



Material Properties

A1003 / A1003M ST50H [ST340H], Grade 50 (340), 50ksi (340MPa) minimum yield strength, 65ksi (450 MPa) minimum tensile strength, G-60 (Z180) hot-dipped galvanized coating; or equivalent.

| Flat Strap Product Profile (For StiffWall®) | | | | | | |
|---|-----------|-------|----------------------|--------------------------------------|--------------------|--------|
| Section | Width (D) | Gauge | Design Thickness (t) | Min. Steel Thickness ($t_{(min)}$) | Area | Weight |
| | (in) | | (in) | (in) | (in ²) | lbs/ft |
| FS400-54, 50 ksi | 4 | 16 | 0.0566 | 0.0538 | 0.226 | 0.770 |
| FS600-54, 50 ksi | 6 | 16 | 0.0566 | 0.0538 | 0.340 | 1.156 |
| FS800-54, 50 ksi | 8 | 16 | 0.0566 | 0.0538 | 0.453 | 1.541 |
| FS800-68, 50 ksi | 8 | 14 | 0.0713 | 0.0677 | 0.570 | 1.941 |
| FS1000-68, 50 ksi | 10 | 14 | 0.0713 | 0.0677 | 0.713 | 2.426 |
| Flat Strap Product Profile (For Bridging) | | | | | | |
| FS200-43, 50 ksi | 2 | 18 | 0.0451 | 0.0428 | 0.090 | 0.307 |
| FS300-43, 50 ksi | 3 | 18 | 0.0451 | 0.0428 | 0.135 | 0.460 |
| FS300-54, 50 ksi | 3 | 16 | 0.0566 | 0.0538 | 0.170 | 0.578 |

Table Notes:

- Section properties and capacities are calculated in accordance with AISI S100.
- Structural framing is produced to meet or exceed ASTM A653 and A1003.
- Non-Structural framing is produced to meet or exceed ASTM C645, A653, and A1003.
- Galvanized sheet steel meets or exceeds requirements of ASTM A924 & A1003.

Order Information for StiffWall Flat Strap

The Selection of flat strap for StiffWall® is simplified to 6 strap types, with load capacity factored using standard 12ga (97mil) strap track (see Step-By-Step Design Procedure on TSN's StiffWall product page for Allowable Flat Strap Capacity Chart). Flat Strap is cut to length with square ends, and will need to be cut to final length in the field. To determine the length of the flat straps, follow these simple steps:

1. Find the width (A) and the height (B) of the StiffWall.
2. Then, use the following formula to determine the length of the strap: $A^2 + B^2 = C^2$
3. Next, take the square root of C, round up to the nearest whole number and add 1

This will result in a length in feet that you can work with. If C equals a whole number, you may want to add 2 to make sure the length is enough.

Example: $8'$ wall height with a width of $16'$ would look like this: $(8 \times 8) + (16 \times 16) = \sqrt{320} = 17.88$
Round up to $18'$ and add $1'$ for a strap length of $19'$.

Some points to remember concerning Flat Strap:

- Strap must be pulled tight after a gravity load above has been applied. TightStrap® tool can be used to flatten the strap and put minor tension force into it.
- Flat strap cannot be installed, then un-installed by releasing the screws to the strap track, and then re-installed with screws again in the same screw holes. Either a new piece of strap is required, or the exposed edge of the strap needs to be welded to the strap track with an approved weld design.
- It is recommended not to fasten the strap to the infill studs between the columns. However, typical or occasional attachment of sheathing and/or resilient channel to the infill studs through the strap is acceptable.
- Straps should not be spliced without an approved design.
- Four (4) pieces of strap are required in each StiffWall (If there are 10 StiffWall shear walls, 40 pieces of flat strap will be necessary).