

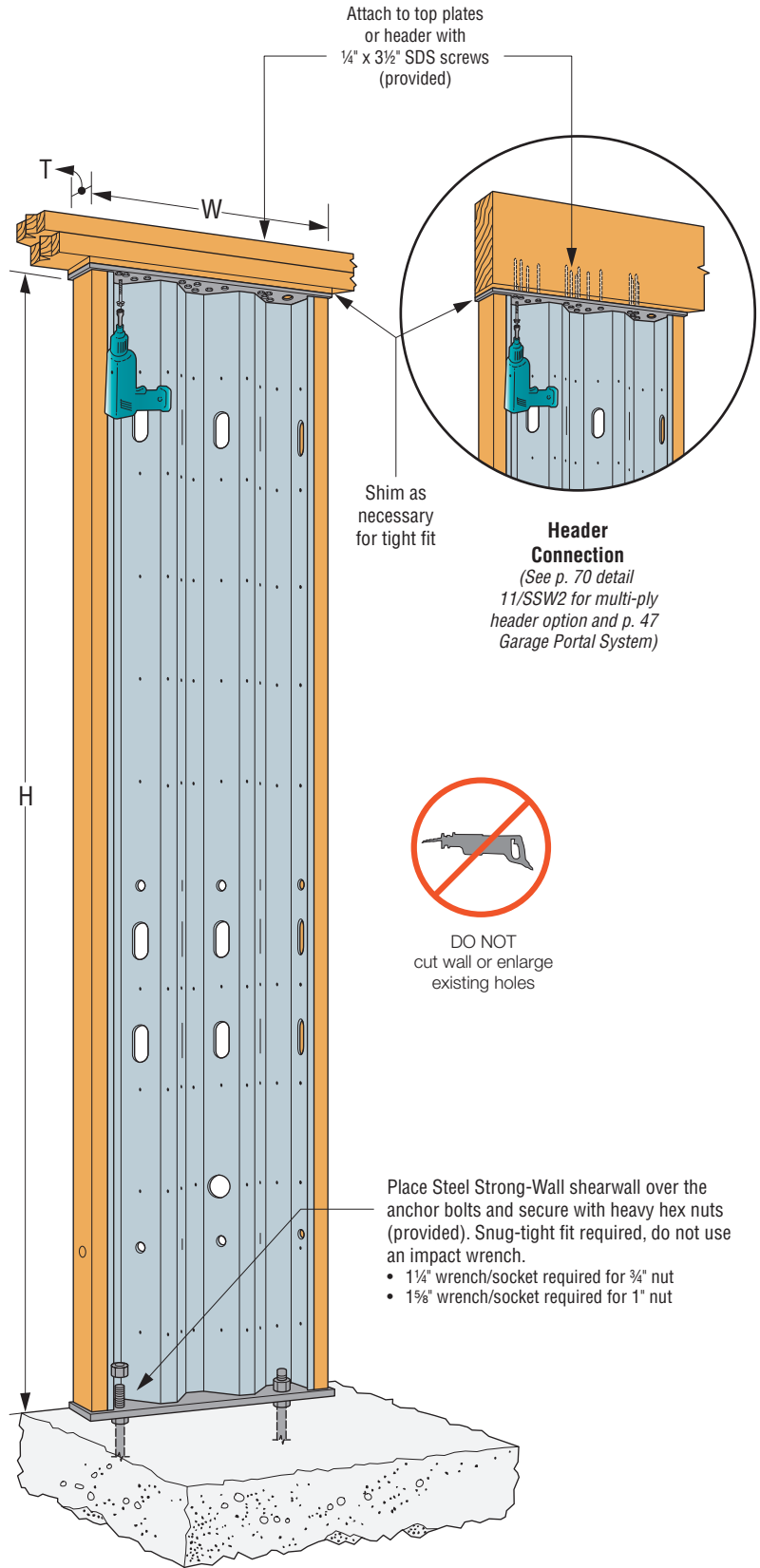
Standard Application on Concrete Foundations

Installation Information

- Do not cut the Steel Strong-Wall® or enlarge existing holes. Doing so will compromise the performance of the wall.
- Do not use an impact wrench to tighten nuts on the anchor bolts.
- Maximum shim thickness between the Steel Strong-Wall and top plates or header is 7/8" using Simpson Strong-Tie® Strong-Drive® 1/4" x 3 1/2" SDS Heavy-Duty Connector screws. For top of wall height adjustment, see detail 5/SSW2 on p. 69.
- Walls with 2x4 preattached studs may also be used in 2x6 or 2x8 wall framing. Install the wall flush to one face of the framing and add furring to the opposite side.
- Walls may be installed with solid or multi-ply headers, see detail 11/SSW2 on p. 70 for details.

Steel Strong-Wall® Product Data

| Model No. | W (in.) | H (in.) | T (in.) | Anchor Bolts | | Number of Screws in Top of Wall | Total Wall Weight (lb.) |
|-----------|---------|---------|---------|--------------|------------|---------------------------------|-------------------------|
| | | | | Qty. | Dia. (in.) | | |
| SSW12x7 | 12 | 80 | 3 1/2 | 2 | 3/4 | 4 | 74 |
| SSW15x7 | 15 | 80 | 3 1/2 | 2 | 1 | 6 | 86 |
| SSW18x7 | 18 | 80 | 3 1/2 | 2 | 1 | 9 | 99 |
| SSW21x7 | 21 | 80 | 3 1/2 | 2 | 1 | 12 | 117 |
| SSW24x7 | 24 | 80 | 3 1/2 | 2 | 1 | 14 | 127 |
| SSW12x7.4 | 12 | 85 1/2 | 3 1/2 | 2 | 3/4 | 4 | 78 |
| SSW15x7.4 | 15 | 85 1/2 | 3 1/2 | 2 | 1 | 6 | 91 |
| SSW18x7.4 | 18 | 85 1/2 | 3 1/2 | 2 | 1 | 9 | 104 |
| SSW21x7.4 | 21 | 85 1/2 | 3 1/2 | 2 | 1 | 12 | 122 |
| SSW24x7.4 | 24 | 85 1/2 | 3 1/2 | 2 | 1 | 14 | 134 |
| SSW12x8 | 12 | 93 3/4 | 3 1/2 | 2 | 3/4 | 4 | 85 |
| SSW15x8 | 15 | 93 3/4 | 3 1/2 | 2 | 1 | 6 | 99 |
| SSW18x8 | 18 | 93 3/4 | 3 1/2 | 2 | 1 | 9 | 113 |
| SSW21x8 | 21 | 93 3/4 | 3 1/2 | 2 | 1 | 12 | 132 |
| SSW24x8 | 24 | 93 3/4 | 3 1/2 | 2 | 1 | 14 | 144 |
| SSW12x9 | 12 | 105 1/4 | 3 1/2 | 2 | 3/4 | 4 | 94 |
| SSW15x9 | 15 | 105 1/4 | 3 1/2 | 2 | 1 | 6 | 110 |
| SSW18x9 | 18 | 105 1/4 | 3 1/2 | 2 | 1 | 9 | 125 |
| SSW21x9 | 21 | 105 1/4 | 3 1/2 | 2 | 1 | 12 | 147 |
| SSW24x9 | 24 | 105 1/4 | 3 1/2 | 2 | 1 | 14 | 160 |
| SSW12x10 | 12 | 117 1/4 | 3 1/2 | 2 | 3/4 | 4 | 104 |
| SSW15x10 | 15 | 117 1/4 | 3 1/2 | 2 | 1 | 6 | 121 |
| SSW18x10 | 18 | 117 1/4 | 3 1/2 | 2 | 1 | 9 | 138 |
| SSW21x10 | 21 | 117 1/4 | 3 1/2 | 2 | 1 | 12 | 162 |
| SSW24x10 | 24 | 117 1/4 | 3 1/2 | 2 | 1 | 14 | 177 |
| SSW15x11 | 15 | 129 1/4 | 5 1/2 | 2 | 1 | 6 | 148 |
| SSW18x11 | 18 | 129 1/4 | 5 1/2 | 2 | 1 | 9 | 167 |
| SSW21x11 | 21 | 129 1/4 | 5 1/2 | 2 | 1 | 12 | 193 |
| SSW24x11 | 24 | 129 1/4 | 5 1/2 | 2 | 1 | 14 | 209 |
| SSW15x12 | 15 | 141 1/4 | 5 1/2 | 2 | 1 | 6 | 160 |
| SSW18x12 | 18 | 141 1/4 | 5 1/2 | 2 | 1 | 9 | 180 |
| SSW21x12 | 21 | 141 1/4 | 5 1/2 | 2 | 1 | 12 | 208 |
| SSW24x12 | 24 | 141 1/4 | 5 1/2 | 2 | 1 | 14 | 225 |
| SSW18x13 | 18 | 153 3/4 | 5 1/2 | 2 | 1 | 9 | 194 |
| SSW21x13 | 21 | 153 3/4 | 5 1/2 | 2 | 1 | 12 | 224 |
| SSW24x13 | 24 | 153 3/4 | 5 1/2 | 2 | 1 | 14 | 243 |



Steel Strong-Wall®



DO NOT cut wall or enlarge existing holes

Place Steel Strong-Wall shearwall over the anchor bolts and secure with heavy hex nuts (provided). Snug-tight fit required, do not use an impact wrench.

- 1 1/4" wrench/socket required for 3/4" nut
- 1 5/8" wrench/socket required for 1" nut

Standard Installation
US Patent 8,281,551
Canadian Patent 2,489,845

Standard Application on Concrete Foundations

| Model No. | Allowable Axial Load (lb.) | Seismic ² | | | Wind | | |
|-----------|----------------------------|----------------------------------|--------------------------------|--|----------------------------------|--------------------------------|--|
| | | Allowable ASD Shear Load V (lb.) | Drift at Allowable Shear (in.) | Anchor Tension at Allowable Shear ³ (lb.) | Allowable ASD Shear Load V (lb.) | Drift at Allowable Shear (in.) | Anchor Tension at Allowable Shear ³ (lb.) |
| SSW12x7 | 1,000 | 955 | 0.36 | 9,840 | 1,215 | 0.46 | 13,620 |
| | 4,000 | 955 | 0.36 | 9,840 | 1,095 | 0.42 | 11,765 |
| | 7,500 | 890 | 0.34 | 9,010 | 890 | 0.34 | 9,010 |
| SSW15x7 | 1,000 | 1,855 | 0.36 | 15,655 | 1,860 | 0.36 | 15,715 |
| | 4,000 | 1,665 | 0.33 | 13,550 | 1,665 | 0.33 | 13,550 |
| | 7,500 | 1,445 | 0.28 | 11,340 | 1,445 | 0.28 | 11,340 |
| SSW18x7 | 1,000 | 2,905 | 0.34 | 19,660 | 3,480 | 0.41 | 25,805 |
| | 4,000 | 2,905 | 0.34 | 19,660 | 3,250 | 0.38 | 23,135 |
| | 7,500 | 2,905 | 0.34 | 19,660 | 2,980 | 0.35 | 20,370 |
| SSW21x7 | 1,000 | 4,200 | 0.32 | 23,755 | 4,440 | 0.34 | 25,710 |
| | 4,000 | 4,200 | 0.32 | 23,755 | 4,440 | 0.34 | 25,710 |
| | 7,500 | 4,200 | 0.32 | 23,755 | 4,310 | 0.33 | 24,635 |
| SSW24x7 | 1,000 | 5,495 | 0.29 | 26,270 | 5,730 | 0.31 | 27,835 |
| | 4,000 | 5,495 | 0.29 | 26,270 | 5,730 | 0.31 | 27,835 |
| | 7,500 | 5,495 | 0.29 | 26,270 | 5,730 | 0.31 | 27,835 |
| SSW12x7.4 | 1,000 | 870 | 0.39 | 9,515 | 1,105 | 0.49 | 13,070 |
| | 4,000 | 870 | 0.39 | 9,515 | 970 | 0.43 | 10,940 |
| | 7,500 | 750 | 0.33 | 7,940 | 750 | 0.33 | 7,940 |
| SSW15x7.4 | 1,000 | 1,685 | 0.39 | 15,035 | 1,700 | 0.39 | 15,215 |
| | 4,000 | 1,500 | 0.34 | 12,905 | 1,500 | 0.34 | 12,905 |
| | 7,500 | 1,270 | 0.29 | 10,510 | 1,270 | 0.29 | 10,510 |
| SSW18x7.4 | 1,000 | 2,700 | 0.37 | 19,475 | 3,255 | 0.44 | 25,790 |
| | 4,000 | 2,700 | 0.37 | 19,475 | 3,040 | 0.42 | 23,125 |
| | 7,500 | 2,700 | 0.37 | 19,475 | 2,790 | 0.38 | 20,390 |
| SSW21x7.4 | 1,000 | 3,890 | 0.35 | 23,420 | 4,230 | 0.38 | 26,405 |
| | 4,000 | 3,890 | 0.35 | 23,420 | 4,230 | 0.38 | 26,405 |
| | 7,500 | 3,890 | 0.35 | 23,420 | 4,035 | 0.36 | 24,655 |
| SSW24x7.4 | 1,000 | 5,330 | 0.34 | 27,610 | 5,450 | 0.34 | 28,485 |
| | 4,000 | 5,330 | 0.34 | 27,610 | 5,450 | 0.34 | 28,485 |
| | 7,500 | 5,330 | 0.34 | 27,610 | 5,450 | 0.34 | 28,485 |
| SSW12x8 | 1,000 | 775 | 0.42 | 9,180 | 985 | 0.53 | 12,560 |
| | 4,000 | 775 | 0.42 | 9,180 | 865 | 0.47 | 10,550 |
| | 7,500 | 665 | 0.36 | 7,630 | 665 | 0.36 | 7,630 |
| SSW15x8 | 1,000 | 1,505 | 0.42 | 14,515 | 1,530 | 0.43 | 14,835 |
| | 4,000 | 1,345 | 0.37 | 12,545 | 1,345 | 0.37 | 12,545 |
| | 7,500 | 1,135 | 0.32 | 10,190 | 1,135 | 0.32 | 10,190 |
| SSW18x8 | 1,000 | 2,480 | 0.41 | 19,525 | 2,985 | 0.50 | 25,795 |
| | 4,000 | 2,480 | 0.41 | 19,525 | 2,790 | 0.47 | 23,160 |
| | 7,500 | 2,480 | 0.41 | 19,525 | 2,560 | 0.43 | 20,410 |
| SSW21x8 | 1,000 | 3,560 | 0.39 | 23,360 | 3,960 | 0.43 | 27,240 |
| | 4,000 | 3,560 | 0.39 | 23,360 | 3,960 | 0.43 | 27,240 |
| | 7,500 | 3,560 | 0.39 | 23,360 | 3,700 | 0.41 | 24,660 |
| SSW24x8 | 1,000 | 4,865 | 0.37 | 27,435 | 5,105 | 0.39 | 29,370 |
| | 4,000 | 4,865 | 0.37 | 27,435 | 5,105 | 0.39 | 29,370 |
| | 7,500 | 4,865 | 0.37 | 27,435 | 5,055 | 0.39 | 28,960 |
| SSW12x9 | 1,000 | 660 | 0.47 | 8,745 | 840 | 0.60 | 11,915 |
| | 4,000 | 660 | 0.47 | 8,745 | 705 | 0.50 | 9,485 |
| | 7,500 | 505 | 0.36 | 6,380 | 505 | 0.36 | 6,380 |
| SSW15x9 | 1,000 | 1,315 | 0.45 | 14,250 | 1,315 | 0.47 | 14,250 |
| | 4,000 | 1,130 | 0.38 | 11,740 | 1,130 | 0.40 | 11,740 |
| | 7,500 | 925 | 0.31 | 9,235 | 925 | 0.33 | 9,235 |
| SSW18x9 | 1,000 | 2,145 | 0.47 | 18,890 | 2,645 | 0.58 | 25,800 |
| | 4,000 | 2,145 | 0.47 | 18,890 | 2,470 | 0.54 | 23,130 |
| | 7,500 | 2,145 | 0.47 | 18,890 | 2,265 | 0.50 | 20,370 |
| SSW21x9 | 1,000 | 3,145 | 0.46 | 23,265 | 3,590 | 0.52 | 28,215 |
| | 4,000 | 3,145 | 0.46 | 23,265 | 3,530 | 0.51 | 27,490 |
| | 7,500 | 3,145 | 0.46 | 23,265 | 3,280 | 0.47 | 24,680 |
| SSW24x9 | 1,000 | 4,285 | 0.44 | 27,210 | 4,605 | 0.47 | 30,150 |
| | 4,000 | 4,285 | 0.44 | 27,210 | 4,605 | 0.47 | 30,150 |
| | 7,500 | 4,285 | 0.44 | 27,210 | 4,480 | 0.46 | 28,970 |

See footnotes on p. 44.

Standard Application on Concrete Foundations

| Model No. | Allowable Axial Load (lb.) | Seismic ² | | | Wind | | |
|-----------|----------------------------|----------------------------------|--------------------------------|--|----------------------------------|--------------------------------|--|
| | | Allowable ASD Shear Load V (lb.) | Drift at Allowable Shear (in.) | Anchor Tension at Allowable Shear ³ (lb.) | Allowable ASD Shear Load V (lb.) | Drift at Allowable Shear (in.) | Anchor Tension at Allowable Shear ³ (lb.) |
| SSW12x10 | 1,000 | 570 | 0.52 | 8,345 | 725 | 0.67 | 11,300 |
| | 4,000 | 570 | 0.52 | 8,345 | 570 | 0.52 | 8,345 |
| | 7,500 | 360 | 0.33 | 4,930 | 360 | 0.33 | 4,930 |
| SSW15x10 | 1,000 | 1,110 | 0.53 | 13,150 | 1,145 | 0.54 | 13,690 |
| | 4,000 | 960 | 0.45 | 10,975 | 960 | 0.45 | 10,975 |
| | 7,500 | 715 | 0.34 | 7,775 | 715 | 0.34 | 7,775 |
| SSW18x10 | 1,000 | 1,860 | 0.53 | 18,030 | 2,360 | 0.67 | 25,545 |
| | 4,000 | 1,860 | 0.53 | 18,030 | 2,215 | 0.63 | 23,095 |
| | 7,500 | 1,860 | 0.53 | 18,030 | 2,035 | 0.57 | 20,395 |
| SSW21x10 | 1,000 | 3,045 | 0.50 | 25,905 | 3,265 | 0.56 | 28,795 |
| | 4,000 | 3,045 | 0.50 | 25,905 | 3,170 | 0.54 | 27,510 |
| | 7,500 | 2,780 | 0.45 | 22,780 | 2,780 | 0.47 | 22,780 |
| SSW24x10 | 1,000 | 3,835 | 0.50 | 27,100 | 4,205 | 0.55 | 30,920 |
| | 4,000 | 3,835 | 0.50 | 27,100 | 4,205 | 0.55 | 30,920 |
| | 7,500 | 3,790 | 0.49 | 26,660 | 3,790 | 0.49 | 26,660 |
| SSW15x11 | 1,000 | 975 | 0.58 | 12,625 | 1,015 | 0.60 | 13,285 |
| | 4,000 | 815 | 0.48 | 10,135 | 815 | 0.48 | 10,135 |
| | 7,500 | 550 | 0.33 | 6,470 | 550 | 0.33 | 6,470 |
| SSW18x11 | 1,000 | 1,635 | 0.58 | 17,295 | 2,075 | 0.73 | 24,280 |
| | 4,000 | 1,635 | 0.58 | 17,295 | 2,010 | 0.71 | 23,110 |
| | 7,500 | 1,635 | 0.58 | 17,295 | 1,730 | 0.61 | 18,645 |
| SSW21x11 | 1,000 | 2,485 | 0.58 | 22,325 | 2,990 | 0.70 | 29,230 |
| | 4,000 | 2,485 | 0.58 | 22,325 | 2,785 | 0.65 | 26,220 |
| | 7,500 | 2,305 | 0.54 | 20,205 | 2,305 | 0.54 | 20,205 |
| SSW24x11 | 1,000 | 3,475 | 0.57 | 27,055 | 3,845 | 0.63 | 31,285 |
| | 4,000 | 3,475 | 0.57 | 27,055 | 3,710 | 0.60 | 29,680 |
| | 7,500 | 3,205 | 0.52 | 24,260 | 3,205 | 0.52 | 24,260 |
| SSW15x12 | 1,000 | 815 | 0.63 | 11,280 | 905 | 0.70 | 12,855 |
| | 4,000 | 690 | 0.53 | 9,245 | 690 | 0.53 | 9,245 |
| | 7,500 | 390 | 0.30 | 4,905 | 390 | 0.30 | 4,905 |
| SSW18x12 | 1,000 | 1,450 | 0.63 | 16,605 | 1,845 | 0.80 | 23,220 |
| | 4,000 | 1,450 | 0.63 | 16,605 | 1,815 | 0.79 | 22,650 |
| | 7,500 | 1,435 | 0.62 | 16,380 | 1,435 | 0.62 | 16,380 |
| SSW21x12 | 1,000 | 2,210 | 0.63 | 21,485 | 2,755 | 0.79 | 29,555 |
| | 4,000 | 2,210 | 0.63 | 21,485 | 2,420 | 0.69 | 24,335 |
| | 7,500 | 1,900 | 0.54 | 17,690 | 1,900 | 0.54 | 17,690 |
| SSW24x12 | 1,000 | 3,150 | 0.63 | 26,710 | 3,540 | 0.71 | 31,575 |
| | 4,000 | 3,150 | 0.63 | 26,710 | 3,250 | 0.65 | 27,890 |
| | 7,500 | 2,705 | 0.54 | 21,855 | 2,705 | 0.54 | 21,855 |
| SSW18x13 | 1,000 | 1,335 | 0.68 | 16,580 | 1,695 | 0.87 | 23,105 |
| | 4,000 | 1,335 | 0.68 | 16,580 | 1,580 | 0.81 | 20,830 |
| | 7,500 | 1,180 | 0.60 | 14,195 | 1,180 | 0.60 | 14,195 |
| SSW21x13 | 1,000 | 1,985 | 0.68 | 20,765 | 2,520 | 0.87 | 29,200 |
| | 4,000 | 1,985 | 0.68 | 20,765 | 2,110 | 0.73 | 22,530 |
| | 7,500 | 1,555 | 0.53 | 15,300 | 1,555 | 0.53 | 15,300 |
| SSW24x13 | 1,000 | 2,830 | 0.68 | 25,795 | 3,275 | 0.79 | 31,755 |
| | 4,000 | 2,830 | 0.68 | 25,795 | 2,860 | 0.69 | 26,165 |
| | 7,500 | 2,280 | 0.55 | 19,545 | 2,280 | 0.55 | 19,545 |

1. Allowable shear loads and anchor tension forces are applicable to installation on concrete with minimum $f'_c = 2,500$ psi using the ASD basic (Section 1605.3.1) or the alternative basic (Section 1605.3.2) load combinations. Load values include evaluation of bearing stresses on the foundation and do not require further evaluation by the designer.

2. For seismic designs based on the 2018 IBC using $R = 6.5$. For other codes, use the seismic coefficients corresponding to light-frame bearing walls with wood structural panels or sheet steel panels.

3. Allowable shear, drift, and anchor tension values may be interpolated for intermediate height or axial loads.

4. High-strength anchor bolts are required for anchor tension forces exceeding the allowable load for standard-strength bolts tabulated on pp. 60–61. High-strength anchor bolts are required for SSW12 when the seismic overturning moment (seismic shear x shearwall height) exceeds 61,600 in.-lb. See pp. 60–67 for SSWAB anchor bolt information and anchorage solutions.

5. Tabulated anchor tension loads assume no resisting axial load. For anchor tension loads at design shear values and including the effect of axial load, refer to the Strong-Wall Selector web application or use the equations on p. 46. Drifts at lower design shear may be linearly reduced.

6. See p. 45 for allowable out-of-plane loads and axial capacities.

Standard Application on Concrete Foundations

Allowable Out-of-Plane Loads (psf) for Single-Story Walls on Concrete Foundations

| Model Width (in.) | Axial Load (lb.) | Nominal Height of Shearwall (ft.) | | | | | |
|-------------------|------------------|-----------------------------------|-----|-----|-----|-----|-----|
| | | 8 | 9 | 10 | 11 | 12 | 13 |
| 12 | 1,000 | 200 | 140 | 105 | N/A | N/A | N/A |
| | 4,000 | 150 | 105 | 70 | N/A | N/A | N/A |
| | 7,500 | 90 | 55 | 25 | N/A | N/A | N/A |
| 15 | 1,000 | 165 | 130 | 100 | 80 | 70 | N/A |
| | 4,000 | 130 | 95 | 70 | 50 | 40 | N/A |
| | 7,500 | 95 | 65 | 45 | 30 | 15 | N/A |
| 18 | 7,500 | 310 | 215 | 160 | 120 | 90 | 70 |
| 21 | 7,500 | 260 | 185 | 135 | 100 | 70 | 50 |
| 24 | 7,500 | 275 | 195 | 135 | 105 | 80 | 65 |

1. Loads shown are at ASD level in pounds per square foot (psf) of wall with no further increase in load allowed.
2. Axial load denotes maximum gravity load permitted on entire panel acting in combination with the out-of-plane load.
3. Load considers a deflection limit of $h/240$.
4. Values are applicable to either the ASD basic or alternative basic load combinations.
5. Allowable out-of-plane loads for the 12- and 15-inch walls may be linearly interpolated between the axial loads shown.
6. Table loads apply only to single-story walls on concrete foundations.
7. N/A =Not Applicable.

Axial Capacities for Single-Story Walls on Concrete Foundations

| Model Width (in.) | Compression Capacity with No Lateral Loads (lb.) | | | | | | | |
|-------------------|--|--------|--------|--------|--------|--------|--------|--------|
| | Nominal Height of Shearwall (ft.) | | | | | | | |
| | 7 | 7.4 | 8 | 9 | 10 | 11 | 12 | 13 |
| 12 | 20,200 | 19,000 | 17,200 | 14,500 | 11,800 | N/A | N/A | N/A |
| 15 | 25,300 | 24,200 | 22,600 | 20,000 | 17,400 | 14,900 | 12,600 | N/A |
| 18 | 42,500 | 40,400 | 37,500 | 32,900 | 28,400 | 24,100 | 20,200 | 17,200 |
| 21 | 43,700 | 41,100 | 37,500 | 32,000 | 26,700 | 22,000 | 18,400 | 15,700 |
| 24 | 51,600 | 48,800 | 44,800 | 38,700 | 32,900 | 27,400 | 22,900 | 19,500 |

1. Compression capacity is lesser of wall buckling capacity or 2,500 psi concrete bearing limit.
2. Compression capacity of wall assumes no lateral loads present. See allowable in-plane or out-of-plane load tables for combined lateral and axial loading conditions.
3. Values are applicable to either the ASD basic or alternative basic load combinations.
4. Table loads apply only to single-story walls on concrete foundations.
5. N/A =Not Applicable.

Allowable Tension Loads for Walls with Wood Jamb Stud

| Model Width (in.) | Tension Capacity per Jamb Stud (lb.) | | | | | | | |
|-------------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| | Nominal Height of Shearwall (ft.) | | | | | | | |
| | 7 | 7.4 | 8 | 9 | 10 | 11 | 12 | 13 |
| 12 | 1,535 | 1,535 | 1,845 | 2,150 | 2,500 | N/A | N/A | N/A |
| 15 | 1,845 | 2,150 | 2,460 | 2,500 | 2,500 | 3,070 | 3,685 | N/A |
| 18 | 1,845 | 1,845 | 2,150 | 2,500 | 2,500 | 3,380 | 3,685 | 3,980 |
| 21 | 1,845 | 1,845 | 2,150 | 2,500 | 2,500 | 3,070 | 3,685 | 3,980 |
| 24 | 1,845 | 1,845 | 2,150 | 2,500 | 2,500 | 3,070 | 3,685 | 3,980 |

1. Allowable tension load is based on capacity of the lesser of the connection between the stud and the steel shearwall or stud tension capacity. The capacity of the SSW wall anchor bolt and anchorage to the foundation must be adequate to transfer the additional tension.
2. Loads include a 1.60 load duration increase for wood subjected to wind or earthquake. Reductions for other load durations must be taken according to the applicable code.
3. N/A =Not Applicable.