

Installation Guide: Tuff Span FRP Roof Deck

Manufacturer's Assistance

These instructions are intended for Tuff Span 6.5 and 8.0 profiles used as roof deck supporting built-up or single ply roofing. Please contact Enduro for: 1) information on FM listed assembly. 2) Installation instructions for 6.5 and 8.0 profiles used as form deck for concrete slabs or as building cladding.

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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 deck panels. Do not overload deck panels or use for storage platforms.
4. Protect panels from surface cuts, impacts, and abrasions.
5. Avoid interference and extreme bending when covering crickets, 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 deck.

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. Install flashing that goes under roof deck panels first.
2. Start roof deck installation at one end of the roof.
3. Place roof deck panel (**with small ribs down**) on supporting structure. Square up panel into final position with proper bearing and with panels in alignment before fastening.
4. **End to end roof deck panels can be butted or end lapped.**
Butted Ends: Butt ends so panel ribs are continuous and straight across roof surface. If needed, pop chalk lines across supports to keep panels straight during layout. If specified, seal butt joints with joint tape. Clean surfaces before applying tape.
Lapped Ends: Panel lengths must include allowance for end lap. For 6.5, end laps can be 2-6 inches. For 8.0, end laps can be 2-3 inches. Due to vertical slope and depth of 8.0 ribs, butt ends are recommended as end lapping is more difficult and may require some external pressure.
5. Nest side laps of adjacent deck panels in the outer low ribs (see Side Lap Detail on Page 2). If specified, apply a continuous bead of butyl sealant tape between nesting side and end laps.
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 in every low panel rib with correct fasteners and washers (6.5, .729"; 8.0, 1.125").
 - 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 on Pg 2. **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.
- 8a. For panel side lap attachment, Mark and drill 3/8" diameter pilot holes** for SB2 Grommet fasteners at this spacing:
- | | |
|------------------------|------------------------|
| 6.5 Roof Deck_18" o.c. | 8.0 Roof Deck_24" o.c. |
|------------------------|------------------------|
- Diaphragm requirements: 12" o.c.
- b. Before inserting the SB2, draw deck 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.
9. Install flashing with SB2 fasteners, 12" on center.
 10. Insert and secure closure strips fasteners or adhesive caulk (if condition is not suitable for fasteners).
 11. Use backer rods, sealant tape, and caulk where specified or shown on drawings. Apply adhesives and sealant to clean, dry surfaces only.

Attaching Insulation

Rigid insulation may be attached to Tuff Span FRP deck with either mechanical fasteners, cold or hot adhesives.

1. Mechanical fasteners shall be "positive lock" type such as Enduro N-C plastic fastener; TPR Peel Rivet by SFS Intec; Rawl "Speed-Lock" toggle bolt; or bolt and nut assemblies.
2. Cold adhesive shall be Oly-Bond 500, Duro-Grip or equal.
3. Temperature of hot adhesive should not exceed maximum guideline per NRCA Handbook of Accepted Roofing Knowledge.

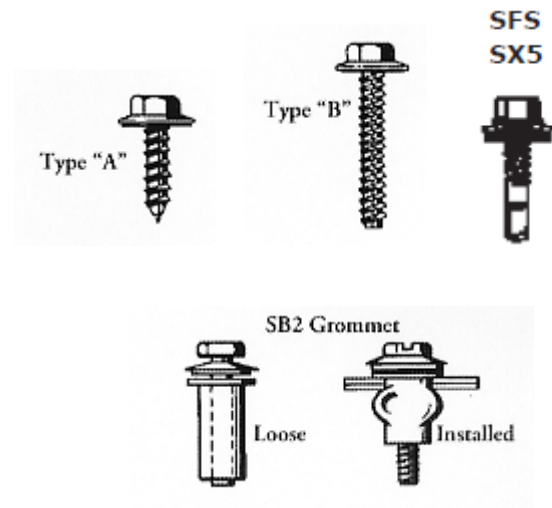
Cleaning and Repair

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 as necessary.
2. Minor damage to deck or flashing can be patched with a FRP repair kit. Materials with other damage should be replaced.

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.
 - Tuff Span 6.5 Roof Deck requires .729" diameter washers for Type A and B screws. Tuff Span 8.0 Roof Deck requires 1.125" diameter washers.
3. **SX5 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. SX5 screws are available only in 304 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.

Fastener Types

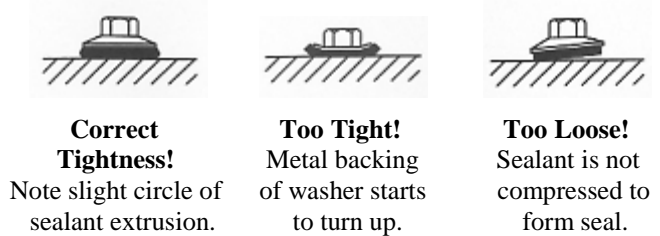


Drill Bit Selection Chart

Structural Fastener	Member Gage	Drill Bit Size
#14 Type B	.065-.085"	#8 (.199")
	.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
Side Lap Fastener	Drill Bit Size	
SB2 Grommet	3/8"	

Correct Fastener Installation

Visual Inspection



Roof Deck Side Lap Detail

Install with small ribs down.

