

The HTT22 is a single-piece formed tension tie—no rivets, and a 4-ply formed seat which won't unfold during loading. No washers required. The LTT19 Light Tension Tie is designed for 2x joists or purlins and the LTT20B is for nail- or bolt-on applications. The 3" nail spacing makes the LTT20B suitable for wood I-joists if 10dx1½" nails are substituted for the specified 16d's.

The LTTI31 is designed for wood chord open web truss attachments to concrete or masonry walls.

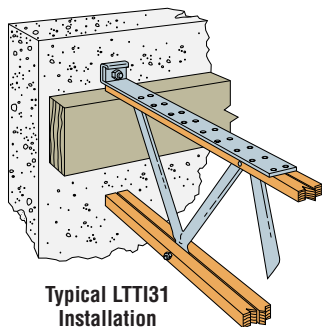
**MATERIAL:** See table

**FINISH:** Galvanized. May be ordered HDG; check factory.

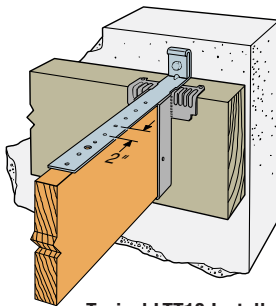
**INSTALLATION:** • Use all specified fasteners. See General Notes.

- Use the specified number and type of nails to attach the strap portion to the top or side of purlin or beam (minimum 4x width (2-2x4 or 4x4), except LTT19). Bolt the base to the wall or foundation with a suitable anchor; see table for the required bolt diameter.
- Do not install LTT and MTT tension ties raised.
- **The HTT22 can be substituted for the MTT28B.**
- See Epoxy-Tie Adhesive System, pages 22 for tested, load-rated epoxies for anchor bolt options.
- **To tie double 2x members together, the designer must determine the fasteners required to bind members to act as one unit without splitting the wood.**
- **See Simpson Anchor Systems for tested, load-rated anchors and request T-Anchorspec for more information.**

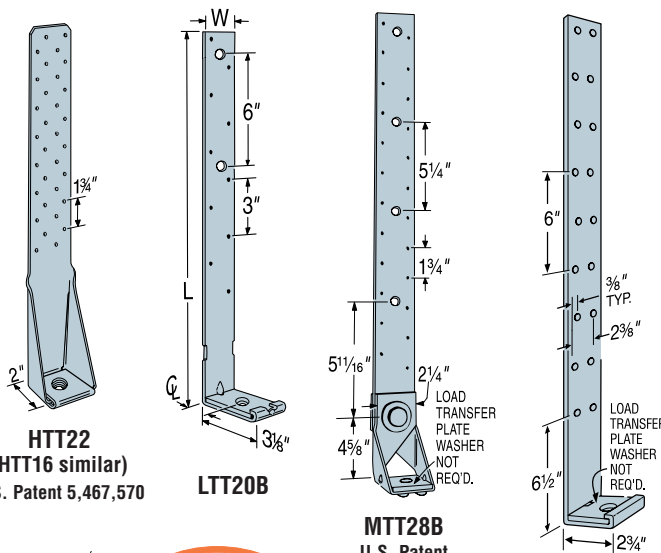
**CODES:** See page 10 for Code Listing Key Chart.



Typical LTTI31 Installation



Typical LTT19 Installation (LTT20B similar)

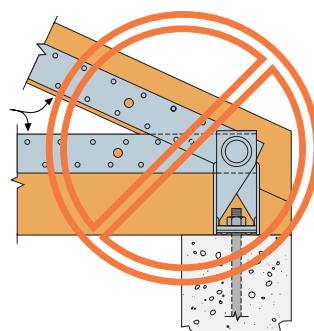


**HTT22**  
(HTT16 similar)  
U.S. Patent 5,467,570

**LTT20B**

**MTT28B**  
U.S. Patent 4,744,192

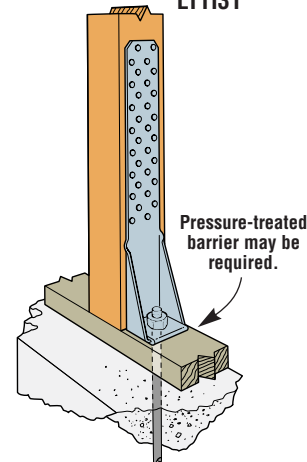
**LTTI31**



**DO NOT MODIFY THE MTT28B.**  
Do not rotate the MTT28B's strap around the rivet.

The strap must be in line vertically with the body of the holddown to achieve table loads.

See Girder Tiedown Connectors on page 130 for installation solutions.



Typical HTT22 Installation as a Holddown

**For holddowns, per ASTM test standards, anchor bolt nuts should be finger-tight plus 1/8 to 1/2 turn with a wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut.**

Available with additional corrosion protection. Check with factory.

| Model No.           | Material (Ga) |       | Dimensions |     |    | Seat Thickness | Fasteners    |              |       | Avg Ulf Tension | Allowable Tension Loads DF/SP |       |       |       | Allowable Tension Loads - SPF/HF |      | Deflection at Highest Allowable Design Load | Code Ref.      |                 |
|---------------------|---------------|-------|------------|-----|----|----------------|--------------|--------------|-------|-----------------|-------------------------------|-------|-------|-------|----------------------------------|------|---|----------------|-----------------|
|                     | Strap         | Plate | W          | L   | C  |                | Anchor Bolts | Nails        | Bolts |                 | (133)                         |       | (160) |       |                                  |      |   |                |                 |
|                     |               |       |            |     |    |                |              |              | Qty   |                 | Dia                           | Nails | Bolts | Nails | Nails                            |      |   |                |                 |
| LTT19               | 16            | 3     | 1¾         | 19½ | 1½ | 5/16           | ¾            | 8-16d Sinks  | —     | —               | 1205                          | —     | 1350  | —     | 1085                             | 1305 | 0.107                                       | 2, 40, 82, 121 |                 |
| LTT20B <sup>6</sup> | 12            | 3     | 2          | 19¾ | 1½ | 5/16           | ½, 5/8 or ¾  | 10-16d       | 2     | ½               | 8733                          | 1750  | 1220  | 1750  | 1460                             | 1675 | 1750  | 0.164          |                 |
| LTTI31              | 18            | 3     | 3¾         | 31  | 1½ | ¼              | 5/8          | 18-10dx1½    | —     | —               | 7770                          | 2185  | —     | 2310  | —                                | 1985 | 2310  | 0.125          | 6, 40, 82       |
| HTT16               | 11            | —     | 2½         | 16  | 1½ | 7/16           | 5/8          | 18-16d       | —     | —               | 13150                         | 3480  | —     | 4175  | —                                | 3080 | 3695  | 0.037          | 30, 99, 122     |
| HTT22               | 11            | —     | 2½         | 22  | 1½ | 7/16           | 5/8          | 32-16d Sinks | —     | —               | 13150                         | 5250  | —     | 5260  | —                                | 4670 | 5250  | 0.087          | 40, 97, 99, 122 |
| MTT28B              | 12            | 7     | 2½         | 27  | 1½ | 3/8            | 5/8 or ¾     | 24-16d       | 4     | ½               | —                             | 4455  | 2150  | 4455  | 2725                             | 4140 | 4455  | 0.125          | 40              |

1. Allowable loads for HTT are based on the lower of the 2001 NDS fastener values or the ultimate load on a steel test jig divided by 2.5.
2. 16d sinks (9 ga x 3¼") or 10d commons may be substituted for the specified 16d commons at 0.85 of the table loads.
3. The designer must specify anchor bolt type, length and embedment.
4. Allowable loads have been increased 33% and 60% for earthquake or wind loading with no further increase allowed; reduce where other loads govern.

5. Bolt values are based on a minimum lumber thickness of 1½".
6. If a ½" or 5/8" anchor bolt is used for the LTT20B, add a standard cut washer to the seat. No additional washer is required for a ¾" anchor bolt. See table for appropriate anchor bolt sizes.
7. HTT22 holddown installed raised off the plate has a reduced load of 5190 lbs. HTT16 installed raised off the plate will achieve the table loads.