# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1/8 | X | 2 | 3/4 | 5.844 | 2.678 | 3.683 | 2.070 | 2.199 | 1.5 |
| 2 | 1/8 | X | 4 | 1/8 | 8.766 | 6.026 | 12.43 | 3.104 | 3.299 | 2.2 |
| 2 | 1/8 | X | 5 | 1/2 | 11.69 | 10.71 | 29.46 | 4.139 | 4.398 | 2.9 |
| 2 | 1/8 | X | 6 | 7/8 | 14.61 | 16.74 | 57.54 | 5.174 | 5.498 | 3.7 |
| 2 | 1/8 | X | 8 | 1/4 | 17.53 | 24.11 | 99.44 | 6.209 | 6.597 | 4.4 |
| 2 | 1/8 | X | 9 | 5/8 | 20.45 | 32.81 | 157.9 | 7.244 | 7.697 | 5.1 |
| 2 | 1/8 | X | 11 | | 23.38 | 42.85 | 235.7 | 8.279 | 8.796 | 5.8 |
| 2 | 1/8 | X | 12 | 3/8 | 26.30 | 54.24 | 335.6 | 9.313 | 9.896 | 6.6 |
| 2 | 1/8 | X | 13 | 3/4 | 29.22 | 66.96 | 460.3 | 10.35 | 11.00 | 7.3 |
| 2 | 1/8 | X | 15 | 1/8 | 32.14 | 81.02 | 612.7 | 11.38 | 12.09 | 8.0 |
| 2 | 1/8 | X | 16 | 1/2 | 35.06 | 96.42 | 795.5 | 12.42 | 13.19 | 8.8 |
| 2 | 1/8 | X | 17 | 7/8 | 37.98 | 113.2 | 1011 | 13.45 | 14.29 | 9.5 |
| 2 | 1/2 | X | 2 | 3/4 | 6.875 | 3.151 | 4.333 | 2.865 | 3.581 | 1.7 |
| 2 | 1/2 | X | 4 | 1/8 | 10.31 | 7.090 | 14.62 | 4.297 | 5.371 | 2.6 |
| 2 | 1/2 | X | 5 | 1/2 | 13.75 | 12.60 | 34.66 | 5.729 | 7.161 | 3.4 |
| 2 | 1/2 | X | 6 | 7/8 | 17.19 | 19.69 | 67.70 | 7.161 | 8.952 | 4.3 |
| 2 | 1/2 | X | 8 | 1/4 | 20.63 | 28.36 | 117.0 | 8.594 | 10.74 | 5.2 |
| 2 | 1/2 | X | 9 | 5/8 | 24.06 | 38.60 | 185.8 | 10.03 | 12.53 | 6.0 |
| 2 | 1/2 | X | 11 | | 27.50 | 50.42 | 277.3 | 11.46 | 14.32 | 6.9 |
| 2 | 1/2 | X | 12 | 3/8 | 30.94 | 63.81 | 394.8 | 12.89 | 16.11 | 7.7 |
| 2 | 1/2 | X | 13 | 3/4 | 34.38 | 78.78 | 541.6 | 14.32 | 17.90 | 8.6 |
| 2 | 1/2 | X | 15 | 1/8 | 37.81 | 95.32 | 720.9 | 15.76 | 19.69 | 9.5 |
| 2 | 1/2 | X | 16 | 1/2 | 41.25 | 113.4 | 935.9 | 17.19 | 21.48 | 10.3 |
| 2 | 1/2 | X | 17 | 7/8 | 44.69 | 133.1 | 1190 | 18.62 | 23.27 | 11.2 |
| 3 | | X | 2 | 3/4 | 8.250 | 3.781 | 5.199 | 4.125 | 6.188 | 2.1 |
| 3 | | X | 4 | 1/8 | 12.38 | 8.508 | 17.55 | 6.188 | 9.281 | 3.1 |
| 3 | | X | 5 | 1/2 | 16.50 | 15.13 | 41.59 | 8.250 | 12.38 | 4.1 |
| 3 | | X | 6 | 7/8 | 20.63 | 23.63 | 81.24 | 10.31 | 15.47 | 5.2 |
| 3 | | X | 8 | 1/4 | 24.75 | 34.03 | 140.4 | 12.38 | 18.56 | 6.2 |
| 3 | | X | 9 | 5/8 | 28.88 | 46.32 | 222.9 | 14.44 | 21.66 | 7.2 |
| 3 | | X | 11 | | 33.00 | 60.50 | 332.8 | 16.50 | 24.75 | 8.3 |
| 3 | | X | 12 | 3/8 | 37.13 | 76.57 | 473.8 | 18.56 | 27.84 | 9.3 |
| 3 | | X | 13 | 3/4 | 41.25 | 94.53 | 649.9 | 20.63 | 30.94 | 10.3 |
| 3 | | X | 15 | 1/8 | 45.38 | 114.4 | 865.0 | 22.69 | 34.03 | 11.3 |
| 3 | | X | 16 | 1/2 | 49.50 | 136.1 | 1123 | 24.75 | 37.13 | 12.4 |
| 3 | | X | 17 | 7/8 | 53.63 | 159.8 | 1428 | 26.81 | 40.22 | 13.4 |
| 3 | | X | 19 | 1/4 | 57.75 | 185.3 | 1783 | 28.88 | 43.31 | 14.4 |
| 3 | | X | 20 | 5/8 | 61.88 | 212.7 | 2193 | 30.94 | 46.41 | 15.5 |
| 3 | | X | 22 | | 66.00 | 242.0 | 2662 | 33.00 | 49.50 | 16.5 |
| 3 | | X | 23 | 3/8 | 70.13 | 273.2 | 3193 | 35.06 | 52.59 | 17.5 |
| 3 | | X | 24 | 3/4 | 74.25 | 306.3 | 3790 | 37.13 | 55.69 | 18.6 |
| 3 | | X | 26 | 1/8 | 78.38 | 341.3 | 4458 | 39.19 | 58.78 | 19.6 |
| 3 | | X | 27 | 1/2 | 82.50 | 378.1 | 5199 | 41.25 | 61.88 | 20.6 |
| 3 | 1/8 | X | 2 | 3/4 | 8.594 | 3.939 | 5.416 | 4.476 | 6.994 | 2.1 |
| 3 | 1/8 | X | 4 | 1/8 | 12.89 | 8.862 | 18.28 | 6.714 | 10.49 | 3.2 |
| 3 | 1/8 | X | 5 | 1/2 | 17.19 | 15.76 | 43.33 | 8.952 | 13.99 | 4.3 |
| 3 | 1/8 | X | 6 | 7/8 | 21.48 | 24.62 | 84.62 | 11.19 | 17.48 | 5.4 |
| 3 | 1/8 | X | 8 | 1/4 | 25.78 | 35.45 | 146.2 | 13.43 | 20.98 | 6.4 |
| 3 | 1/8 | X | 9 | 5/8 | 30.08 | 48.25 | 232.2 | 15.67 | 24.48 | 7.5 |
| 3 | 1/8 | X | 11 | | 34.38 | 63.02 | 346.6 | 17.90 | 27.97 | 8.6 |
| 3 | 1/8 | X | 12 | 3/8 | 38.67 | 79.76 | 493.5 | 20.14 | 31.47 | 9.7 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | Beam Size d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1/8 | X | 13 | 3/4 | 42.97 | 98.47 | 677.0 | 22.38 | 34.97 | 10.7 |
| 3 | 1/8 | X | 15 | 1/8 | 47.27 | 119.1 | 901.1 | 24.62 | 38.46 | 11.8 |
| 3 | 1/8 | X | 16 | 1/2 | 51.56 | 141.8 | 1170 | 26.86 | 41.96 | 12.9 |
| 3 | 1/8 | X | 17 | 7/8 | 55.86 | 166.4 | 1487 | 29.09 | 45.46 | 14.0 |
| 3 | 1/8 | X | 19 | 1/4 | 60.16 | 193.0 | 1858 | 31.33 | 48.96 | 15.0 |
| 3 | 1/8 | X | 20 | 5/8 | 64.45 | 221.6 | 2285 | 33.57 | 52.45 | 16.1 |
| 3 | 1/8 | X | 22 | | 68.75 | 252.1 | 2773 | 35.81 | 55.95 | 17.2 |
| 3 | 1/8 | X | 23 | 3/8 | 73.05 | 284.6 | 3326 | 38.05 | 59.45 | 18.3 |
| 3 | 1/8 | X | 24 | 3/4 | 77.34 | 319.0 | 3948 | 40.28 | 62.94 | 19.3 |
| 3 | 1/8 | X | 26 | 1/8 | 81.64 | 355.5 | 4643 | 42.52 | 66.44 | 20.4 |
| 3 | 1/8 | X | 27 | 1/2 | 85.94 | 393.9 | 5416 | 44.76 | 69.94 | 21.5 |
| 3 | 1/2 | X | 2 | 3/4 | 9.625 | 4.411 | 6.066 | 5.615 | 9.826 | 2.4 |
| 3 | 1/2 | X | 4 | 1/8 | 14.44 | 9.926 | 20.47 | 8.422 | 14.74 | 3.6 |
| 3 | 1/2 | X | 5 | 1/2 | 19.25 | 17.65 | 48.53 | 11.23 | 19.65 | 4.8 |
| 3 | 1/2 | X | 6 | 7/8 | 24.06 | 27.57 | 94.78 | 14.04 | 24.56 | 6.0 |
| 3 | 1/2 | X | 8 | 1/4 | 28.88 | 39.70 | 163.8 | 16.84 | 29.48 | 7.2 |
| 3 | 1/2 | X | 9 | 5/8 | 33.69 | 54.04 | 260.1 | 19.65 | 34.39 | 8.4 |
| 3 | 1/2 | X | 11 | | 38.50 | 70.58 | 388.2 | 22.46 | 39.30 | 9.6 |
| 3 | 1/2 | X | 12 | 3/8 | 43.31 | 89.33 | 552.7 | 25.27 | 44.21 | 10.8 |
| 3 | 1/2 | X | 13 | 3/4 | 48.13 | 110.3 | 758.2 | 28.07 | 49.13 | 12.0 |
| 3 | 1/2 | X | 15 | 1/8 | 52.94 | 133.4 | 1009 | 30.88 | 54.04 | 13.2 |
| 3 | 1/2 | X | 16 | 1/2 | 57.75 | 158.8 | 1310 | 33.69 | 58.95 | 14.4 |
| 3 | 1/2 | X | 17 | 7/8 | 62.56 | 186.4 | 1666 | 36.49 | 63.87 | 15.6 |
| 3 | 1/2 | X | 19 | 1/4 | 67.38 | 216.2 | 2081 | 39.30 | 68.78 | 16.8 |
| 3 | 1/2 | X | 20 | 5/8 | 72.19 | 248.1 | 2559 | 42.11 | 73.69 | 18.0 |
| 3 | 1/2 | X | 22 | | 77.00 | 282.3 | 3106 | 44.92 | 78.60 | 19.3 |
| 3 | 1/2 | X | 23 | 3/8 | 81.81 | 318.7 | 3725 | 47.72 | 83.52 | 20.5 |
| 3 | 1/2 | X | 24 | 3/4 | 86.63 | 357.3 | 4422 | 50.53 | 88.43 | 21.7 |
| 3 | 1/2 | X | 26 | 1/8 | 91.44 | 398.1 | 5201 | 53.34 | 93.34 | 22.9 |
| 3 | 1/2 | X | 27 | 1/2 | 96.25 | 441.1 | 6066 | 56.15 | 98.26 | 24.1 |
| 5 | | X | 2 | 3/4 | 13.75 | 6.302 | 8.665 | 11.46 | 28.65 | 3.4 |
| 5 | | X | 4 | 1/8 | 20.63 | 14.18 | 29.25 | 17.19 | 42.97 | 5.2 |
| 5 | | X | 5 | 1/2 | 27.50 | 25.21 | 69.32 | 22.92 | 57.29 | 6.9 |
| 5 | | X | 6 | 7/8 | 34.38 | 39.39 | 135.4 | 28.65 | 71.61 | 8.6 |
| 5 | | X | 8 | 1/4 | 41.25 | 56.72 | 234.0 | 34.38 | 85.94 | 10.3 |
| 5 | | X | 9 | 5/8 | 48.13 | 77.20 | 371.5 | 40.10 | 100.3 | 12.0 |
| 5 | | X | 11 | | 55.00 | 100.8 | 554.6 | 45.83 | 114.6 | 13.8 |
| 5 | | X | 12 | 3/8 | 61.88 | 127.6 | 789.6 | 51.56 | 128.9 | 15.5 |
| 5 | | X | 13 | 3/4 | 68.75 | 157.6 | 1083 | 57.29 | 143.2 | 17.2 |
| 5 | | X | 15 | 1/8 | 75.63 | 190.6 | 1442 | 63.02 | 157.6 | 18.9 |
| 5 | | X | 16 | 1/2 | 82.50 | 226.9 | 1872 | 68.75 | 171.9 | 20.6 |
| 5 | | X | 17 | 7/8 | 89.38 | 266.3 | 2380 | 74.48 | 186.2 | 22.3 |
| 5 | | X | 19 | 1/4 | 96.25 | 308.8 | 2972 | 80.21 | 200.5 | 24.1 |
| 5 | | X | 20 | 5/8 | 103.1 | 354.5 | 3656 | 85.94 | 214.8 | 25.8 |
| 5 | | X | 22 | | 110.0 | 403.3 | 4437 | 91.67 | 229.2 | 27.5 |
| 5 | | X | 23 | 3/8 | 116.9 | 455.3 | 5322 | 97.40 | 243.5 | 29.2 |
| 5 | | X | 24 | 3/4 | 123.8 | 510.5 | 6317 | 103.1 | 257.8 | 31.0 |
| 5 | | X | 26 | 1/8 | 130.6 | 568.8 | 7429 | 108.9 | 272.1 | 32.7 |
| 5 | | X | 27 | 1/2 | 137.5 | 630.2 | 8665 | 114.6 | 286.5 | 34.4 |
| 5 | | X | 28 | 7/8 | 144.4 | 694.8 | 10030 | 120.3 | 300.8 | 36.1 |
| 5 | | X | 30 | 1/4 | 151.3 | 762.6 | 11530 | 126.0 | 315.1 | 37.8 |
| 5 | | X | 31 | 5/8 | 158.1 | 833.5 | 13180 | 131.8 | 329.4 | 39.5 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | Beam Size d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | | X | 33 | | 165.0 | 907.5 | 14970 | 137.5 | 343.8 | 41.3 |
| 5 | | X | 34 | 3/8 | 171.9 | 984.7 | 16920 | 143.2 | 358.1 | 43.0 |
| 5 | | X | 35 | 3/4 | 178.8 | 1065 | 19040 | 149.0 | 372.4 | 44.7 |
| 5 | | X | 37 | 1/8 | 185.6 | 1149 | 21320 | 154.7 | 386.7 | 46.4 |
| 5 | | X | 38 | 1/2 | 192.5 | 1235 | 23780 | 160.4 | 401 | 48.1 |
| 5 | | X | 39 | 7/8 | 199.4 | 1325 | 26420 | 166.1 | 415.4 | 49.9 |
| 5 | | X | 41 | 1/4 | 206.3 | 1418 | 29250 | 171.9 | 429.7 | 51.6 |
| 5 | | X | 42 | 5/8 | 213.1 | 1514 | 32270 | 177.6 | 444 | 53.3 |
| 5 | | X | 44 | | 220.0 | 1613 | 35490 | 183.3 | 458.3 | 55.0 |
| 5 | 1/8 | X | 2 | 3/4 | 14.09 | 6.460 | 8.882 | 12.04 | 30.85 | 3.5 |
| 5 | 1/8 | X | 4 | 1/8 | 21.14 | 14.53 | 29.98 | 18.06 | 46.27 | 5.3 |
| 5 | 1/8 | X | 5 | 1/2 | 28.19 | 25.84 | 71.06 | 24.08 | 61.70 | 7.0 |
| 5 | 1/8 | X | 6 | 7/8 | 35.23 | 40.37 | 138.8 | 30.10 | 77.12 | 8.8 |
| 5 | 1/8 | X | 8 | 1/4 | 42.28 | 58.14 | 239.8 | 36.12 | 92.55 | 10.6 |
| 5 | 1/8 | X | 9 | 5/8 | 49.33 | 79.13 | 380.8 | 42.13 | 108.0 | 12.3 |
| 5 | 1/8 | X | 11 | | 56.38 | 103.4 | 568.4 | 48.15 | 123.4 | 14.1 |
| 5 | 1/8 | X | 12 | 3/8 | 63.42 | 130.8 | 809.4 | 54.17 | 138.8 | 15.9 |
| 5 | 1/8 | X | 13 | 3/4 | 70.47 | 161.5 | 1110 | 60.19 | 154.2 | 17.6 |
| 5 | 1/8 | X | 15 | 1/8 | 77.52 | 195.4 | 1478 | 66.21 | 169.7 | 19.4 |
| 5 | 1/8 | X | 16 | 1/2 | 84.56 | 232.5 | 1919 | 72.23 | 185.1 | 21.1 |
| 5 | 1/8 | X | 17 | 7/8 | 91.61 | 272.9 | 2439 | 78.25 | 200.5 | 22.9 |
| 5 | 1/8 | X | 19 | 1/4 | 98.66 | 316.5 | 3047 | 84.27 | 215.9 | 24.7 |
| 5 | 1/8 | X | 20 | 5/8 | 105.7 | 363.4 | 3747 | 90.29 | 231.4 | 26.4 |
| 5 | 1/8 | X | 22 | | 112.8 | 413.4 | 4548 | 96.31 | 246.8 | 28.2 |
| 5 | 1/8 | X | 23 | 3/8 | 119.8 | 466.7 | 5455 | 102.3 | 262.2 | 30.0 |
| 5 | 1/8 | X | 24 | 3/4 | 126.8 | 523.2 | 6475 | 108.3 | 277.6 | 31.7 |
| 5 | 1/8 | X | 26 | 1/8 | 133.9 | 583.0 | 7615 | 114.4 | 293.1 | 33.5 |
| 5 | 1/8 | X | 27 | 1/2 | 140.9 | 646.0 | 8882 | 120.4 | 308.5 | 35.2 |
| 5 | 1/8 | X | 28 | 7/8 | 148.0 | 712.2 | 10280 | 126.4 | 323.9 | 37.0 |
| 5 | 1/8 | X | 30 | 1/4 | 155.0 | 781.6 | 11820 | 132.4 | 339.3 | 38.8 |
| 5 | 1/8 | X | 31 | 5/8 | 162.1 | 854.3 | 13510 | 138.4 | 354.8 | 40.5 |
| 5 | 1/8 | X | 33 | | 169.1 | 930.2 | 15350 | 144.5 | 370.2 | 42.3 |
| 5 | 1/8 | X | 34 | 3/8 | 176.2 | 1009 | 17350 | 150.5 | 385.6 | 44.1 |
| 5 | 1/8 | X | 35 | 3/4 | 183.2 | 1092 | 19510 | 156.5 | 401.0 | 45.8 |
| 5 | 1/8 | X | 37 | 1/8 | 190.3 | 1177 | 21850 | 162.5 | 416.5 | 47.6 |
| 5 | 1/8 | X | 38 | 1/2 | 197.3 | 1266 | 24370 | 168.5 | 431.9 | 49.3 |
| 5 | 1/8 | X | 39 | 7/8 | 204.4 | 1358 | 27080 | 174.6 | 447.3 | 51.1 |
| 5 | 1/8 | X | 41 | 1/4 | 211.4 | 1453 | 29980 | 180.6 | 462.7 | 52.9 |
| 5 | 1/8 | X | 42 | 5/8 | 218.5 | 1552 | 33080 | 186.6 | 478.2 | 54.6 |
| 5 | 1/8 | X | 44 | | 225.5 | 1654 | 36380 | 192.6 | 493.6 | 56.4 |
| 5 | 1/2 | X | 2 | 3/4 | 15.13 | 6.932 | 9.532 | 13.86 | 38.13 | 3.8 |
| 5 | 1/2 | X | 4 | 1/8 | 22.69 | 15.60 | 32.17 | 20.80 | 57.19 | 5.7 |
| 5 | 1/2 | X | 5 | 1/2 | 30.25 | 27.73 | 76.26 | 27.73 | 76.26 | 7.6 |
| 5 | 1/2 | X | 6 | 7/8 | 37.81 | 43.33 | 148.9 | 34.66 | 95.32 | 9.5 |
| 5 | 1/2 | X | 8 | 1/4 | 45.38 | 62.39 | 257.4 | 41.59 | 114.4 | 11.3 |
| 5 | 1/2 | X | 9 | 5/8 | 52.94 | 84.92 | 408.7 | 48.53 | 133.4 | 13.2 |
| 5 | 1/2 | X | 11 | | 60.50 | 110.9 | 610.0 | 55.46 | 152.5 | 15.1 |
| 5 | 1/2 | X | 12 | 3/8 | 68.06 | 140.4 | 868.6 | 62.39 | 171.6 | 17.0 |
| 5 | 1/2 | X | 13 | 3/4 | 75.63 | 173.3 | 1191 | 69.32 | 190.6 | 18.9 |
| 5 | 1/2 | X | 15 | 1/8 | 83.19 | 209.7 | 1586 | 76.26 | 209.7 | 20.8 |
| 5 | 1/2 | X | 16 | 1/2 | 90.75 | 249.6 | 2059 | 83.19 | 228.8 | 22.7 |
| 5 | 1/2 | X | 17 | 7/8 | 98.31 | 292.9 | 2618 | 90.12 | 247.8 | 24.6 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | Beam Size d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 1/2 | X | 19 | 1/4 | 105.9 | 339.7 | 3269 | 97.05 | 266.9 | 26.5 |
| 5 | 1/2 | X | 20 | 5/8 | 113.4 | 389.9 | 4021 | 104.0 | 286.0 | 28.4 |
| 5 | 1/2 | X | 22 | | 121.0 | 443.7 | 4880 | 110.9 | 305.0 | 30.3 |
| 5 | 1/2 | X | 23 | 3/8 | 128.6 | 500.9 | 5854 | 117.8 | 324.1 | 32.2 |
| 5 | 1/2 | X | 24 | 3/4 | 136.1 | 561.5 | 6949 | 124.8 | 343.1 | 34.0 |
| 5 | 1/2 | X | 26 | 1/8 | 143.7 | 625.6 | 8172 | 131.7 | 362.2 | 35.9 |
| 5 | 1/2 | X | 27 | 1/2 | 151.3 | 693.2 | 9532 | 138.6 | 381.3 | 37.8 |
| 5 | 1/2 | X | 28 | 7/8 | 158.8 | 764.3 | 11030 | 145.6 | 400.3 | 39.7 |
| 5 | 1/2 | X | 30 | 1/4 | 166.4 | 838.8 | 12690 | 152.5 | 419.4 | 41.6 |
| 5 | 1/2 | X | 31 | 5/8 | 173.9 | 916.8 | 14500 | 159.4 | 438.5 | 43.5 |
| 5 | 1/2 | X | 33 | | 181.5 | 998.3 | 16470 | 166.4 | 457.5 | 45.4 |
| 5 | 1/2 | X | 34 | 3/8 | 189.1 | 1083 | 18620 | 173.3 | 476.6 | 47.3 |
| 5 | 1/2 | X | 35 | 3/4 | 196.6 | 1172 | 20940 | 180.2 | 495.7 | 49.2 |
| 5 | 1/2 | X | 37 | 1/8 | 204.2 | 1263 | 23450 | 187.2 | 514.7 | 51.1 |
| 5 | 1/2 | X | 38 | 1/2 | 211.8 | 1359 | 26160 | 194.1 | 533.8 | 53.0 |
| 5 | 1/2 | X | 39 | 7/8 | 219.3 | 1458 | 29060 | 201.0 | 552.9 | 54.8 |
| 5 | 1/2 | X | 41 | 1/4 | 226.9 | 1560 | 32170 | 208.0 | 571.9 | 56.7 |
| 5 | 1/2 | X | 42 | 5/8 | 234.4 | 1665 | 35500 | 214.9 | 591.0 | 58.6 |
| 5 | 1/2 | X | 44 | | 242.0 | 1775 | 39040 | 221.8 | 610.0 | 60.5 |
| 6 | 3/4 | X | 2 | 3/4 | 18.56 | 8.508 | 11.70 | 20.88 | 70.48 | 4.6 |
| 6 | 3/4 | X | 4 | 1/8 | 27.84 | 19.14 | 39.48 | 31.32 | 105.7 | 7.0 |
| 6 | 3/4 | X | 5 | 1/2 | 37.13 | 34.03 | 93.59 | 41.77 | 141.0 | 9.3 |
| 6 | 3/4 | X | 6 | 7/8 | 46.41 | 53.17 | 182.8 | 52.21 | 176.2 | 11.6 |
| 6 | 3/4 | X | 8 | 1/4 | 55.69 | 76.57 | 315.9 | 62.65 | 211.4 | 13.9 |
| 6 | 3/4 | X | 9 | 5/8 | 64.97 | 104.2 | 501.6 | 73.09 | 246.7 | 16.2 |
| 6 | 3/4 | X | 11 | | 74.25 | 136.1 | 748.7 | 83.53 | 281.9 | 18.6 |
| 6 | 3/4 | X | 12 | 3/8 | 83.53 | 172.3 | 1066 | 93.97 | 317.2 | 20.9 |
| 6 | 3/4 | X | 13 | 3/4 | 92.81 | 212.7 | 1462 | 104.4 | 352.4 | 23.2 |
| 6 | 3/4 | X | 15 | 1/8 | 102.1 | 257.4 | 1946 | 114.9 | 387.6 | 25.5 |
| 6 | 3/4 | X | 16 | 1/2 | 111.4 | 306.3 | 2527 | 125.3 | 422.9 | 27.9 |
| 6 | 3/4 | X | 17 | 7/8 | 120.7 | 359.5 | 3213 | 135.7 | 458.1 | 30.2 |
| 6 | 3/4 | X | 19 | 1/4 | 129.9 | 416.9 | 4012 | 146.2 | 493.4 | 32.5 |
| 6 | 3/4 | X | 20 | 5/8 | 139.2 | 478.6 | 4935 | 156.6 | 528.6 | 34.8 |
| 6 | 3/4 | X | 22 | | 148.5 | 544.5 | 5990 | 167.1 | 563.8 | 37.1 |
| 6 | 3/4 | X | 23 | 3/8 | 157.8 | 614.7 | 7184 | 177.5 | 599.1 | 39.5 |
| 6 | 3/4 | X | 24 | 3/4 | 167.1 | 689.1 | 8528 | 187.9 | 634.3 | 41.8 |
| 6 | 3/4 | X | 26 | 1/8 | 176.3 | 767.8 | 10030 | 198.4 | 669.6 | 44.1 |
| 6 | 3/4 | X | 27 | 1/2 | 185.6 | 850.8 | 11700 | 208.8 | 704.8 | 46.4 |
| 6 | 3/4 | X | 28 | 7/8 | 194.9 | 938.0 | 13540 | 219.3 | 740.0 | 48.7 |
| 6 | 3/4 | X | 30 | 1/4 | 204.2 | 1029 | 15570 | 229.7 | 775.3 | 51.1 |
| 6 | 3/4 | X | 31 | 5/8 | 213.5 | 1125 | 17790 | 240.2 | 810.5 | 53.4 |
| 6 | 3/4 | X | 33 | | 222.8 | 1225 | 20210 | 250.6 | 845.8 | 55.7 |
| 6 | 3/4 | X | 34 | 3/8 | 232.0 | 1329 | 22850 | 261.0 | 881.0 | 58.0 |
| 6 | 3/4 | X | 35 | 3/4 | 241.3 | 1438 | 25700 | 271.5 | 916.2 | 60.3 |
| 6 | 3/4 | X | 37 | 1/8 | 250.6 | 1551 | 28780 | 281.9 | 951.5 | 62.7 |
| 6 | 3/4 | X | 38 | 1/2 | 259.9 | 1668 | 32100 | 292.4 | 986.7 | 65.0 |
| 6 | 3/4 | X | 39 | 7/8 | 269.2 | 1789 | 35660 | 302.8 | 1022 | 67.3 |
| 6 | 3/4 | X | 41 | 1/4 | 278.4 | 1914 | 39480 | 313.2 | 1057 | 69.6 |
| 6 | 3/4 | X | 42 | 5/8 | 287.7 | 2044 | 43560 | 323.7 | 1092 | 71.9 |
| 6 | 3/4 | X | 44 | | 297.0 | 2178 | 47920 | 334.1 | 1128 | 74.3 |
| 6 | 3/4 | X | 45 | 3/8 | 306.3 | 2316 | 52550 | 344.6 | 1163 | 76.6 |
| 6 | 3/4 | X | 46 | 3/4 | 315.6 | 2459 | 57470 | 355.0 | 1198 | 78.9 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | Beam Size d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 3/4 | X | 48 | 1/8 | 324.8 | 2606 | 62700 | 365.4 | 1233 | 81.2 |
| 6 | 3/4 | X | 49 | 1/2 | 334.1 | 2757 | 68220 | 375.9 | 1269 | 83.5 |
| 6 | 3/4 | X | 50 | 7/8 | 343.4 | 2912 | 74070 | 386.3 | 1304 | 85.9 |
| 6 | 3/4 | X | 52 | 1/4 | 352.7 | 3071 | 80240 | 396.8 | 1339 | 88.2 |
| 6 | 3/4 | X | 53 | 5/8 | 362.0 | 3235 | 86740 | 407.2 | 1374 | 90.5 |
| 6 | 3/4 | X | 55 | | 371.3 | 3403 | 93590 | 417.7 | 1410 | 92.8 |
| 8 | 1/2 | X | 2 | 3/4 | 23.38 | 10.71 | 14.73 | 33.11 | 140.7 | 5.8 |
| 8 | 1/2 | X | 4 | 1/8 | 35.06 | 24.11 | 49.72 | 49.67 | 211.1 | 8.8 |
| 8 | 1/2 | X | 5 | 1/2 | 46.75 | 42.85 | 117.8 | 66.23 | 281.5 | 11.7 |
| 8 | 1/2 | X | 6 | 7/8 | 58.44 | 66.96 | 230.2 | 82.79 | 351.8 | 14.6 |
| 8 | 1/2 | X | 8 | 1/4 | 70.13 | 96.42 | 397.7 | 99.34 | 422.2 | 17.5 |
| 8 | 1/2 | X | 9 | 5/8 | 81.81 | 131.2 | 631.6 | 115.9 | 492.6 | 20.5 |
| 8 | 1/2 | X | 11 | | 93.50 | 171.4 | 942.8 | 132.5 | 562.9 | 23.4 |
| 8 | 1/2 | X | 12 | 3/8 | 105.2 | 216.9 | 1342 | 149.0 | 633.3 | 26.3 |
| 8 | 1/2 | X | 13 | 3/4 | 116.9 | 267.8 | 1841 | 165.6 | 703.7 | 29.2 |
| 8 | 1/2 | X | 15 | 1/8 | 128.6 | 324.1 | 2451 | 182.1 | 774.1 | 32.2 |
| 8 | 1/2 | X | 16 | 1/2 | 140.3 | 385.7 | 3182 | 198.7 | 844.4 | 35.1 |
| 8 | 1/2 | X | 17 | 7/8 | 151.9 | 452.6 | 4046 | 215.2 | 914.8 | 38.0 |
| 8 | 1/2 | X | 19 | 1/4 | 163.6 | 525.0 | 5053 | 231.8 | 985.2 | 40.9 |
| 8 | 1/2 | X | 20 | 5/8 | 175.3 | 602.6 | 6215 | 248.4 | 1056 | 43.8 |
| 8 | 1/2 | X | 22 | | 187.0 | 685.7 | 7542 | 264.9 | 1126 | 46.8 |
| 8 | 1/2 | X | 23 | 3/8 | 198.7 | 774.1 | 9047 | 281.5 | 1196 | 49.7 |
| 8 | 1/2 | X | 24 | 3/4 | 210.4 | 867.8 | 10740 | 298.0 | 1267 | 52.6 |
| 8 | 1/2 | X | 26 | 1/8 | 222.1 | 966.9 | 12630 | 314.6 | 1337 | 55.5 |
| 8 | 1/2 | X | 27 | 1/2 | 233.8 | 1071 | 14730 | 331.1 | 1407 | 58.5 |
| 8 | 1/2 | X | 28 | 7/8 | 245.4 | 1181 | 17050 | 347.7 | 1478 | 61.4 |
| 8 | 1/2 | X | 30 | 1/4 | 257.1 | 1296 | 19610 | 364.3 | 1548 | 64.3 |
| 8 | 1/2 | X | 31 | 5/8 | 268.8 | 1417 | 22400 | 380.8 | 1618 | 67.2 |
| 8 | 1/2 | X | 33 | | 280.5 | 1543 | 25460 | 397.4 | 1689 | 70.1 |
| 8 | 1/2 | X | 34 | 3/8 | 292.2 | 1674 | 28770 | 413.9 | 1759 | 73.1 |
| 8 | 1/2 | X | 35 | 3/4 | 303.9 | 1811 | 32360 | 430.5 | 1830 | 76.0 |
| 8 | 1/2 | X | 37 | 1/8 | 315.6 | 1953 | 36240 | 447.0 | 1900 | 78.9 |
| 8 | 1/2 | X | 38 | 1/2 | 327.3 | 2100 | 40420 | 463.6 | 1970 | 81.8 |
| 8 | 1/2 | X | 39 | 7/8 | 338.9 | 2253 | 44910 | 480.2 | 2041 | 84.7 |
| 8 | 1/2 | X | 41 | 1/4 | 350.6 | 2411 | 49720 | 496.7 | 2111 | 87.7 |
| 8 | 1/2 | X | 42 | 5/8 | 362.3 | 2574 | 54860 | 513.3 | 2181 | 90.6 |
| 8 | 1/2 | X | 44 | | 374.0 | 2743 | 60340 | 529.8 | 2252 | 93.5 |
| 8 | 1/2 | X | 45 | 3/8 | 385.7 | 2917 | 66170 | 546.4 | 2322 | 96.4 |
| 8 | 1/2 | X | 46 | 3/4 | 397.4 | 3096 | 72370 | 562.9 | 2393 | 99.4 |
| 8 | 1/2 | X | 48 | 1/8 | 409.1 | 3281 | 78950 | 579.5 | 2463 | 102.3 |
| 8 | 1/2 | X | 49 | 1/2 | 420.8 | 3471 | 85910 | 596.1 | 2533 | 105.2 |
| 8 | 1/2 | X | 50 | 7/8 | 432.4 | 3667 | 93270 | 612.6 | 2604 | 108.1 |
| 8 | 1/2 | X | 52 | 1/4 | 444.1 | 3868 | 101000 | 629.2 | 2674 | 111.0 |
| 8 | 1/2 | X | 53 | 5/8 | 455.8 | 4074 | 109200 | 645.7 | 2744 | 114.0 |
| 8 | 1/2 | X | 55 | | 467.5 | 4285 | 117800 | 662.3 | 2815 | 116.9 |
| 8 | 1/2 | X | 56 | 3/8 | 479.2 | 4502 | 126900 | 678.8 | 2885 | 119.8 |
| 8 | 1/2 | X | 57 | 3/4 | 490.9 | 4725 | 136400 | 695.4 | 2955 | 122.7 |
| 8 | 1/2 | X | 59 | 1/8 | 502.6 | 4952 | 146400 | 712.0 | 3026 | 125.7 |
| 8 | 1/2 | X | 60 | 1/2 | 514.3 | 5185 | 156900 | 728.5 | 3096 | 128.6 |
| 8 | 1/2 | X | 61 | 7/8 | 525.9 | 5424 | 167800 | 745.1 | 3167 | 131.5 |
| 8 | 1/2 | X | 63 | 1/4 | 537.6 | 5667 | 179200 | 761.6 | 3237 | 134.4 |
| 8 | 1/2 | X | 64 | 5/8 | 549.3 | 5917 | 191200 | 778.2 | 3307 | 137.3 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | | Beam Size d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1/2 | X | 66 | | 561.0 | 6171 | 203600 | 794.8 | 3378 | 140.3 |
| 8 | 1/2 | X | 67 | 3/8 | 572.7 | 6431 | 216600 | 811.3 | 3448 | 143.2 |
| 8 | 1/2 | X | 68 | 3/4 | 584.4 | 6696 | 230200 | 827.9 | 3518 | 146.1 |
| 10 | 1/2 | X | 2 | 3/4 | 28.88 | 13.23 | 18.20 | 50.53 | 265.3 | 7.2 |
| 10 | 1/2 | X | 4 | 1/8 | 43.31 | 29.78 | 61.42 | 75.80 | 397.9 | 10.8 |
| 10 | 1/2 | X | 5 | 1/2 | 57.75 | 52.94 | 145.6 | 101.1 | 530.6 | 14.4 |
| 10 | 1/2 | X | 6 | 7/8 | 72.19 | 82.71 | 284.3 | 126.3 | 663.2 | 18.0 |
| 10 | 1/2 | X | 8 | 1/4 | 86.63 | 119.1 | 491.3 | 151.6 | 795.9 | 21.7 |
| 10 | 1/2 | X | 9 | 5/8 | 101.1 | 162.1 | 780.2 | 176.9 | 928.5 | 25.3 |
| 10 | 1/2 | X | 11 | | 115.5 | 211.8 | 1165 | 202.1 | 1061 | 28.9 |
| 10 | 1/2 | X | 12 | 3/8 | 129.9 | 268.0 | 1658 | 227.4 | 1194 | 32.5 |
| 10 | 1/2 | X | 13 | 3/4 | 144.4 | 330.9 | 2275 | 252.7 | 1326 | 36.1 |
| 10 | 1/2 | X | 15 | 1/8 | 158.8 | 400.3 | 3028 | 277.9 | 1459 | 39.7 |
| 10 | 1/2 | X | 16 | 1/2 | 173.3 | 476.4 | 3931 | 303.2 | 1592 | 43.3 |
| 10 | 1/2 | X | 17 | 7/8 | 187.7 | 559.2 | 4997 | 328.5 | 1724 | 46.9 |
| 10 | 1/2 | X | 19 | 1/4 | 202.1 | 648.5 | 6242 | 353.7 | 1857 | 50.5 |
| 10 | 1/2 | X | 20 | 5/8 | 216.6 | 744.4 | 7677 | 379.0 | 1990 | 54.2 |
| 10 | 1/2 | X | 22 | | 231.0 | 847.0 | 9317 | 404.3 | 2122 | 57.8 |
| 10 | 1/2 | X | 23 | 3/8 | 245.4 | 956.2 | 11180 | 429.5 | 2255 | 61.4 |
| 10 | 1/2 | X | 24 | 3/4 | 259.9 | 1072 | 13270 | 454.8 | 2388 | 65.0 |
| 10 | 1/2 | X | 26 | 1/8 | 274.3 | 1194 | 15600 | 480.0 | 2520 | 68.6 |
| 10 | 1/2 | X | 27 | 1/2 | 288.8 | 1323 | 18200 | 505.3 | 2653 | 72.2 |
| 10 | 1/2 | X | 28 | 7/8 | 303.2 | 1459 | 21070 | 530.6 | 2786 | 75.8 |
| 10 | 1/2 | X | 30 | 1/4 | 317.6 | 1601 | 24220 | 555.8 | 2918 | 79.4 |
| 10 | 1/2 | X | 31 | 5/8 | 332.1 | 1750 | 27680 | 581.1 | 3051 | 83.0 |
| 10 | 1/2 | X | 33 | | 346.5 | 1906 | 31440 | 606.4 | 3183 | 86.6 |
| 10 | 1/2 | X | 34 | 3/8 | 360.9 | 2068 | 35540 | 631.6 | 3316 | 90.2 |
| 10 | 1/2 | X | 35 | 3/4 | 375.4 | 2237 | 39980 | 656.9 | 3449 | 93.9 |
| 10 | 1/2 | X | 37 | 1/8 | 389.8 | 2412 | 44770 | 682.2 | 3581 | 97.5 |
| 10 | 1/2 | X | 38 | 1/2 | 404.3 | 2594 | 49930 | 707.4 | 3714 | 101.1 |
| 10 | 1/2 | X | 39 | 7/8 | 418.7 | 2783 | 55480 | 732.7 | 3847 | 104.7 |
| 10 | 1/2 | X | 41 | 1/4 | 433.1 | 2978 | 61420 | 758.0 | 3979 | 108.3 |
| 10 | 1/2 | X | 42 | 5/8 | 447.6 | 3180 | 67760 | 783.2 | 4112 | 111.9 |
| 10 | 1/2 | X | 44 | | 462.0 | 3388 | 74540 | 808.5 | 4245 | 115.5 |
| 10 | 1/2 | X | 45 | 3/8 | 476.4 | 3603 | 81740 | 833.8 | 4377 | 119.1 |
| 10 | 1/2 | X | 46 | 3/4 | 490.9 | 3825 | 89400 | 859.0 | 4510 | 122.7 |
| 10 | 1/2 | X | 48 | 1/8 | 505.3 | 4053 | 97530 | 884.3 | 4643 | 126.3 |
| 10 | 1/2 | X | 49 | 1/2 | 519.8 | 4288 | 106100 | 909.6 | 4775 | 130.0 |
| 10 | 1/2 | X | 50 | 7/8 | 534.2 | 4529 | 115200 | 934.8 | 4908 | 133.6 |
| 10 | 1/2 | X | 52 | 1/4 | 548.6 | 4778 | 124800 | 960.1 | 5040 | 137.2 |
| 10 | 1/2 | X | 53 | 5/8 | 563.1 | 5032 | 134900 | 985.4 | 5173 | 140.8 |
| 10 | 1/2 | X | 55 | | 577.5 | 5294 | 145600 | 1011 | 5306 | 144.4 |
| 10 | 1/2 | X | 56 | 3/8 | 591.9 | 5562 | 156800 | 1036 | 5438 | 148.0 |
| 10 | 1/2 | X | 57 | 3/4 | 606.4 | 5836 | 168500 | 1061 | 5571 | 151.6 |
| 10 | 1/2 | X | 59 | 1/8 | 620.8 | 6118 | 180900 | 1086 | 5704 | 155.2 |
| 10 | 1/2 | X | 60 | 1/2 | 635.3 | 6405 | 193800 | 1112 | 5836 | 158.8 |
| 10 | 1/2 | X | 61 | 7/8 | 649.7 | 6700 | 207300 | 1137 | 5969 | 162.4 |
| 10 | 1/2 | X | 63 | 1/4 | 664.1 | 7001 | 221400 | 1162 | 6102 | 166.0 |
| 10 | 1/2 | X | 64 | 5/8 | 678.6 | 7309 | 236200 | 1187 | 6234 | 169.7 |
| 10 | 1/2 | X | 66 | | 693.0 | 7623 | 251600 | 1213 | 6367 | 173.3 |
| 10 | 1/2 | X | 67 | 3/8 | 707.4 | 7944 | 267600 | 1238 | 6500 | 176.9 |
| 10 | 1/2 | X | 68 | 3/4 | 721.9 | 8271 | 284300 | 1263 | 6632 | 180.5 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size | | | | | | A | x-x Axis | | y-y Axis | | SP Weight per foot (based on 36 lb/ft$^3$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| b Width | | | d Depth | | | Area | $S_x$ Section Modulus | $I_x$ Moment of Inertia | $S_y$ Section Modulus | $I_y$ Moment of Inertia | |
| in. | | | in. | | | in.$^2$ | in.$^3$ | in.$^4$ | in.$^3$ | in.$^4$ | lb/ft |
| 10 | 1/2 | X | 70 | 1/8 | | 736.3 | 8606 | 301700 | 1289 | 6765 | 184.1 |
| 10 | 1/2 | X | 71 | 1/2 | | 750.8 | 8946 | 319800 | 1314 | 6898 | 187.7 |
| 10 | 1/2 | X | 72 | 7/8 | | 765.2 | 9294 | 338600 | 1339 | 7030 | 191.3 |
| 10 | 1/2 | X | 74 | 1/4 | | 779.6 | 9648 | 358200 | 1364 | 7163 | 194.9 |
| 10 | 1/2 | X | 75 | 5/8 | | 794.1 | 10010 | 378400 | 1390 | 7295 | 198.5 |
| 10 | 1/2 | X | 77 | | | 808.5 | 10380 | 399500 | 1415 | 7428 | 202.1 |
| 10 | 1/2 | X | 78 | 3/8 | | 822.9 | 10750 | 421300 | 1440 | 7561 | 205.7 |
| 10 | 1/2 | X | 79 | 3/4 | | 837.4 | 11130 | 443800 | 1465 | 7693 | 209.4 |
| 10 | 1/2 | X | 81 | 1/8 | | 851.8 | 11520 | 467200 | 1491 | 7826 | 213.0 |
| 10 | 1/2 | X | 82 | 1/2 | | 866.3 | 11910 | 491300 | 1516 | 7959 | 216.6 |
| 12 | | X | 2 | 3/4 | | 33.00 | 15.13 | 20.80 | 66.00 | 396.0 | 8.3 |
| 12 | | X | 4 | 1/8 | | 49.50 | 34.03 | 70.19 | 99.00 | 594.0 | 12.4 |
| 12 | | X | 5 | 1/2 | | 66.00 | 60.50 | 166.4 | 132.0 | 792.0 | 16.5 |
| 12 | | X | 6 | 7/8 | | 82.50 | 94.53 | 325.0 | 165.0 | 990.0 | 20.6 |
| 12 | | X | 8 | 1/4 | | 99.00 | 136.1 | 561.5 | 198.0 | 1188 | 24.8 |
| 12 | | X | 9 | 5/8 | | 115.5 | 185.3 | 891.7 | 231.0 | 1386 | 28.9 |
| 12 | | X | 11 | | | 132.0 | 242.0 | 1331 | 264.0 | 1584 | 33.0 |
| 12 | | X | 12 | 3/8 | | 148.5 | 306.3 | 1895 | 297.0 | 1782 | 37.1 |
| 12 | | X | 13 | 3/4 | | 165.0 | 378.1 | 2600 | 330.0 | 1980 | 41.3 |
| 12 | | X | 15 | 1/8 | | 181.5 | 457.5 | 3460 | 363.0 | 2178 | 45.4 |
| 12 | | X | 16 | 1/2 | | 198.0 | 544.5 | 4492 | 396.0 | 2376 | 49.5 |
| 12 | | X | 17 | 7/8 | | 214.5 | 639.0 | 5711 | 429.0 | 2574 | 53.6 |
| 12 | | X | 19 | 1/4 | | 231.0 | 741.1 | 7133 | 462.0 | 2772 | 57.8 |
| 12 | | X | 20 | 5/8 | | 247.5 | 850.8 | 8774 | 495.0 | 2970 | 61.9 |
| 12 | | X | 22 | | | 264.0 | 968.0 | 10650 | 528.0 | 3168 | 66.0 |
| 12 | | X | 23 | 3/8 | | 280.5 | 1093 | 12770 | 561.0 | 3366 | 70.1 |
| 12 | | X | 24 | 3/4 | | 297.0 | 1225 | 15160 | 594.0 | 3564 | 74.3 |
| 12 | | X | 26 | 1/8 | | 313.5 | 1365 | 17830 | 627.0 | 3762 | 78.4 |
| 12 | | X | 27 | 1/2 | | 330.0 | 1513 | 20800 | 660.0 | 3960 | 82.5 |
| 12 | | X | 28 | 7/8 | | 346.5 | 1668 | 24070 | 693.0 | 4158 | 86.6 |
| 12 | | X | 30 | 1/4 | | 363.0 | 1830 | 27680 | 726.0 | 4356 | 90.8 |
| 12 | | X | 31 | 5/8 | | 379.5 | 2000 | 31630 | 759.0 | 4554 | 94.9 |
| 12 | | X | 33 | | | 396.0 | 2178 | 35940 | 792.0 | 4752 | 99.0 |
| 12 | | X | 34 | 3/8 | | 412.5 | 2363 | 40620 | 825.0 | 4950 | 103.1 |
| 12 | | X | 35 | 3/4 | | 429.0 | 2556 | 45690 | 858.0 | 5148 | 107.3 |
| 12 | | X | 37 | 1/8 | | 445.5 | 2757 | 51170 | 891.0 | 5346 | 111.4 |
| 12 | | X | 38 | 1/2 | | 462.0 | 2965 | 57070 | 924.0 | 5544 | 115.5 |
| 12 | | X | 39 | 7/8 | | 478.5 | 3180 | 63400 | 957.0 | 5742 | 119.6 |
| 12 | | X | 41 | 1/4 | | 495.0 | 3403 | 70190 | 990.0 | 5940 | 123.8 |
| 12 | | X | 42 | 5/8 | | 511.5 | 3634 | 77440 | 1023 | 6138 | 127.9 |
| 12 | | X | 44 | | | 528.0 | 3872 | 85180 | 1056 | 6336 | 132.0 |
| 12 | | X | 45 | 3/8 | | 544.5 | 4118 | 93420 | 1089 | 6534 | 136.1 |
| 12 | | X | 46 | 3/4 | | 561.0 | 4371 | 102200 | 1122 | 6732 | 140.3 |
| 12 | | X | 48 | 1/8 | | 577.5 | 4632 | 111500 | 1155 | 6930 | 144.4 |
| 12 | | X | 49 | 1/2 | | 594.0 | 4901 | 121300 | 1188 | 7128 | 148.5 |
| 12 | | X | 50 | 7/8 | | 610.5 | 5177 | 131700 | 1221 | 7326 | 152.6 |
| 12 | | X | 52 | 1/4 | | 627.0 | 5460 | 142600 | 1254 | 7524 | 156.8 |
| 12 | | X | 53 | 5/8 | | 643.5 | 5751 | 154200 | 1287 | 7722 | 160.9 |
| 12 | | X | 55 | | | 660.0 | 6050 | 166400 | 1320 | 7920 | 165.0 |
| 12 | | X | 56 | 3/8 | | 676.5 | 6356 | 179200 | 1353 | 8118 | 169.1 |
| 12 | | X | 57 | 3/4 | | 693.0 | 6670 | 192600 | 1386 | 8316 | 173.3 |
| 12 | | X | 59 | 1/8 | | 709.5 | 6992 | 206700 | 1419 | 8514 | 177.4 |

# Section Properties of Structural Glued Laminated Timber

## American Insitute of Timber Construction

## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size | | | | A | x-x Axis | | y-y Axis | | SP Weight per foot (based on 36 lb/ft$^3$) |
|---|---|---|---|---|---|---|---|---|---|
| **b** Width | | **d** Depth | | Area | $S_x$ Section Modulus | $I_x$ Moment of Inertia | $S_y$ Section Modulus | $I_y$ Moment of Inertia | |
| in. | | in. | | in.$^2$ | in.$^3$ | in.$^4$ | in.$^3$ | in.$^4$ | lb/ft |
| 12 | X | 60 | 1/2 | 726.0 | 7321 | 221400 | 1452 | 8712 | 181.5 |
| 12 | X | 61 | 7/8 | 742.5 | 7657 | 236900 | 1485 | 8910 | 185.6 |
| 12 | X | 63 | 1/4 | 759.0 | 8001 | 253000 | 1518 | 9108 | 189.8 |
| 12 | X | 64 | 5/8 | 775.5 | 8353 | 269900 | 1551 | 9306 | 193.9 |
| 12 | X | 66 | | 792.0 | 8712 | 287500 | 1584 | 9504 | 198.0 |
| 12 | X | 67 | 3/8 | 808.5 | 9079 | 305800 | 1617 | 9702 | 202.1 |
| 12 | X | 68 | 3/4 | 825.0 | 9453 | 325000 | 1650 | 9900 | 206.3 |
| 12 | X | 70 | 1/8 | 841.5 | 9835 | 344800 | 1683 | 10100 | 210.4 |
| 12 | X | 71 | 1/2 | 858.0 | 10220 | 365500 | 1716 | 10300 | 214.5 |
| 12 | X | 72 | 7/8 | 874.5 | 10620 | 387000 | 1749 | 10490 | 218.6 |
| 12 | X | 74 | 1/4 | 891.0 | 11030 | 409300 | 1782 | 10690 | 222.8 |
| 12 | X | 75 | 5/8 | 907.5 | 11440 | 432500 | 1815 | 10890 | 226.9 |
| 12 | X | 77 | | 924.0 | 11860 | 456500 | 1848 | 11090 | 231.0 |
| 12 | X | 78 | 3/8 | 940.5 | 12290 | 481400 | 1881 | 11290 | 235.1 |
| 12 | X | 79 | 3/4 | 957.0 | 12720 | 507200 | 1914 | 11480 | 239.3 |
| 12 | X | 81 | 1/8 | 973.5 | 13160 | 533900 | 1947 | 11680 | 243.4 |
| 12 | X | 82 | 1/2 | 990.0 | 13610 | 561500 | 1980 | 11880 | 247.5 |
| 12 | X | 83 | 7/8 | 1007 | 14070 | 590100 | 2013 | 12080 | 251.8 |
| 12 | X | 85 | 1/4 | 1023 | 14540 | 619600 | 2046 | 12280 | 255.8 |
| 12 | X | 86 | 5/8 | 1040 | 15010 | 650000 | 2079 | 12470 | 260.0 |
| 12 | X | 88 | | 1056 | 15490 | 681500 | 2112 | 12670 | 264.0 |
| 12 | X | 89 | 3/8 | 1073 | 15980 | 713900 | 2145 | 12870 | 268.3 |
| 12 | X | 90 | 3/4 | 1089 | 16470 | 747400 | 2178 | 13070 | 272.3 |
| 12 | X | 92 | 1/8 | 1106 | 16970 | 781900 | 2211 | 13270 | 276.5 |
| 12 | X | 93 | 1/2 | 1122 | 17480 | 817400 | 2244 | 13460 | 280.5 |
| 12 | X | 94 | 7/8 | 1139 | 18000 | 854000 | 2277 | 13660 | 284.8 |
| 12 | X | 96 | 1/4 | 1155 | 18530 | 891700 | 2310 | 13860 | 288.8 |
| 12 | X | 97 | 5/8 | 1172 | 19060 | 930400 | 2343 | 14060 | 293.0 |
| 12 | X | 99 | | 1188 | 19600 | 970300 | 2376 | 14260 | 297.0 |
| 12 | X | 100 | 3/8 | 1205 | 20150 | 1011000 | 2409 | 14450 | 301.3 |
| 12 | X | 101 | 3/4 | 1221 | 20710 | 1053000 | 2442 | 14650 | 305.3 |
| 12 | X | 103 | 1/8 | 1238 | 21270 | 1097000 | 2475 | 14850 | 309.5 |
| 14 | X | 2 | 3/4 | 38.50 | 17.65 | 24.26 | 89.83 | 628.8 | 9.6 |
| 14 | X | 4 | 1/8 | 57.75 | 39.70 | 81.89 | 134.8 | 943.3 | 14.4 |
| 14 | X | 5 | 1/2 | 77.00 | 70.58 | 194.1 | 179.7 | 1258 | 19.3 |
| 14 | X | 6 | 7/8 | 96.25 | 110.3 | 379.1 | 224.6 | 1572 | 24.1 |
| 14 | X | 8 | 1/4 | 115.5 | 158.8 | 655.1 | 269.5 | 1887 | 28.9 |
| 14 | X | 9 | 5/8 | 134.8 | 216.2 | 1040 | 314.4 | 2201 | 33.7 |
| 14 | X | 11 | | 154.0 | 282.3 | 1553 | 359.3 | 2515 | 38.5 |
| 14 | X | 12 | 3/8 | 173.3 | 357.3 | 2211 | 404.3 | 2830 | 43.3 |
| 14 | X | 13 | 3/4 | 192.5 | 441.1 | 3033 | 449.2 | 3144 | 48.1 |
| 14 | X | 15 | 1/8 | 211.8 | 533.8 | 4037 | 494.1 | 3459 | 53.0 |
| 14 | X | 16 | 1/2 | 231.0 | 635.3 | 5241 | 539.0 | 3773 | 57.8 |
| 14 | X | 17 | 7/8 | 250.3 | 745.5 | 6663 | 583.9 | 4087 | 62.6 |
| 14 | X | 19 | 1/4 | 269.5 | 864.6 | 8322 | 628.8 | 4402 | 67.4 |
| 14 | X | 20 | 5/8 | 288.8 | 992.6 | 10240 | 673.8 | 4716 | 72.2 |
| 14 | X | 22 | | 308.0 | 1129 | 12420 | 718.7 | 5031 | 77.0 |
| 14 | X | 23 | 3/8 | 327.3 | 1275 | 14900 | 763.6 | 5345 | 81.8 |
| 14 | X | 24 | 3/4 | 346.5 | 1429 | 17690 | 808.5 | 5660 | 86.6 |
| 14 | X | 26 | 1/8 | 365.8 | 1593 | 20800 | 853.4 | 5974 | 91.5 |
| 14 | X | 27 | 1/2 | 385.0 | 1765 | 24260 | 898.3 | 6288 | 96.3 |
| 14 | X | 28 | 7/8 | 404.3 | 1945 | 28090 | 943.3 | 6603 | 101.1 |

# Section Properties of Structural Glued Laminated Timber
## American Insitute of Timber Construction
## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size b Width in. | | d Depth in. | | A Area in.$^2$ | x-x Axis $S_x$ Section Modulus in.$^3$ | x-x Axis $I_x$ Moment of Inertia in.$^4$ | y-y Axis $S_y$ Section Modulus in.$^3$ | y-y Axis $I_y$ Moment of Inertia in.$^4$ | SP Weight per foot (based on 36 lb/ft$^3$) lb/ft |
|---|---|---|---|---|---|---|---|---|---|
| 14 | X | 30 | 1/4 | 423.5 | 2135 | 32290 | 988.2 | 6917 | 105.9 |
| 14 | X | 31 | 5/8 | 442.8 | 2334 | 36900 | 1033 | 7232 | 110.7 |
| 14 | X | 33 | | 462.0 | 2541 | 41930 | 1078 | 7546 | 115.5 |
| 14 | X | 34 | 3/8 | 481.3 | 2757 | 47390 | 1123 | 7860 | 120.3 |
| 14 | X | 35 | 3/4 | 500.5 | 2982 | 53310 | 1168 | 8175 | 125.1 |
| 14 | X | 37 | 1/8 | 519.8 | 3216 | 59700 | 1213 | 8489 | 130.0 |
| 14 | X | 38 | 1/2 | 539.0 | 3459 | 66580 | 1258 | 8804 | 134.8 |
| 14 | X | 39 | 7/8 | 558.3 | 3710 | 73970 | 1303 | 9118 | 139.6 |
| 14 | X | 41 | 1/4 | 577.5 | 3970 | 81890 | 1348 | 9433 | 144.4 |
| 14 | X | 42 | 5/8 | 596.8 | 4239 | 90350 | 1392 | 9747 | 149.2 |
| 14 | X | 44 | | 616.0 | 4517 | 99380 | 1437 | 10060 | 154.0 |
| 14 | X | 45 | 3/8 | 635.3 | 4804 | 109000 | 1482 | 10380 | 158.8 |
| 14 | X | 46 | 3/4 | 654.5 | 5100 | 119200 | 1527 | 10690 | 163.6 |
| 14 | X | 48 | 1/8 | 673.8 | 5404 | 130000 | 1572 | 11000 | 168.5 |
| 14 | X | 49 | 1/2 | 693.0 | 5717 | 141500 | 1617 | 11320 | 173.3 |
| 14 | X | 50 | 7/8 | 712.3 | 6039 | 153600 | 1662 | 11630 | 178.1 |
| 14 | X | 52 | 1/4 | 731.5 | 6370 | 166400 | 1707 | 11950 | 182.9 |
| 14 | X | 53 | 5/8 | 750.8 | 6710 | 179900 | 1752 | 12260 | 187.7 |
| 14 | X | 55 | | 770.0 | 7058 | 194100 | 1797 | 12580 | 192.5 |
| 14 | X | 56 | 3/8 | 789.3 | 7416 | 209000 | 1842 | 12890 | 197.3 |
| 14 | X | 57 | 3/4 | 808.5 | 7782 | 224700 | 1887 | 13210 | 202.1 |
| 14 | X | 59 | 1/8 | 827.8 | 8157 | 241100 | 1931 | 13520 | 207.0 |
| 14 | X | 60 | 1/2 | 847.0 | 8541 | 258400 | 1976 | 13830 | 211.8 |
| 14 | X | 61 | 7/8 | 866.3 | 8933 | 276400 | 2021 | 14150 | 216.6 |
| 14 | X | 63 | 1/4 | 885.5 | 9335 | 295200 | 2066 | 14460 | 221.4 |
| 14 | X | 64 | 5/8 | 904.8 | 9745 | 314900 | 2111 | 14780 | 226.2 |
| 14 | X | 66 | | 924.0 | 10160 | 335400 | 2156 | 15090 | 231.0 |
| 14 | X | 67 | 3/8 | 943.3 | 10590 | 356800 | 2201 | 15410 | 235.8 |
| 14 | X | 68 | 3/4 | 962.5 | 11030 | 379100 | 2246 | 15720 | 240.6 |
| 14 | X | 70 | 1/8 | 981.8 | 11470 | 402300 | 2291 | 16040 | 245.5 |
| 14 | X | 71 | 1/2 | 1001 | 11930 | 426400 | 2336 | 16350 | 250.3 |
| 14 | X | 72 | 7/8 | 1020 | 12390 | 451500 | 2381 | 16660 | 255.0 |
| 14 | X | 74 | 1/4 | 1040 | 12860 | 477600 | 2426 | 16980 | 260.0 |
| 14 | X | 75 | 5/8 | 1059 | 13340 | 504600 | 2470 | 17290 | 264.8 |
| 14 | X | 77 | | 1078 | 13830 | 532600 | 2515 | 17610 | 269.5 |
| 14 | X | 78 | 3/8 | 1097 | 14330 | 561700 | 2560 | 17920 | 274.3 |
| 14 | X | 79 | 3/4 | 1117 | 14840 | 591800 | 2605 | 18240 | 279.3 |
| 14 | X | 81 | 1/8 | 1136 | 15360 | 622900 | 2650 | 18550 | 284.0 |
| 14 | X | 82 | 1/2 | 1155 | 15880 | 655100 | 2695 | 18870 | 288.8 |
| 14 | X | 83 | 7/8 | 1174 | 16420 | 688400 | 2740 | 19180 | 293.5 |
| 14 | X | 85 | 1/4 | 1194 | 16960 | 722800 | 2785 | 19490 | 298.5 |
| 14 | X | 86 | 5/8 | 1213 | 17510 | 758400 | 2830 | 19810 | 303.3 |
| 14 | X | 88 | | 1232 | 18070 | 795100 | 2875 | 20120 | 308.0 |
| 14 | X | 89 | 3/8 | 1251 | 18640 | 832900 | 2920 | 20440 | 312.8 |
| 14 | X | 90 | 3/4 | 1271 | 19220 | 871900 | 2965 | 20750 | 317.8 |
| 14 | X | 92 | 1/8 | 1290 | 19800 | 912200 | 3009 | 21070 | 322.5 |
| 14 | X | 93 | 1/2 | 1309 | 20400 | 953600 | 3054 | 21380 | 327.3 |
| 14 | X | 94 | 7/8 | 1328 | 21000 | 996300 | 3099 | 21690 | 332.0 |
| 14 | X | 96 | 1/4 | 1348 | 21620 | 1040000 | 3144 | 22010 | 337.0 |
| 14 | X | 97 | 5/8 | 1367 | 22240 | 1086000 | 3189 | 22320 | 341.8 |
| 14 | X | 99 | | 1386 | 22870 | 1132000 | 3234 | 22640 | 346.5 |
| 14 | X | 100 | 3/8 | 1405 | 23510 | 1180000 | 3279 | 22950 | 351.3 |

# Section Properties of Structural Glued Laminated Timber
## American Insitute of Timber Construction
## *Southern Pine* (Based on 1-3/8 in. Thick Laminations)

| Beam Size | | | | A | x-x Axis | | y-y Axis | | SP Weight per foot (based on 36 lb/ft$^3$) |
|---|---|---|---|---|---|---|---|---|---|
| **b** Width | | **d** Depth | | Area | $S_x$ Section Modulus | $I_x$ Moment of Inertia | $S_y$ Section Modulus | $I_y$ Moment of Inertia | |
| in. | | in. | | in.$^2$ | in.$^3$ | in.$^4$ | in.$^3$ | in.$^4$ | lb/ft |
| 14 | X | 101 | 3/4 | 1425 | 24160 | 1229000 | 3324 | 23270 | 356.3 |
| 14 | X | 103 | 1/8 | 1444 | 24810 | 1279000 | 3369 | 23580 | 361.0 |
| 14 | X | 104 | 1/2 | 1463 | 25480 | 1331000 | 3414 | 23900 | 365.8 |
| 14 | X | 105 | 7/8 | 1482 | 26160 | 1385000 | 3459 | 24210 | 370.5 |
| 14 | X | 107 | 1/4 | 1502 | 26840 | 1439000 | 3504 | 24520 | 375.5 |
| 14 | X | 108 | 5/8 | 1521 | 27530 | 1495000 | 3548 | 24840 | 380.3 |
| 14 | X | 110 | | 1540 | 28230 | 1553000 | 3593 | 25150 | 385.0 |
| 14 | X | 111 | 3/8 | 1559 | 28940 | 1612000 | 3638 | 25470 | 389.8 |
| 14 | X | 112 | 3/4 | 1579 | 29660 | 1672000 | 3683 | 25780 | 394.8 |
| 14 | X | 114 | 1/8 | 1598 | 30390 | 1734000 | 3728 | 26100 | 399.5 |
| 14 | X | 115 | 1/2 | 1617 | 31130 | 1798000 | 3773 | 26410 | 404.3 |
| 14 | X | 116 | 7/8 | 1636 | 31870 | 1863000 | 3818 | 26730 | 409.0 |
| 14 | X | 118 | 1/4 | 1656 | 32630 | 1929000 | 3863 | 27040 | 414.0 |
| 14 | X | 119 | 5/8 | 1675 | 33390 | 1997000 | 3908 | 27350 | 418.8 |