./ft. <sup>3</sup> | 50 lb./ft. <sup>3</sup> |
| 1 3                    | 3/4 2-1/2   | 1.875 | 0.781  | 0.977   | 0.234  | 0.088   | 0.326  | 0.391   | 0.456                   | 0.521                   | 0.586                   | 0.651                   |                         |
| 1 4                    | 3/4 3-1/2   | 2.625 | 1.531  | 2.680   | 0.328  | 0.123   | 0.456  | 0.547   | 0.638                   | 0.729                   | 0.820                   | 0.911                   |                         |
| 1 6                    | 3/4 5-1/2   | 4.125 | 3.781  | 10.40   | 0.516  | 0.193   | 0.716  | 0.859   | 1.003                   | 1.146                   | 1.289                   | 1.432                   |                         |
| 1 8                    | 3/4 7-1/4   | 5.438 | 6.570  | 23.82   | 0.680  | 0.255   | 0.944  | 1.133   | 1.322                   | 1.510                   | 1.699                   | 1.888                   |                         |
| 1 10                   | 3/4 9-1/4   | 6.938 | 10.70  | 49.47   | 0.867  | 0.325   | 1.204  | 1.445   | 1.686                   | 1.927                   | 2.168                   | 2.409                   |                         |
| 1 12                   | 3/4 11-1/4  | 8.438 | 15.82  | 88.99   | 1.055  | 0.396   | 1.465  | 1.758   | 2.051                   | 2.344                   | 2.637                   | 2.930                   |                         |
| 2 3                    | 1-1/2 2-1/2   | 3.750 | 1.563  | 1.953   | 0.938  | 0.703   | 0.651  | 0.781   | 0.911                   | 1.042                   | 1.172                   | 1.302                   |                         |
| 2 4                    | 1-1/2 3-1/2   | 5.250 | 3.063  | 5.359   | 1.313  | 0.984   | 0.911  | 1.094   | 1.276                   | 1.458                   | 1.641                   | 1.823                   |                         |
| 2 5                    | 1-1/2 4-1/2   | 6.750 | 5.063  | 11.39   | 1.688  | 1.266   | 1.172  | 1.406   | 1.641                   | 1.875                   | 2.109                   | 2.344                   |                         |
| 2 6                    | 1-1/2 5-1/2   | 8.250 | 7.563  | 20.80   | 2.063  | 1.547   | 1.432  | 1.719   | 2.005                   | 2.292                   | 2.578                   | 2.865                   |                         |
| 2 8                    | 1-1/2 7-1/4   | 10.88 | 13.14  | 47.63   | 2.719  | 2.039   | 1.888  | 2.266   | 2.643                   | 3.021                   | 3.398                   | 3.776                   |                         |
| 2 10                   | 1-1/2 9-1/4   | 13.88 | 21.39  | 98.93   | 3.469  | 2.602   | 2.409  | 2.891   | 3.372                   | 3.854                   | 4.336                   | 4.818                   |                         |
| 2 12                   | 1-1/2 11-1/4  | 16.88 | 31.64  | 178.0   | 4.219  | 3.164   | 2.930  | 3.516   | 4.102                   | 4.688                   | 5.273                   | 5.859                   |                         |
| 2 14                   | 1-1/2 13-1/4  | 19.88 | 43.89  | 290.8   | 4.969  | 3.727   | 3.451  | 4.141   | 4.831                   | 5.521                   | 6.211                   | 6.901                   |                         |
| 3 4                    | 2-1/2 3-1/2   | 8.750 | 5.104  | 8.932   | 3.646  | 4.557   | 1.519  | 1.823   | 2.127                   | 2.431                   | 2.734                   | 3.038                   |                         |
| 3 5                    | 2-1/2 4-1/2   | 11.25 | 8.438  | 18.98   | 4.688  | 5.859   | 1.953  | 2.344   | 2.734                   | 3.125                   | 3.516                   | 3.906                   |                         |
| 3 6                    | 2-1/2 5-1/2   | 13.75 | 12.60  | 34.66   | 5.729  | 7.161   | 2.387  | 2.865   | 3.342                   | 3.819                   | 4.297                   | 4.774                   |                         |
| 3 8                    | 2-1/2 7-1/4   | 18.13 | 21.90  | 79.39   | 7.552  | 9.440   | 3.147  | 3.776   | 4.405                   | 5.035                   | 5.664                   | 6.293                   |                         |
| 3 10                   | 2-1/2 9-1/4   | 23.13 | 35.65  | 164.9   | 9.635  | 12.04   | 4.015  | 4.818   | 5.621                   | 6.424                   | 7.227                   | 8.030                   |                         |
| 3 12                   | 2-1/2 11-1/4  | 28.13 | 52.73  | 296.6   | 11.72  | 14.65   | 4.883  | 5.859   | 6.836                   | 7.813                   | 8.789                   | 9.766                   |                         |
| 3 14                   | 2-1/2 13-1/4  | 33.13 | 73.15  | 484.6   | 13.80  | 17.25   | 5.751  | 6.901   | 8.051                   | 9.201                   | 10.35                   | 11.50                   |                         |
| 3 16                   | 2-1/2 15-1/4  | 38.13 | 96.90  | 738.9   | 15.89  | 19.86   | 6.619  | 7.943   | 9.266                   | 10.59                   | 11.91                   | 13.24                   |                         |
| 4 4                    | 3-1/2 3-1/2   | 12.25 | 7.146  | 12.51   | 7.146  | 12.51   | 2.127  | 2.552   | 2.977                   | 3.403                   | 3.828                   | 4.253                   |                         |
| 4 5                    | 3-1/2 4-1/2   | 15.75 | 11.81  | 26.58   | 9.188  | 16.08   | 2.734  | 3.281   | 3.828                   | 4.375                   | 4.922                   | 5.469                   |                         |
| 4 6                    | 3-1/2 5-1/2   | 19.25 | 17.65  | 48.53   | 11.23  | 19.65   | 3.342  | 4.010   | 4.679                   | 5.347                   | 6.016                   | 6.684                   |                         |
| 4 8                    | 3-1/2 7-1/4   | 25.38 | 30.66  | 111.1   | 14.80  | 25.90   | 4.405  | 5.286   | 6.168                   | 7.049                   | 7.930                   | 8.811                   |                         |
| 4 10                   | 3-1/2 9-1/4   | 32.38 | 49.91  | 230.8   | 18.89  | 33.05   | 5.621  | 6.745   | 7.869                   | 8.993                   | 10.12                   | 11.24                   |                         |
| 4 12                   | 3-1/2 11-1/4  | 39.38 | 73.83  | 415.3   | 22.97  | 40.20   | 6.836  | 8.203   | 9.570                   | 10.94                   | 12.30                   | 13.67                   |                         |
| 4 14                   | 3-1/2 13-1/4  | 46.38 | 102.4  | 678.5   | 27.05  | 47.34   | 8.051  | 9.661   | 11.27                   | 12.88                   | 14.49                   | 16.10                   |                         |
| 4 16                   | 3-1/2 15-1/4  | 53.38 | 135.7  | 1034  | 31.14  | 54.49   | 9.266  | 11.12   | 12.97                   | 14.83                   | 16.68                   | 18.53                   |                         |
| 5 5                    | 4-1/2 4-1/2   | 20.25 | 15.19  | 34.17   | 15.19  | 34.17   | 3.516  | 4.219   | 4.922                   | 5.625                   | 6.328                   | 7.031                   |                         |
| 6 6                    | 5-1/2 5-1/2   | 30.25 | 27.73  | 76.26   | 27.73  | 76.26   | 5.252  | 6.302   | 7.352                   | 8.403                   | 9.453                   | 10.50                   |                         |
| 6 8                    | 5-1/2 7-1/2   | 41.25 | 51.56  | 193.4   | 37.81  | 104.0   | 7.161  | 8.594   | 10.03                   | 11.46                   | 12.89                   | 14.32                   |                         |
| 6 10                   | 5-1/2 9-1/2   | 52.25 | 82.73  | 393.0   | 47.90  | 131.7   | 9.071  | 10.89   | 12.70                   | 14.51                   | 16.33                   | 18.14                   |                         |
| 6 12                   | 5-1/2 11-1/2  | 63.25 | 121.2  | 697.1   | 57.98  | 159.4   | 10.98  | 13.18   | 15.37                   | 17.57                   | 19.77                   | 21.96                   |                         |
| 6 14                   | 5-1/2 13-1/2  | 74.25 | 167.1  | 1128  | 68.06  | 187.2   | 12.89  | 15.47   | 18.05                   | 20.63                   | 23.20                   | 25.78                   |                         |
| 6 16                   | 5-1/2 15-1/2  | 85.25 | 220.2  | 1707  | 78.15  | 214.9   | 14.80  | 17.76   | 20.72                   | 23.68                   | 26.64                   | 29.60                   |                         |
| 6 18                   | 5-1/2 17-1/2  | 96.25 | 280.7  | 2456  | 88.23  | 242.6   | 16.71  | 20.05   | 23.39                   | 26.74                   | 30.08                   | 33.42                   |                         |
| 6 20                   | 5-1/2 19-1/2  | 107.3 | 348.6  | 3398  | 98.31  | 270.4   | 18.62  | 22.34   | 26.07                   | 29.79                   | 33.52                   | 37.24                   |                         |
| 6 22                   | 5-1/2 21-1/2  | 118.3 | 423.7  | 4555  | 108.4  | 298.1   | 20.53  | 24.64   | 28.74                   | 32.85                   | 36.95                   | 41.06                   |                         |
| 6 24                   | 5-1/2 23-1/2  | 129.3 | 506.2  | 5948  | 118.5  | 325.8   | 22.44  | 26.93   | 31.41                   | 35.90                   | 40.39                   | 44.88                   |                         |
| 8 8                    | 7-1/2 7-1/2   | 56.25 | 70.31  | 263.7   | 70.31  | 263.7   | 9.766  | 11.72   | 13.67                   | 15.63                   | 17.58                   | 19.53                   |                         |
| 8 10                   | 7-1/2 9-1/2   | 71.25 | 112.8  | 535.9   | 89.06  | 334.0   | 12.37  | 14.84   | 17.32                   | 19.79                   | 22.27                   | 24.74                   |                         |
| 8 12                   | 7-1/2 11-1/2  | 86.25 | 165.3  | 950.5   | 107.8  | 404.3   | 14.97  | 17.97   | 20.96                   | 23.96                   | 26.95                   | 29.95                   |                         |
| 8 14                   | 7-1/2 13-1/2  | 101.3 | 227.8  | 1538  | 126.6  | 474.6   | 17.58  | 21.09   | 24.61                   | 28.13                   | 31.64                   | 35.16                   |                         |
| 8 16                   | 7-1/2 15-1/2  | 116.3 | 300.3  | 2327  | 145.3  | 544.9   | 20.18  | 24.22   | 28.26                   | 32.29                   | 36.33                   | 40.36                   |                         |
| 8 18                   | 7-1/2 17-1/2  | 131.3 | 382.8  | 3350  | 164.1  | 615.2   | 22.79  | 27.34   | 31.90                   | 36.46                   | 41.02                   | 45.57                   |                         |
| 8 20                   | 7-1/2 19-1/2  | 146.3 | 475.3  | 4634  | 182.8  | 685.5   | 25.39  | 30.47   | 35.55                   | 40.63                   | 45.70                   | 50.78                   |                         |
| 8 22                   | 7-1/2 21-1/2  | 161.3 | 577.8  | 6211  | 201.6  | 755.9   | 27.99  | 33.59   | 39.19                   | 44.79                   | 50.39                   | 55.99                   |                         |
| 8 24                   | 7-1/2 23-1/2  | 176.3 | 690.3  | 8111  | 220.3  | 826.2   | 30.60  | 36.72   | 42.84                   | 48.96                   | 55.08                   | 61.20                   |                         |
| 10 10                  | 9-1/2 9-1/2   | 90.25 | 142.9  | 678.8   | 142.9  | 678.8   | 15.67  | 18.80   | 21.94                   | 25.07                   | 28.20                   | 31.34                   |                         |
| 10 12                  | 9-1/2 11-1/2  | 109.3 | 209.4  | 1204  | 173.0  | 821.7   | 18.97  | 22.76   | 26.55                   | 30.35                   | 34.14                   | 37.93                   |                         |
| 10 14                  | 9-1/2 13-1/2  | 128.3 | 288.6  | 1948  | 203.1  | 964.5   | 22.27  | 26.72   | 31.17                   | 35.63                   | 40.08                   | 44.53                   |                         |
| 10 16                  | 9-1/2 15-1/2  | 147.3 | 380.4  | 2948  | 233.1  | 1107  | 25.56  | 30.68   | 35.79                   | 40.90                   | 46.02                   | 51.13                   |                         |
| 10 18                  | 9-1/2 17-1/2  | 166.3 | 484.9  | 4243  | 263.2  | 1250  | 28.86  | 34.64   | 40.41                   | 46.18                   | 51.95                   | 57.73                   |                         |
| 10 20                  | 9-1/2 19-1/2  | 185.3 | 602.1  | 5870  | 293.3  | 1393  | 32.16  | 38.59   | 45.03                   | 51.46                   | 57.89                   | 64.32                   |                         |
| 10 22                  | 9-1/2 21-1/2  | 204.3 | 731.9  | 7868  | 323.4  | 1536  | 35.46  | 42.55   | 49.64                   | 56.74                   | 63.83                   | 70.92                   |                         |
| 10 24                  | 9-1/2 23-1/2  | 223.3 | 874.4  | 10270   | 353.5  | 1679  | 38.76  | 46.51   | 54.26                   | 62.01                   | 69.77                   | 77.52                   |                         |

**Table 1B Section Properties of Standard Dressed (S4S) Sawn Lumber (Cont.)**

| Nominal<br>Size<br>b d | Standard<br>Dressed<br>Size (S4S)<br>b d<br>inches inches |       | Area<br>of<br>Section<br>A<br>in. <sup>2</sup> | X-X Axis   |   | Y-Y Axis   |   | Approximate weight in pounds per linear foot (lb./ft.)<br>of piece when density of wood equals: |                         |       |       |       |  |
|------------------------|---|-------|--|--|---|--|---|---|-------------------------|-------|-------|-------|--|
|                        |   |       |  | Section<br>Modulus<br>S <sub>x</sub><br>in. <sup>3</sup> | Moment<br>of<br>Inertia<br>I <sub>x</sub><br>in. <sup>4</sup> | Section<br>Modulus<br>S <sub>y</sub><br>in. <sup>3</sup> | Moment<br>of<br>Inertia<br>I <sub>y</sub><br>in. <sup>4</sup> |   |                         |       |       |       |  |
|                        |   |       |  | 25 lb./ft. <sup>3</sup>                                  | 30 lb./ft. <sup>3</sup>                                       | 35 lb./ft. <sup>3</sup>                                  | 40 lb./ft. <sup>3</sup>                                       | 45 lb./ft. <sup>3</sup>   | 50 lb./ft. <sup>3</sup> |       |       |       |  |
| 12 12                  | 11-1/2 11-1/2   | 132.3 | 253.5  | 1458   | 253.5   | 1458   | 22.96   | 27.55   | 32.14                   | 36.74 | 41.33 | 45.92 |  |
| 12 14                  | 11-1/2 13-1/2   | 155.3 | 349.3  | 2358   | 297.6   | 1711   | 26.95   | 32.34   | 37.73                   | 43.13 | 48.52 | 53.91 |  |
| 12 16                  | 11-1/2 15-1/2   | 178.3 | 460.5  | 3569   | 341.6   | 1964   | 30.95   | 37.14   | 43.32                   | 49.51 | 55.70 | 61.89 |  |
| 12 18                  | 11-1/2 17-1/2   | 201.3 | 587.0  | 5136   | 385.7   | 2218   | 34.94   | 41.93   | 48.91                   | 55.90 | 62.89 | 69.88 |  |
| 12 20                  | 11-1/2 19-1/2   | 224.3 | 728.8  | 7106   | 429.8   | 2471   | 38.93   | 46.72   | 54.51                   | 62.29 | 70.08 | 77.86 |  |
| 12 22                  | 11-1/2 21-1/2   | 247.3 | 886.0  | 9524   | 473.9   | 2725   | 42.93   | 51.51   | 60.10                   | 68.68 | 77.27 | 85.85 |  |
| 12 24                  | 11-1/2 23-1/2   | 270.3 | 1058   | 12440  | 518.0   | 2978   | 46.92   | 56.30   | 65.69                   | 75.07 | 84.45 | 93.84 |  |
| 14 14                  | 13-1/2 13-1/2   | 182.3 | 410.1  | 2768   | 410.1   | 2768   | 31.64   | 37.97   | 44.30                   | 50.63 | 56.95 | 63.28 |  |
| 14 16                  | 13-1/2 15-1/2   | 209.3 | 540.6  | 4189   | 470.8   | 3178   | 36.33   | 43.59   | 50.86                   | 58.13 | 65.39 | 72.66 |  |
| 14 18                  | 13-1/2 17-1/2   | 236.3 | 689.1  | 6029   | 531.6   | 3588   | 41.02   | 49.22   | 57.42                   | 65.63 | 73.83 | 82.03 |  |
| 14 20                  | 13-1/2 19-1/2   | 263.3 | 855.6  | 8342   | 592.3   | 3998   | 45.70   | 54.84   | 63.98                   | 73.13 | 82.27 | 91.41 |  |
| 14 22                  | 13-1/2 21-1/2   | 290.3 | 1040   | 11180  | 653.1   | 4408   | 50.39   | 60.47   | 70.55                   | 80.63 | 90.70 | 100.8 |  |
| 14 24                  | 13-1/2 23-1/2   | 317.3 | 1243   | 14600  | 713.8   | 4818   | 55.08   | 66.09   | 77.11                   | 88.13 | 99.14 | 110.2 |  |
| 16 16                  | 15-1/2 15-1/2   | 240.3 | 620.6  | 4810   | 620.6   | 4810   | 41.71   | 50.05   | 58.39                   | 66.74 | 75.08 | 83.42 |  |
| 16 18                  | 15-1/2 17-1/2   | 271.3 | 791.1  | 6923   | 700.7   | 5431   | 47.09   | 56.51   | 65.93                   | 75.35 | 84.77 | 94.18 |  |
| 16 20                  | 15-1/2 19-1/2   | 302.3 | 982.3  | 9578   | 780.8   | 6051   | 52.47   | 62.97   | 73.46                   | 83.96 | 94.45 | 104.9 |  |
| 16 22                  | 15-1/2 21-1/2   | 333.3 | 1194   | 12840  | 860.9   | 6672   | 57.86   | 69.43   | 81.00                   | 92.57 | 104.1 | 115.7 |  |
| 16 24                  | 15-1/2 23-1/2   | 364.3 | 1427   | 16760  | 941.0   | 7293   | 63.24   | 75.89   | 88.53                   | 101.2 | 113.8 | 126.5 |  |
| 18 18                  | 17-1/2 17-1/2   | 306.3 | 893.2  | 7816   | 893.2   | 7816   | 53.17   | 63.80   | 74.44                   | 85.07 | 95.70 | 106.3 |  |
| 18 20                  | 17-1/2 19-1/2   | 341.3 | 1109   | 10810  | 995.3   | 8709   | 59.24   | 71.09   | 82.94                   | 94.79 | 106.6 | 118.5 |  |
| 18 22                  | 17-1/2 21-1/2   | 376.3 | 1348   | 14490  | 1097  | 9602   | 65.32   | 78.39   | 91.45                   | 104.5 | 117.6 | 130.6 |  |
| 18 24                  | 17-1/2 23-1/2   | 411.3 | 1611   | 18930  | 1199  | 10500  | 71.40   | 85.68   | 99.96                   | 114.2 | 128.5 | 142.8 |  |
| 20 20                  | 19-1/2 19-1/2   | 380.3 | 1236   | 12050  | 1236  | 12050  | 66.02   | 79.22   | 92.42                   | 105.6 | 118.8 | 132.0 |  |
| 20 22                  | 19-1/2 21-1/2   | 419.3 | 1502   | 16150  | 1363  | 13280  | 72.79   | 87.34   | 101.9                   | 116.5 | 131.0 | 145.6 |  |
| 20 24                  | 19-1/2 23-1/2   | 458.3 | 1795   | 21090  | 1489  | 14520  | 79.56   | 95.47   | 111.4                   | 127.3 | 143.2 | 159.1 |  |
| 22 22                  | 21-1/2 21-1/2   | 462.3 | 1656   | 17810  | 1656  | 17810  | 80.25   | 96.30   | 112.4                   | 128.4 | 144.5 | 160.5 |  |
| 22 24                  | 21-1/2 23-1/2   | 505.3 | 1979   | 23250  | 1810  | 19460  | 87.72   | 105.3   | 122.8                   | 140.3 | 157.9 | 175.4 |  |
| 24 24                  | 23-1/2 23-1/2   | 552.3 | 2163   | 25420  | 2163  | 25420  | 95.88   | 115.1   | 134.2                   | 153.4 | 172.6 | 191.8 |  |

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SECTION PROPERTIES