

# FSB Bypass Framing Fixed-Clip Strut Connector

The FSB connector is the fixed-clip version of our popular SSB slide-clip strut connector. The FSB is commonly used at the bottom flange of a steel beam to accommodate large standoff distances for bypass curtain-wall studs.

**Material:** 54 mil (16 ga.)

**Finish:** Galvanized (G90)

**Installation:**

- Use the specified type and number of anchors.
- Use the specified type and number of screw fasteners to the stud.
- If the FSB intrudes on interior space, it can be trimmed. The trimmed part shall allow an edge distance of  $\frac{1}{2}$ " or greater from the center of the nearest anchor to the end of the trimmed part.

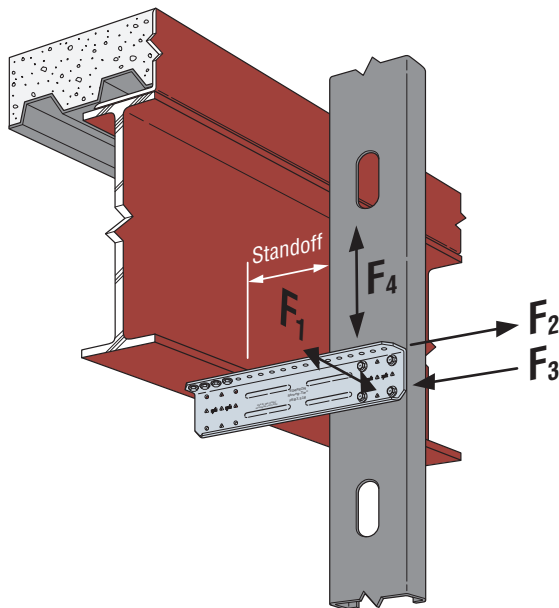
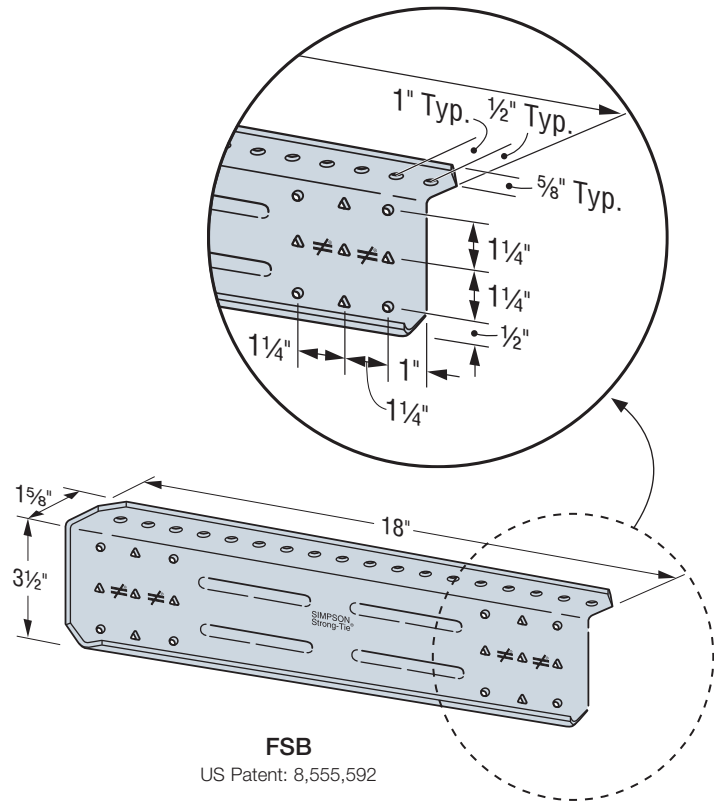
**Codes:** See p. 13 for Code Reference Key Chart

**Ordering Information:**

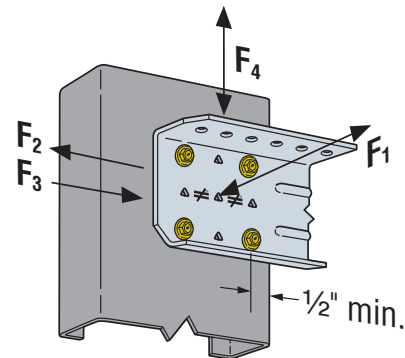
FSB3.518-R25 is a box of 25 connectors.

**NEED SHORTER OR LONGER STRUT LENGTHS?**

Try the HYS hybrid strut. HYS strut comes in 12", 15", 24" and 30" lengths. Reference p. 46 for HYS fixed-clip load chart.



Typical FSB3.518 Installation



FSB Installation with the Min. Number of Fasteners

# FSB Bypass Framing Fixed-Clip Strut Connector

Rigid Connectors

## FSB Allowable Connector Loads (lb.)

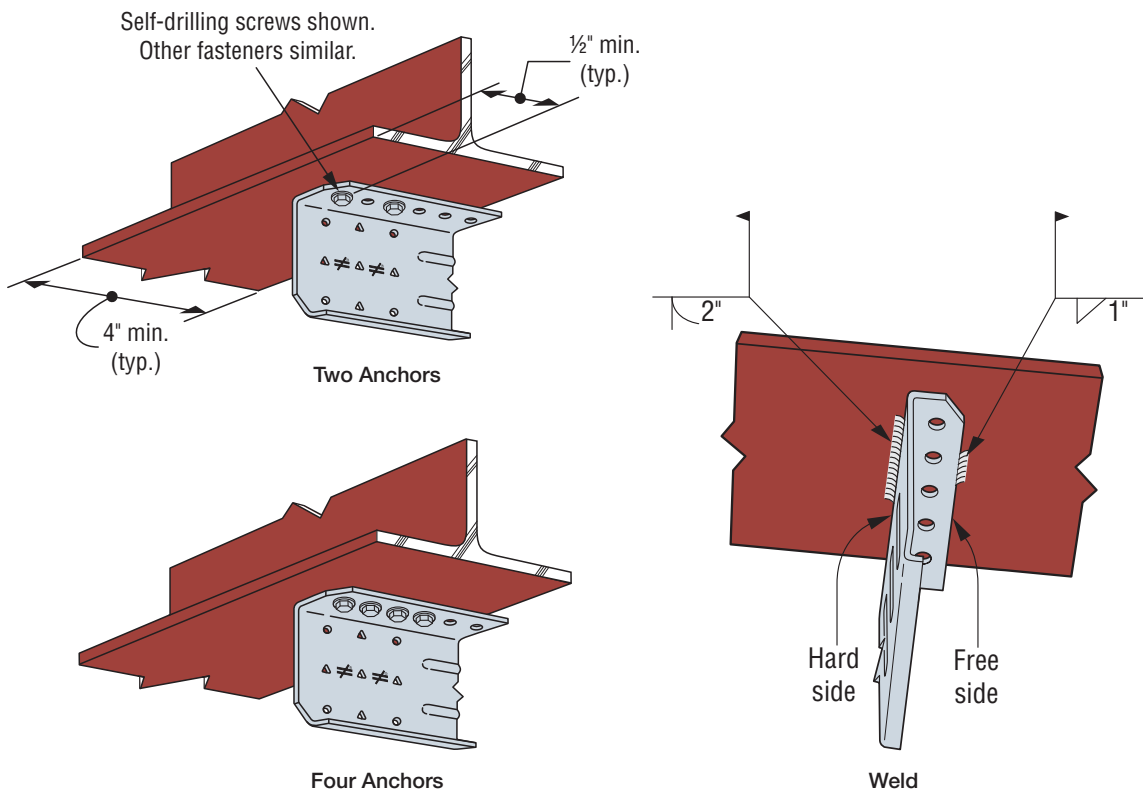
| Model No. | Connector Material Thickness mil (ga.) | Min./Max. | No. of #10–16 Screws | Stud Thickness              |                |                |                             |                             |                |                |                             |                             |                |                |                             | Code Ref. |
|-----------|--|-----------|----------------------|-----------------------------|----------------|----------------|-----------------------------|-----------------------------|----------------|----------------|-----------------------------|-----------------------------|----------------|----------------|-----------------------------|-----------|
|           |  |           |                      | 33 mil (20 ga.)             |                |                |                             | 43 mil (18 ga.)             |                |                |                             | 54 mil (16 ga.)             |                |                |                             |           |
|           |  |           |                      | F <sub>1</sub> <sup>4</sup> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> <sup>5</sup> | F <sub>1</sub> <sup>4</sup> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> <sup>5</sup> | F <sub>1</sub> <sup>4</sup> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> <sup>5</sup> |           |
| FSB3.518  | 54 (16)                                | Min.      | 4                    | 120                         | 705            | 705            | 160                         | 150                         | 1,050          | 1,050          | 210                         | 145                         | 1,670          | 1,615          | 210                         | —         |
|           |  | Max.      | 9                    | 155                         | 1,590          | 1,340          | 160                         | 200                         | 2,365          | 2,180          | 210                         | 215                         | 2,670          | 2,180          | 260                         |           |

- For additional important information, see General Information and Notes on p. 26.
- FSB Allowable Connector Loads are also limited by the FSB Allowable Anchorage Loads table. Use the minimum value from the connector and anchorage load tables as applicable.
- Min. fasteners quantity and tabulated values — fill round holes; max. fasteners quantity and tabulated values — fill round and triangle holes.
- Tabulated F<sub>1</sub> loads are based on assembly tests with the load through the centerline of stud. Tested failure modes were due to screw pullout; therefore compare F<sub>1</sub> against F<sub>p</sub> calculated per ASCE 7-16 Chapter 13 with a<sub>p</sub> = 1.25 and R<sub>p</sub> = 1.0.
- Tabulated F<sub>4</sub> values are controlled by 1/8" deformation limit. The connector strength load in the F<sub>4</sub> direction is 550 lb.
- Maximum standoff for FSB is 11" with two anchors to primary structure and 10" with four anchors to primary structure.

## FSB Allowable Anchorage Loads (lb.)

| Anchorage Type   | No. of Anchors | F <sub>1</sub> | F <sub>2</sub> and F <sub>3</sub> | F <sub>4</sub> |
|--|----------------|----------------|-----------------------------------|----------------|
| #12–24 self-drilling screws  | 2              | 270            | 1,250                             | 550            |
|  | 4              | 270            | 2,500                             | 550            |
| Simpson Strong-Tie®<br>0.157" x 5/8" powder-actuated fasteners<br>PDPAT-62KP | 2              | —              | 820                               | —              |
|  | 4              | 270            | 1,640                             | 550            |
| Weld   | Hard side: 2"  | 270            | 2,455                             | 550            |
|  | Free side: 1"  |                |                                   |                |

- Allowable loads for #12–24 self-drilling screws and PDPAT powder-actuated fasteners are based on installation in minimum 3/16" thick structural steel with F<sub>y</sub> = 36 ksi. It is the responsibility of the designer to select the proper length fasteners.
- Allowable loads for welded connections require E70XX electrodes with a minimum throat size equal to the clip thickness. Welding shall comply with AWS D1.3. Welding galvanized steel may produce harmful fumes; follow proper welding procedures and precautions.
- Allowable loads are for anchorage only. It is the responsibility of the designer to verify the strength and stability of the structure for loads imposed by the cold-formed steel framing connections.



FSB Anchor Layout