LTT/MTT/HTT *Tension Ties*

SIMPSON Strong-Tie®

Tension ties offer a solution for resisting tension loads that is fastened with nails. The entire line of tension ties has been tested and evaluated to the requirements of AC155.

NEW! The HTT4 and HTT5 are the latest generation of tension ties. They feature an optimized nailing pattern which results in better performance with less deflection. Designed to meet new code standards, the HTT4 and HTT5 offer higher loads than their predecessors the HTT16 and HTT22. For an added benefit, the HTT5 installs with 6 fewer nails than the HTT22.

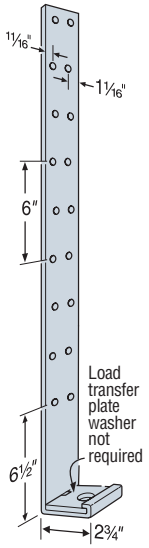
The LTT19 Light Tension Tie is designed for 2x joists or purlins and the LTT20B is for nail- or bolt-on applications. The 3" nail spacing makes the LTT20B suitable for wood I-joists with 10dx1½. The LTTI31 is designed for wood chord open web truss attachments to concrete or masonry walls and may also be installed vertically on a minimum 2x6 stud.

MATERIAL: See table

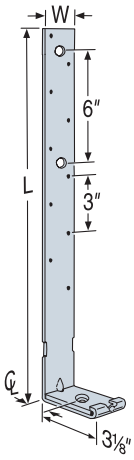
FINISH: Galvanized. May be ordered HDG; contact Simpson Strong-Tie.

INSTALLATION:
- Use all specified fasteners. See General Notes.
- For use in vertical and horizontal applications.
- To tie multiple 2x members together, the designer must determine the fasteners required to join members to act as one unit without splitting the wood. See page 20 for SDS values.
- Refer to technical bulletin T-ANCHORSPEC for post-installed anchorage solutions *(see page 191 for details)*.

CODES: See page 12 for Code Reference Key Chart.



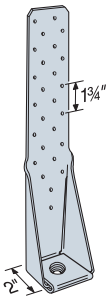
LTTI31



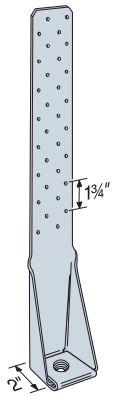
LTT20B
(LTT19 similar)

Available Early 2009

NEW



HTT5
(HTT4 similar)
U.S. Patent 5,467,570



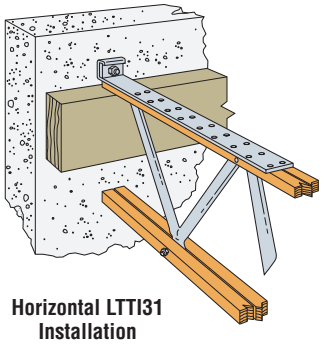
HTT22
(HTT16 similar)
U.S. Patent 5,467,570

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

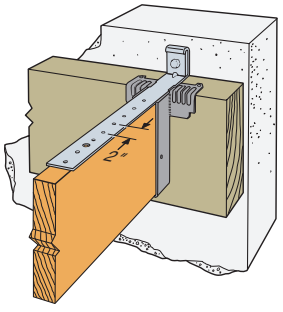
Model No.	Material (Ga)		Dimensions			Seat Thickness	Fasteners		Allowable Tension Loads (160)		Deflection at Highest Allowable Load	Code Ref.
	Strap	Plate	W	L	℄		Anchor Bolts	Fasteners	DF/SP	SPF/HF		
LTT19[4]	16	3	1¾	19⅛	1⅜	5⁄16	½, ⅝ or ¾	8-10dx1½	1310	1125	0.180	IP2, F4
								8-10d	1340	1150	0.157	
LTT20B[4]	12	3	2	19¾	1½	5⁄16	½, ⅝ or ¾	10-10dx1½	1355	1165	0.195	
								10-10d	1500	1290	0.185	
								2-½" Bolt	1625	1400	0.183	
LTTI31[5]	18	3	3¾	31	1⅜	¼	⅝	18-10dx1½	1350	1160	0.193	
MTT28B	**Deleted — See HTT5 or HTT22**											
NEW HTT4	11	—	2½	12⅜	1⅜	7⁄16	⅝	18-10dx1½	3610	3105	0.086	IP2, F4
								18-16dx2½	4235	3640	0.123	
HTT16	11	—	2½	16	1⅜	7⁄16	⅝	18-16dx2½	3955	3400	0.124	
NEW HTT5	11	—	2½	16	1⅜	7⁄16	⅝	26-10dx1½	4350	3740	0.120	
								26-10d	4670	4275	0.116	
								26-16dx2½	5090[7]	4375	0.135	
HTT22	11	—	2½	22	1⅜	7⁄16	⅝	32-10d	4165[7]	3580	0.152	

1. The Designer must specify anchor bolt type, length and embedment. See SB Anchor Bolts *(page 27)*. Refer to technical bulletin T-ANCHORSPEC for retrofit anchor solutions *(see page 191 for details)*.
2. Allowable loads have been increased for wind or earthquake load durations with no further increase allowed; reduce where other load durations govern.
3. Allowable loads are based on a minimum lumber thickness of 3".
4. If a ½" or ⅝" anchor bolt is used for the LTT19 or 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.
5. **If the base of the LTTI31 is installed flush with a concrete or masonry wall, then the allowable load is 2285 lbs.**
6. Tension values are valid for holdowns flush or raised off of sill plate.
7. **Allowable tension load with a bearing plate washer BP⅝-2 *(sold separately)* is 5395 lbs. for HTT5 and 4265 lbs. for HTT22.**
8. Deflection at Highest Allowable Tension Load includes fastener slip, holdown elongation, and anchor bolt elongation (L = 6"). Additional elongation of anchor bolts shall be accounted for by the Designer when holdowns are raised higher than 6".
9. Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers. Values in the tables reflect installation into the wide face. See technical bulletin T-SCLCOLUMN for values on the narrow face (edge) *(see page 191 for details)*.
10. **NAILS:** 16dx2½ = 0.162" dia. x 2½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.

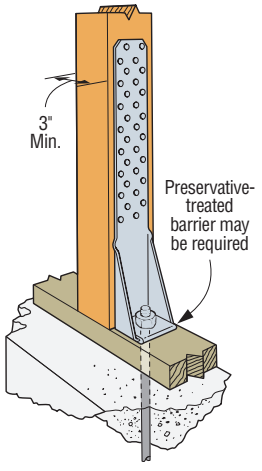
For tension ties, per ASTM test standards, anchor bolt nut should be finger-tight plus ⅓ to ½ turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used.



Horizontal LTTI31 Installation



Horizontal LTT19 Installation
(LTT20B similar)



Vertical HTT22 Installation