

**TBE Truss Bearing Enhancers**

One size works with any number of girder plys. The TBE transfers load from the truss or girder to plates for bearing-limited conditions, and provides exceptional uplift capacity. Replaces nail-on scabs that provide lower load transfer, or in some cases, an additional ply when needed for bearing.

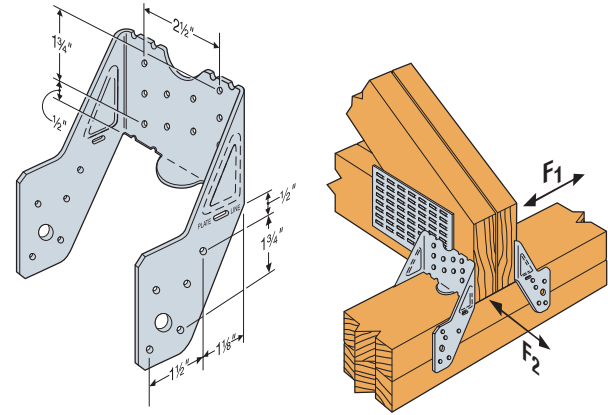
The table lists factored resistances for TBE4 used on 2x4 and TBE6 used on 2x6 top plates. The tables give the different resistances calculated for TBE with and without wood bearing. See page 141 for Alternate Installation.

**MATERIAL:** 18 gauge

**FINISH:** Galvanized. See Corrosion Information, page 10-11.

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

- TBE must be installed in pairs.
- Top plate size is 2x4 for TBE4, 2x6 for TBE6. Use alternate installation for TBE4 and TBE6 on larger plates or pre-sheathed walls.



**TBE4**  
(TBE6 similar)  
U.S. Patent 5,109,646  
Canada Patent 2,044,440

Two TBE installed with two ply girder truss

**TBE FASTENER SCHEDULE**

Model No.	Truss Plys	Fasteners per each TBE	
		Rafter	Plate
TBE4	1	10-10dx1½	10-10dx1½
	2 or more	10-10d	10-10d
TBE6	1	10-10dx1½	10-10dx1½
	2 or more	10-10d	10-10d

**NAILS:**  
10d = 0.148" dia. x 3" long,  
10dx1½ = 0.148" dia. x 1½" long.  
See page 16-17 for other nail sizes and information.

Model No.	No. of Truss Plys	Fasteners		TBE Only Factored Resistance				TBE and Wood Bearing Factored Resistance and Total Bearing Length (TBL) <sup>1,4,8</sup>	
		Truss	Plate	Uplift (K <sub>D</sub> =1.15)	Normal (K <sub>D</sub> =1.00)	Lateral (K <sub>D</sub> =1.15)		Normal <sup>2</sup> (K <sub>D</sub> =1.00)	TBL <sup>2</sup>
						Parallel to Plates (F <sub>1</sub> )	Perpendicular to Plates (F <sub>2</sub> )		
				lbs	lbs	lbs	lbs	lbs	in
				kN	kN	kN	kN	kN	
<b>D.Fir-L</b>									
TBE4	1	20-10dx1½	20-10dx1½	1610	3660	755	1450	7920	6.50
				7.17	16.30	3.36	6.46	35.28	
	2	20-10d	20-10d	1610	3660	755	1450	12180	5.00
				7.17	16.30	3.36	6.46	54.25	
	3	20-10d	20-10d	1610	3660	755	1450	16445	4.50
				7.17	16.30	3.36	6.46	73.25	
	4	20-10d	20-10d	1610	3660	755	1450	20705	4.25
				7.17	16.30	3.36	6.46	92.23	
TBE6	1	20-10dx1½	20-10dx1½	1760	3660	490	1745	10355	8.50
				7.84	16.30	2.18	7.77	46.12	
	2	20-10d	20-10d	1760	3660	490	1745	17050	7.00
				7.84	16.30	2.18	7.77	75.95	
	3	20-10d	20-10d	1760	3660	490	1745	23750	6.50
				7.84	16.30	2.18	7.77	105.79	
	4	20-10d	20-10d	1760	3660	490	1745	30445	6.25
				7.84	16.30	2.18	7.77	135.61	
<b>S-P-F</b>									
TBE4	1	20-10dx1½	20-10dx1½	1610	2620	615	1450	5845	6.34
				7.17	11.67	2.74	6.46	26.04	
	2	20-10d	20-10d	1610	2620	615	1450	9070	4.92
				7.17	11.67	2.74	6.46	40.40	
	3	20-10d	20-10d	1610	2620	615	1450	12300	4.44
				7.17	11.67	2.74	6.46	54.79	
	4	20-10d	20-10d	1610	2620	615	1450	15525	4.21
				7.17	11.67	2.74	6.46	69.15	
TBE6	1	20-10dx1½	20-10dx1½	1760	2620	490	1525	7690	8.34
				7.84	11.67	2.18	6.79	34.25	
	2	20-10d	20-10d	1760	2620	490	1525	12760	6.92
				7.84	11.67	2.18	6.79	56.84	
	3	20-10d	20-10d	1760	2620	490	1525	17830	6.44
				7.84	11.67	2.18	6.79	79.42	
	4	20-10d	20-10d	1760	2620	490	1525	22900	6.21
				7.84	11.67	2.18	6.79	102.00	

1. Factored resistances are for two TBE's only. Wood factored bearing resistance may be added as shown in the table.  
 2. Factored bearing resistances shown assume  $\phi F_{Cp}=812$  psi (5.60 MPa) for D.Fir-L and 614 psi (4.24 MPa) for S-P-F. See section 4.4.4 TPIC 2007 for required bearing reinforcement when compression loads are applied to both sides of truss member.  
 3. Factored uplift resistances have been increased 15% for short term load duration with no further increase allowed; reduce resistances by 15% for standard term load duration.

4. Factored resistances are determined by nail shear calculations or tests of the metal connectors. The attached wood members must be designed to withstand the loads imposed by the nails.  
 5. Factored perpendicular to plate resistances are reduced for alternate installation.  
 6. Factored parallel to plate resistances are not reduced for alternate installation.  
 7. Use lower of top plate or wood truss species.  
 8. Total bearing length, TBL, equals the plate width plus simulated bearing length provided by the TBE. TBE4 = 3½" plate width; TBE6 = 5½" plate width.

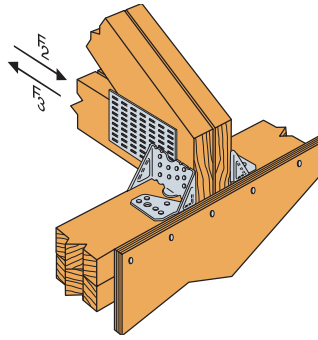
**TBE** Truss Bearing Enhancers

**ALTERNATE INSTALLATION**

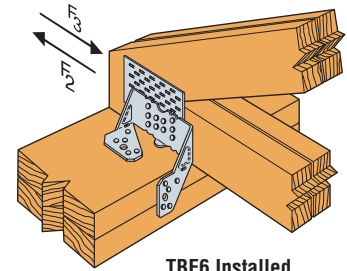
(See illustrations at right)

Model No.	Alternate Installation Factored Resistance <sup>5,6</sup>			
	D. Fir-L ( $K_D=1.15$ )		S-P-F ( $K_D=1.15$ )	
	F <sub>2</sub>	F <sub>3</sub>	F <sub>2</sub>	F <sub>3</sub>
	lbs	lbs	lbs	lbs
TBE4	1500	490	1075	350
	6.68	2.18	4.79	1.56
TBE6	1500	490	1075	350
	6.68	2.18	4.79	1.56

1. Alternate Installation Factored Normal Resistances are 0.80 of the TBE only tabulated resistances on page 140.
2. See table footnotes on opposite page.



Pre-sheathed shearwall. Bend tab along slot and nail one leg to top of the plate.



TBE6 Installed on Double 2x8 Top Plate

**TC** Truss Connectors

The TC truss connector is an ideal connector for scissor trusses and can allow horizontal movement up to 1/4". The TC also attaches plated trusses to top plates or sill plates to resist uplift forces. Typically used on one or both ends of truss as determined by the Designer.

**MATERIAL:** 16 gauge **FINISH:** Galvanized

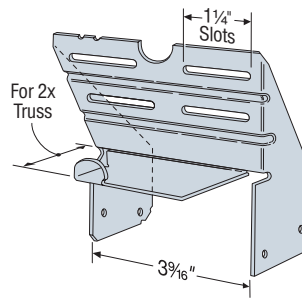
**INSTALLATION:** • Use all specified fasteners.

See General Notes.

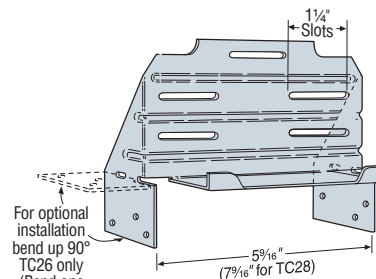
- Drive 10d nails into the truss at the inside end of the slotted holes (*inside end is towards the centre of the truss*). Do not seat these nails into the truss—allow room under the nail head for movement of the truss with respect to the wall.
- After installation of roofing materials, nails may be required to be fully seated into the truss. (*As required by the designer or engineer*).

**Optional TC Installation**

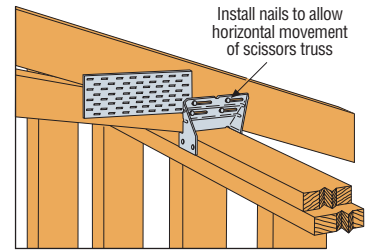
- Bend one flange up 90°. Drive specified nails into the top and face of the top plates or install Titen® screws into the top and face of masonry wall. See optional load tables and installation details.



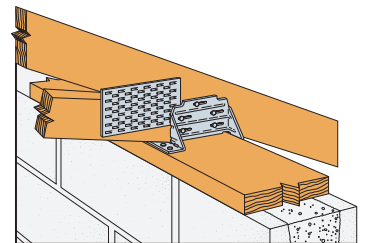
**TC24**  
U.S. Patent 4,932,173



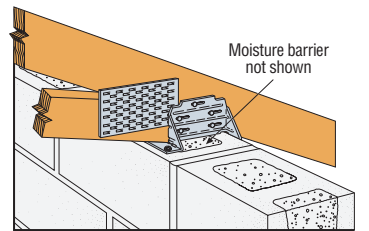
**TC26**  
(TC28 similar)



Typical TC24 Installation



Optional TC26 Installation for Grouted Concrete Block using a Wood Nailer (8", 10", 12" Wall Installation similar)



Optional TC26 Installation for Grouted Concrete Block using Titen Screws

Model No.	Fasteners		Factored Resistance	
	Truss	Plate	D. Fir-L	S-P-F
			Uplift	Uplift
			( $K_D=1.15$ )	( $K_D=1.15$ )
		lbs	lbs	
		kN	kN	
TC24	4-10d	4-10d	1000	720
			4.45	3.21
TC26	5-10d	6-10d	1335	970
			5.95	4.32
TC28	5-10d	6-10d	1355	970
			6.04	4.32

**OPTIONAL TC INSTALLATION TABLE**

Model No.	Fasteners		Factored Resistance	
	Truss	Plate	D. Fir-L	S-P-F
			Uplift	Uplift
			( $K_D=1.15$ )	( $K_D=1.15$ )
		lbs	lbs	
		kN	kN	
TC26	5-10dx1½	6-10dx1½	930	660
			4.14	2.94
	5-10d	6-10d	930	660
			4.14	2.94

1. Factored resistances have been increased 15% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
2. Grout strength is 15 MPa minimum.
3. Nail values based on single 2x truss.
4. Optional TC26 installation with 10d nails requires minimum 3" top plate thickness.
5. TC26 fastened to grouted concrete block with 6 - 3/16" x 2 1/4" Titen screws has a factored uplift resistance of 290 lbs (1.29 kN)
6. **NAILS:** 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long. See page 16-17 for other nail sizes and information.