

Installation Guide: Tuff Span Roofing and Siding

Manufacturer's Assistance

These instructions are intended for installation of Tuff Span roofing and siding panels. 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. **Use of proper equipment is critical to installation.** To drill pilot holes for Type A and B stainless steel screws use a 0-1000 RPM Variable Speed Drill and Carbide-Tipped Bit. *Impact or higher speed drills should not be used.* Refer to the Drill Bit Selection Chart for correct bit size. *Pilot holes are not required for SX5 or SX14 Self-Drilling screws.* To install stainless steel fasteners, use a 0-1000 RPM Variable Speed, Screw Gun equipped with clutch and depth sensing nose piece.
 - a. **For Type A and B stainless steel screws, drill pilot holes** through panels and into structural supports straight at very slow speed. High-speed drilling can harden inside of holes, making it difficult for fastener threads to bite and cause thread rolling. Excessive speed can cause drill bits to burn-up faster than normal. Applying a lubricant to drill bits can extend service life.
5. Fasten panels to supports at correct spacing with fasteners and washers per Fastener Selection and Sealant Guide on Page 2.

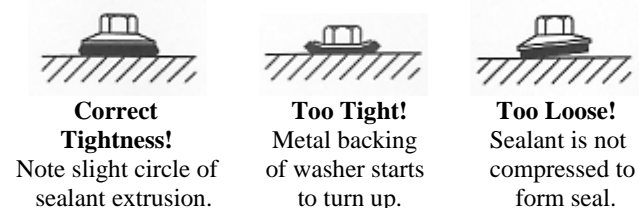
- a. **Drive all screws at 500 rpm or less.** While installed, screws must be kept straight. Excessive speed may cause thread rolling or shearing the fastener. To avoid excessive speed and heat build-up, "trigger" the motor (vary the speed).
- a. Tighten screws until sealing washer extrudes slightly beyond the metal washer as shown below. **Do not over tighten** screws as this can damage the fastener or panel.
- b. If thread rolling occurs, 1) apply a lubricant to screws, 2) make sure appropriate equipment is being used and these instructions are followed. Tapping the hole with a heat-treated Type B carbon screw with similar threads may be needed.
- 6a. **For panel side lap attachment**, mark and drill 3/8" diameter pilot holes for SB2 Grommet fasteners at spacing per Fastener and Sealant Guide.
- b. Before inserting the SB2, draw adjacent panels together to prevent premature spreading of the fastener.
- c. Using an adjustable torque driver at slow speed, install SB2 fastener. Tighten until the grommet washer extrudes out slightly beyond the metal washer.
7. Install flashing with SB2 fasteners, 12" on center.
8. Insert closure strips and secure 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, use solvents 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 FRP repair kit. Materials with other damage should be replaced.

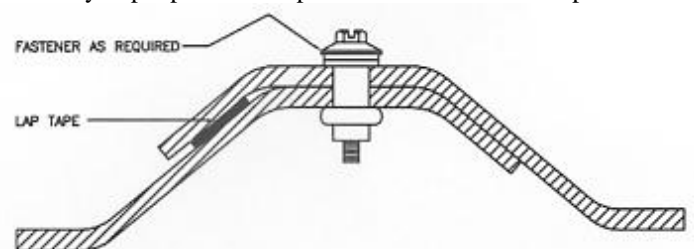
Correct Fastener Installation

Visual Inspection



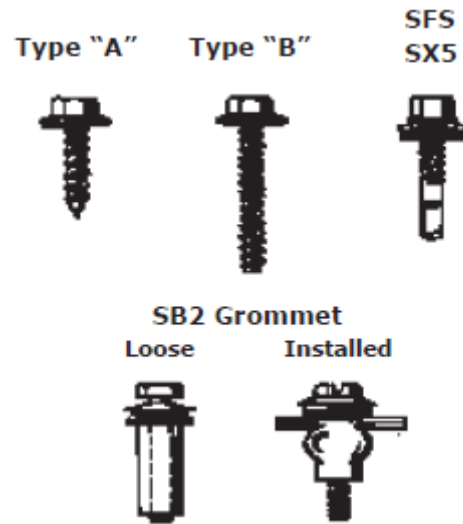
Panel Side Lap Detail

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



Fastener Selection

- Type A , 3/8” Hex Head: For fastening to wood structure, 14 gage or lighter metal, and Tuff Span FRP structural members.
- Type B, 3/8” Hex Head: For fastening to steel members, 12 gage up to 1/2” thick.
- Type A and B fasteners with .729” or 1.125” diam. metal and EPDM seal washer 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.
- SX5 Self-Drilling Screws, 5/16” Hex Head: For fastening to steel.
- SB2 Grommet, 5/16” Hex Head: For fastening 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.



Drill Bit Selection Chart

Structural Fastener	Beam Thickness	Drill Bit Size	Side Lap Fastener	Drill Bit Size
#14 Type B	.065-.085”	#8 (.199”)	SB2 Grommet	3/8”
	.085-.115”	#7 (.201”) or 13/64		
	.115-.375”	#1 (.228”) or 7/32		
	.375-.500”	#1 (.228”) or 7/32		
#14 Type A	.021-.026”	1/8 (.125”)		
	.027-.050”	3/16 (.187”)		
	.051-.075”	#8 (.199”) or 13/64		
	Wood	5/32”		
FRP	#22 (.157”) or 11/64			
SX5 Self Driller	.075-.157”	Not req'd		
SX14 Self Driller	.158-.550”	Not req'd		
#12XS Self Driller	FRP	Not req'd		

Fastener and Sealant Guide

Profile (1)	Application	Fastener Location Panel to Structure	Side Lap Fasteners	Sealant Side/End Laps	Min. Side Lap	Min. End Lap
2.67 x 7/8, 2 1/2 x 1/2	Roofing	Every 3 rd high rib	18” o.c. (3)	Required	1 rib	6”
	Siding	Every 3 rd high	18” o.c.	Not req'd (4)	1 rib	4”
4.2 x 1.06	Roofing	Every other high rib	18” o.c. (3)	Required	1 rib	6”
	Siding	Every other low	18” o.c.	Not req'd (4)	1 rib	4”
4.1x9/16, 4.0x1, 4.875V (2)	Roofing	Every other low rib	18” o.c. (3)	Required	1 rib	6”
	Siding	Every other low	18” o.c.	Not req'd (4)	1 rib	4”
7.2 x 1.5, 7.0x1.5, 6.0x1.5, 7.2D x 1.75, 5.33x1.75V	Roofing	Every low rib	18” o.c. (3)	Required	1 rib	6”
	Siding	Every low	18” o.c.	Not req'd (4)	1 rib	4”
12x1.25R, 12x1.62R, Trafford Tile	Roofing	One on each side	18” o.c. (3)	Required	1 rib	6”
	Siding	of every high rib	18” o.c.	Not req'd (4)	1 rib	4”
6.5D x 2	Roof Deck	Every low rib	18” o.c. (6)	Not req'd (4)	Side nest	2”
8.0D x 3.5 (5)	Roof Deck	Every low rib	24” o.c. (6)	Not req'd (4)	Side nest	Butt Ends
Flashing	All	Note 7		Req'd as noted		Note 8

Notes:

1. Structural fasteners shall have .729” diameter seal washer unless noted otherwise.
2. For 4.875x1.75V, use 5/8” diameter seal washer.
3. For roof slopes 3/12 or greater, fasten side laps 18” o.c. For roof slopes less than 3/12, fasten side laps 12” o.c.
4. Sealant is not required unless stated otherwise in notes, specifications, or drawings.
5. For 8.0D x 3.5 roof deck, use 1.125” diameter seal washers.
6. For roof deck diaphragm applications, fasten side laps 12” o.c.
7. For 7.2, 7.0, and 7.2D panels, fasten flashing at every other rib. For 4.2, 4.1, 4.0, or 4.875V fasten flashing at every third rib. For other profiles, fasten 12” on center.
8. For ridge and corner flashing, lap ends 4”. For other flashings, butt ends unless noted otherwise.