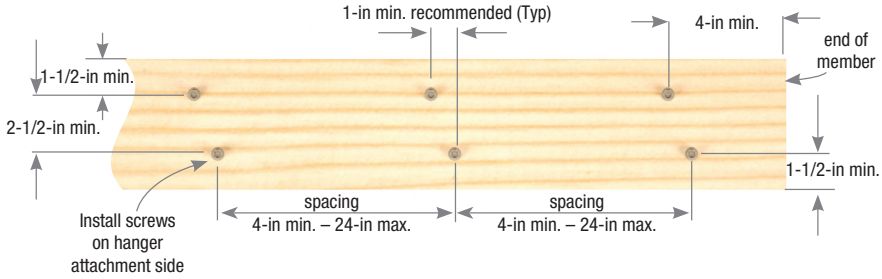
MiTek®

Joining 2, 3, or 4 Ply Wood Trusses

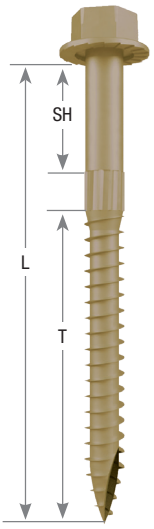
The installation instructions and design example shown below are intended for a design professional who will be responsible for determining the location and number of wood screws to adequately transfer all loads on the truss.

Installation:

- Screw spacing shall not be greater than 24-inches on center and less than 4-inches on center. However, the location of any individual screw may be adjusted up to one-half the required screw spacing to avoid lumber defects or interference with other hardware.
- Load or hanger spacing shall not be greater than 24-inches center-to-center.
- The last truss ply must have a minimum of 1-1/4-inch of screw penetration and no more than 1/8-inch gap between each ply.



- Screws cannot be installed through metal truss plates unless the Truss Engineer approves pre-drilling.
- On 2x4 members, use one row of wood screws. On 2x6 and 2x8 use two rows, and on 2x10 use three rows. Stagger all rows.
- The truss bottom chord shall have lateral bracing installed as called out by the Truss Engineer to prevent any displacement from torsional forces.
- Install screws from one side without flipping the truss.
- Top and bottom chords require screws and in some cases the webs may require screws.
- All lateral bracing should be attached to each truss ply.
- Increase edge and end distance if wood splitting occurs.



WS

Size (in)	MiTek Stock No.	Dimensions (in) L	SH	T	Finish	Shear Plane Location[3]	DF Allowable Shear (Lbs.)[1,2,4] 100%	115%	125%	SP Allowable Shear (Lbs.)[1,2,4] 100%	115%	125%	S-P-F Allowable Shear (Lbs.)[1,2,4] 100%	115%	125%
1/4 x 3	WS3	3	3/4	2	Zinc	SH, T	227	261	284	266	306	333	164	189	205
1/4 x 4-1/2	WS45	4-1/2	1-1/4	3	Zinc	SH, T	233	268	291	266	306	333	181	208	226
1/4 x 6	WS6	6	1-3/4	4	Zinc	T	243	279	304	266	306	333	206	237	258
						SH	276	317	345	320	368	400	211	243	264

1) The Truss Engineer shall apply all adjustment factors required per the NDS®.
2) Table values are based on 1-1/2" thick wood side members. Where the side and main members are of different specific gravities, use the lower of the two.
3) SH = screw shank; T = threads.
4) Table values depicted assume the wood screws installed with the screw heads in the loaded ply.

Design Example

3 Ply with Mixed Wood Species:
Bottom Chord: 2x6 Douglas Fir-Larch
Top Chord: 2x4 Spruce-Pine-Fir

WS45 Wood Screw Allowable Loads:
Southern Pine: 306 lbs. each at 115%
Spruce-Pine-Fir: 208 lbs. each at 115%

Bottom Chord Wood Screw Spacing:
Using 2 rows of WS45 Wood Screws in 2x6

$$2 \times 306/500 \times \frac{\text{\# Plies}}{\text{\# Plies - 1}} = 1.84 \text{ ft.}$$

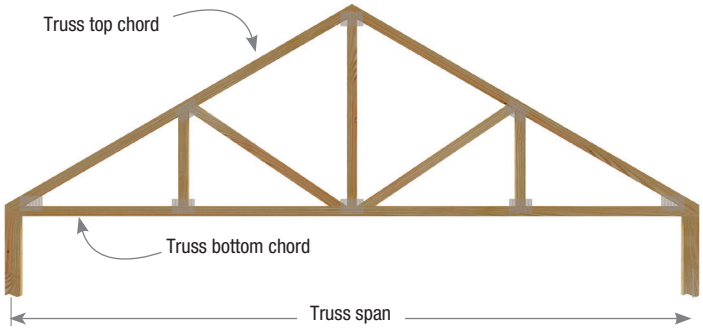
Use maximum spacing of 22-inches.

Top Chord Wood Screw Spacing:
Only 1 row of WS45 Wood Screws in 2x4 member

$$1 \times 208/60 \times \frac{\text{\# Plies}}{\text{\# Plies - 1}} = 5.20 \text{ ft.}$$

Use maximum spacing of 24-inches.

Required Loads:
Bottom Chord Load: 500 plf
Top Chord Load: 60 plf
(Roof Live Load: CS - 1.15)



Typical Truss Profile (profile may vary)

Customer Service & Technical Assistance

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MiTek-US.com

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