

Installation Guide: Tuff Span Roofing and Siding

Supplier's Assistance

These instructions are intended for Tuff Span building panels to be installed as roofing or siding. For further assistance, please contact:

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Material Handling

1. Inspect materials upon delivery. If damage is found, promptly advise both freight carrier and Enduro. Note damage on carrier's receiving ticket.
2. When lifting panels, use spreader bars. Do not use wire slings unless panels are protected.
3. Use planking when moving loads across panels. Do not overload or use panels for storage platforms.
4. Protect panels from surface cuts, impacts, and abrasions.
5. Avoid interference and extreme bending when covering corners, valleys, and uneven surfaces. **FRP materials cannot be reshaped by use of external force such as hammering or extreme bending.**
6. Use abrasive cutting tools or fine-toothed saws to cut panels.

Storage of Bundled Panels

1. Store bundled panels off the ground high enough to allow air circulation under the bundle and to be above standing water. Elevate one end of the bundle for water drainage.
2. Prevent rain from entering bundle by covering with a tarp or shelter. Avoid moisture between bundled panels, by providing air circulation between draped edges of tarp and ground.
3. If water is present in the bundle: Open the bundle, separate the panels, and dry the materials.
4. If conditions do not permit immediate installation, extra care should be taken to protect panels while nested in bundles against trapped moisture, which can cause permanent watermarks.

Installation

1. Start panel installation on end of building opposite the prevailing wind. Install flashing that goes under panels first.
2. Make sure bearing areas are clean and free of projections. *Place panels with embossed surface facing outside of building.*
3. For roofing applications, apply a continuous bead of butyl sealant tape between nesting side laps and before installing side lap fasteners (see Side Lap Detail).
4. **Pilot holes must be drilled for Type A and B stainless steel screws.** Correct drilling of pilot holes is critical to the installation. Refer to the Drill Bit Selection Chart for correct Drill Bit size. *Pilot holes are not required for SX6 Self-Drilling screws.*
 - a. **Drill pilot holes through panels and structural support at very slow speed** using a sharp carbide-tipped sheeter's bit. High-speed drilling hardens inside of holes, making it difficult for fastener threads to bite (thread rolling) and causing drill bits to burn-up faster than normal. Using a lubricant may extend life span of bits.
 5. Fasten panels to supports at correct spacing with proper fasteners and washers. See Fastener and Sealant Guide; Selecting Fasteners.
 - a. **Drive all screws at 500 rpm or less.** To avoid excessive speed and heat build-up, "trigger" the drill motor (turn it on and off). If thread rolling occurs, lubricate screws with a drill bit lubricant.

Thread rolling may occur when driving 316 stainless or monel fasteners into hard steel. If this happens, use a heat-treated Type B carbon steel screw to tap the hole before installing Type A or B stainless steel or monel fasteners.

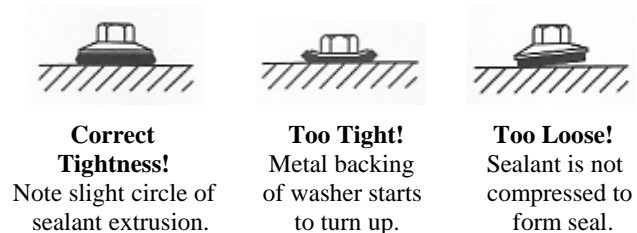
- b. Tighten screws until the sealing washer extrudes slightly beyond the metal washer (see diagram below). **DO NOT OVER TIGHTEN** screws as this can damage materials.
- 6a. **For panel side lap attachment, Mark and drill a 3/8" diameter pilot hole** for the SB2 Grommet fastener. See Fastener and Sealant Guide for spacing.
- b. Before inserting the SB2, draw adjacent panels together to prevent premature spreading of the fastener.
- c. Install SB2 fasteners using an adjustable torque driver at slow speed. Tighten the SB2 until the grommet washer extrudes out slightly beyond the metal washer.
7. Install flashing with SB2 fasteners, 12" on center. Pilot holes are required for SB2 grommet fasteners.
8. Insert closure strips and secure them with fasteners or adhesive caulk (if condition is not suitable for fasteners).
9. Apply sealant tape and caulk where specified or shown on drawings. Surfaces must be clean and dry before application.
10. *Masonry or other abrasive type blades are suitable for field cutting of Tuff Span panels. Diamond blades are also suitable.*

Cleaning and Repair

1. Clean panels with soap and water first. If this does not work, some solvents can be used to clean spills or stains on Tuff Span. However, solvents should be used sparingly and only if absolutely necessary. *Some solvents like acetone may remove the acrylic polymer surface coating on coated materials.*
2. Minor damage to deck or flashing can be patched with a Tuff Span repair kit. Materials with other damage should be replaced.

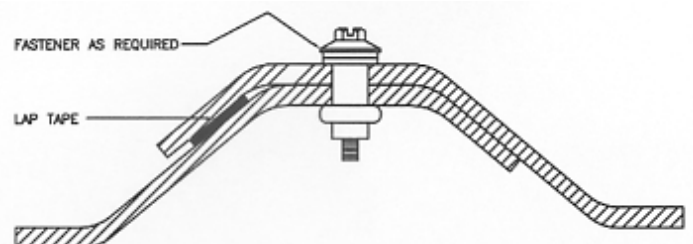
Correct Fastener Installation

Visual Inspection



Panel Side Lap Detail

Place butyl lap tape at side laps as shown.
Do not place tape on top of ribs.



Installation Guide: Tuff Span Roofing and Siding**Selecting Fasteners**

1. **Type A Point screws** (3/8" hex head): Used for fastening to wood structure, light gage metal (14 gage or lighter) and Tuff Span FRP structural members.

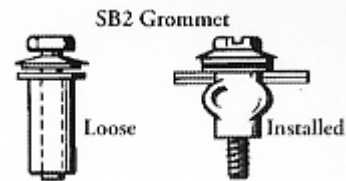
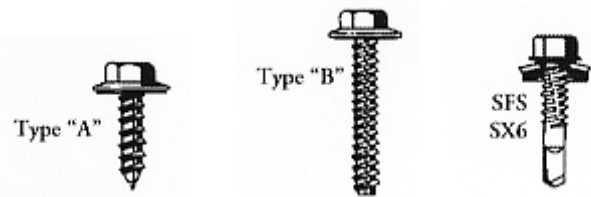
2. **Type B Point screws** (3/8" hex head): Used for fastening to steel members, 12 gage up to 1/2" thick.

- Type A and B fasteners are available in 300 and 316 stainless steel or monel. These metals are softer than carbon steel; so extra care must be taken for installation.

- Type A and B fasteners will include a .729" or 1.125" diameter metal and neoprene seal washer as required by specifications and structural requirements.

3. **SX6 Self-Drilling screws** (5/16" hex head): Suitable for fastening of 6.5 Roof Deck to carbon steel members, 14 gage up to 1/4" thick. SX6 screws are available only in 305 stainless steel with S19, 3/4" diameter washers.

4. **SB2 Grommet** (5/16" hex head): Used to fasten flashing and panel-to-panel side laps. The SB2 is a grommet type fastener with a machine screw (300 and 316 stainless steel or monel), brass nut, and rubber sleeve.



Structural Fastener	Member Gage	Drill Bit Size	Side Lap Fastener	Drill Bit Size
#14 Type B	14 up to 10 ga. 10 ga. up to 3/16" 3/16" to 3/8" 3/8" to 1/2"	No. 8 or 13/64" No. 4 or 7/32" No. 1 or 15/64" A Size or 15/64"	SB2 Grommet	3/8"
# 14 Type A	Wood, all depths 16 to 14 ga. Metal 18 ga. Metal Tuff Span FRP	5/32" No. 8 or 13/64" No. 10 or 13/64" No. 22 or 11/64"		
SX6 Self Driller	14 ga. to 1/4" Metal	Not required		

Notes:

- SX6 self-drilling, self-tapping fasteners are not suitable for use into stainless steel support members.
- For fastening into light gage metal, Type A screws install easier than Type B screws.

Fastener and Sealant Guide

Profile	Application See Note 1)	Fastener Location Panel to Structure	Side Lap Fasteners	Sealant Side & End Lap	Min. Side Lap	Min. End Lap
2.67 x 7/8, 2 1/2 x 1/2 Corrugated	Roofing (Slope 3/12)	Every 3 rd high rib	18" o.c. (1)	Butyl lap tape	1 rib	6"
	Siding	Every 3 rd high rib	18" o.c.	Not req'd (Note 5)	1 rib	4"
4.2 x 1.06 Corrugated	Roofing (Slope 3/12)	Every other high rib	18" o.c. (1)	Butyl lap tape	1 rib	6"
	Siding	Every other low rib	18" o.c.	Not req'd (Note 5)	1 rib	4"
4 3/16 Rib, 4.0 Rib, 4 7/8 V-Beam (Note 3)	Roofing (Slope 3/12)	Every other low rib	18" o.c. (1)	Butyl lap tape	1 rib	6"
	Siding	Every other low rib	18" o.c.	Not req'd (Note 5)	1 rib	4"
7.2 x 1.5 Rib, 7.0 Rib, 7.2D x 1.75 Rib, 5.33 V-Beam	Roofing (Slope 3/12)	Every low rib	18" o.c. (1)	Butyl lap tape	1 rib	6"
	Siding	Every low rib (Note 5)	18" o.c.	Not req'd (Note 5)	1 rib	4"
R-Panel, Trafford Tile 7.2D x 1.75 Rib, 5.33 V-Beam	Roofing (Slope 3/12)	One on each side	18" o.c. (1)	Butyl lap tape	1 rib	6"
	Siding	of every high rib	18" o.c.	Not req'd (Note 5)	1 rib	4"
6.5 x 2 Series 500	Roof Deck	Every low rib	18" o.c. (8)	Not req'd (Note 5)	Side nest	Butt
8.0 x 3.5 Series 700 (Note 7)	Roof Deck	Every low rib	24" o.c. (8)	Not req'd (Note 5)	Side nest	Butt
Flashing	All	See Note 6		Butyl lap tape where required		See Note 4

Notes:

- Side lap fastening for roof slope 3/12 or greater is 18" o.c. For roof slopes less than 3/12, side lap fastening is 12" o.c.
- Seal washer with .729" diameter is required unless noted otherwise.
- Use 5/8" diameter washer for 4 7/8 V-Beam only.
- End lap for ridge and corner flashing is 4"; butt ends of other flashing unless noted otherwise.
- Unless noted otherwise in specifications, notes, or drawings.
- Fasten to panels at every other rib for 7.2, 7.0, or 7.2D; at every third rib for 4.2 Corrugated; or at 12" on center.
- Use 1.125" seal washer for 8.0 x 3.5 Roof Deck.
- For roof deck diaphragm applications, side lap fastening would be 12" on center.