

MTSM/HTSM

Twist Straps

The MTSM and HTSM offer high-strength truss-to-masonry connections.

Material: MTSM — 16 gauge;
HTSM — 14 gauge

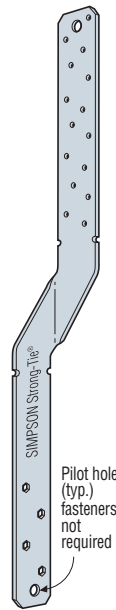
Finish: Galvanized

Installation:

- Use all specified fasteners; see General Notes
- Installs with hex-head Titen Turbo™ screws
- Attach to either side of grouted concrete block with a minimum one #5 rebar horizontal
- MTSM and HTSM can be field bent once to a 45° angle
- Products shall be installed such that Titen Turbo screws are not exposed to the exterior environment.

Codes: See p. 13 for Code Reference Key Chart

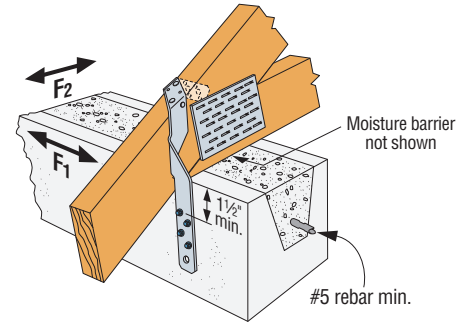
Web Applications:
Visit app.strongtie.com/rws to access our Roof-to-Wall Selector web application.



HTSM20
(MTSM20 similar)



MTSM16
(HTSM16 similar)



Typical MTSM20 Installation
(HTSM20 similar)

Model No.	L (in.)	Fasteners (in.)			DF/SP Allowable Loads	SPF/HF Allowable Loads	DF/SP/SPF/HF Allowable Lateral Loads		Code Ref.
		Truss/Rafter	GFCMU Titen Turbo	Concrete Titen Turbo			F ₁ (160)	F ₂ (160)	
MTSM16	16	(7) 0.148 x 1 1/2	(4) 1/4 x 2 1/4	(4) 1/4 x 1 3/4	830	715	120	90	FL
MTSM20	20	(7) 0.148 x 1 1/2	(4) 1/4 x 2 1/4	(4) 1/4 x 1 3/4	830	715			
HTSM16	16	(8) 0.148 x 1 1/2	(4) 1/4 x 2 1/4	(4) 1/4 x 1 3/4	1,110	955			
HTSM20	20	(10) 0.148 x 1 1/2	(4) 1/4 x 2 1/4	(4) 1/4 x 1 3/4	1,110	955			

1. Loads have been increased for wind or earthquake loading, with no further increase allowed. Reduce where other loads govern.
2. Twist straps do not need to be wrapped over the truss to achieve the allowable load.
3. Minimum edge distance for Titen Turbo screw is 1 1/2".
4. See p. 367 for Titen Turbo screw information.
5. Concrete shall have a minimum compressive strength of f_c = 2,500 psi.
6. Grout-filled CMU (GFCMU) shall have a minimum compressive strength of f'_m = 1,500 psi.
7. Lateral loads apply when the first seven nail holes on the truss/rafter near the bend line are filled. Any other fasteners required can be installed in any open hole.
8. **Fasteners:** Nail dimensions are listed diameter by length. Titen Turbo screws are Simpson Strong-Tie concrete and masonry screws (hex-head model required). See pp. 23–24 for fastener information.

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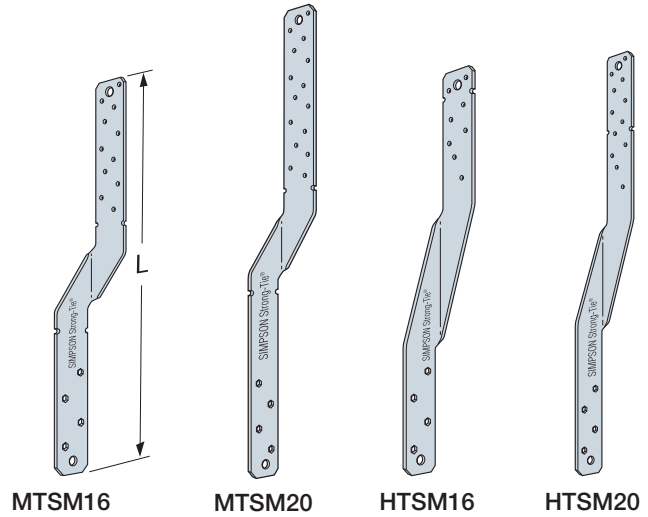
Material: See table.

Finish: Galvanized (G90). Some products available in stainless steel and ZMAX®; see Corrosion Information, pp. 19–23.

Installation:

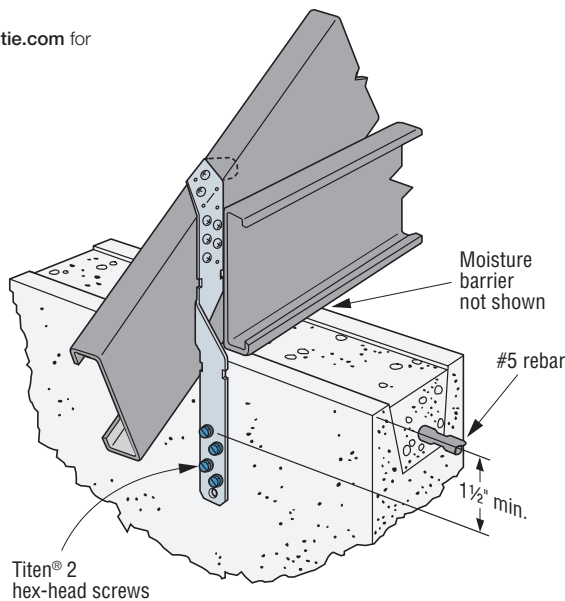
- Use all specified fasteners; see General Notes.
- May be attached to either side of a grouted block wall. A minimum of one #5 horizontal rebar shall be installed in the top course of this wall.

Codes: See p. 13 for Code Reference Key Chart



Model No.	Connector Material Thickness mil (ga.)	L (in.)	Fasteners ⁶				Allowable Load 33 mil (20 ga.) (lb.)	Code Ref.	
			Rafter/Stud/Joist Thickness			CMU ⁵			Concrete ^{3,5}
			33 mil (20 ga.)	43 mil (18 ga.)	54 mil (16 ga.)				
MTSM16	54 (16)	16	(5) #10	(4) #10	(3) #10	(4) ¼" x 2¼" Titen Turbo™	(4) ¼" x 1¾" Titen Turbo	830	—
MTSM20		20	(5) #10	(4) #10	(3) #10	(4) ¼" x 2¼" Titen Turbo	(4) ¼" x 1¾" Titen Turbo	830	
HTSM16	68 (14)	16	(7) #10	(5) #10	(3) #10	(4) ¼" x 2¼" Titen Turbo	(4) ¼" x 1¾" Titen Turbo	1,110	
HTSM20		20	(7) #10	(5) #10	(3) #10	(4) ¼" x 2¼" Titen Turbo	(4) ¼" x 1¾" Titen Turbo	1,110	

1. All straps have additional fastener holes.
2. Twist straps do not have to be wrapped over the truss to achieve the load.
3. Minimum edge distance in concrete block for Titen Turbo screws is 1½".
4. Straps can be installed on the inside face of the wall.
5. Min. $f'_m = 1,500$ psi and $f'_c = 2,500$ psi.
6. See the current *Fastening Systems* catalog at strongtie.com for more information on Simpson Strong-Tie fasteners.



Typical MTSM20 Installation