

TuffSpan™ FRP Ceiling Panel / Roof Deck

Corrosion Protection for Membrane & Multi-Ply Roof Assemblies

Long-Term Solution

- Lower Life Cycle Cost • Better Work Conditions

Corroded roof decks create avoidable problems and cost for industrial plants with chemical exposure or wet conditions. Delivering a long-term solution for these conditions, installing Tuff Span™ 6.0x1.5 FRP deck panels below metal roof deck offers: 1) Corrosion protection for roof assembly; 2) Protection from falling deck particles for workers, equipment, and product; 3) Elimination of costly maintenance and roof replacement.

Easy, Low Cost Installation

- One Step Panel Fastening • Walkable Panels

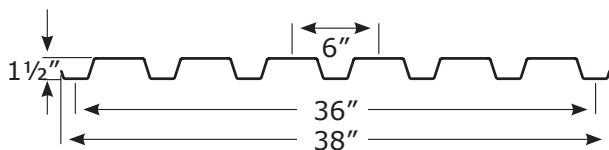
The Tuff Span™ 6.0x1.5C profile is designed for easy underlayment and nesting with conventional Type B metal deck. Simple installation includes: 1) Loose lay of FRP panels on support structure; 2) Nesting of metal deck on FRP panels; 3) Fastening thru metal and FRP panels; 4) Normal installation of roof materials.

Corrosion Resistance + Superior Strength

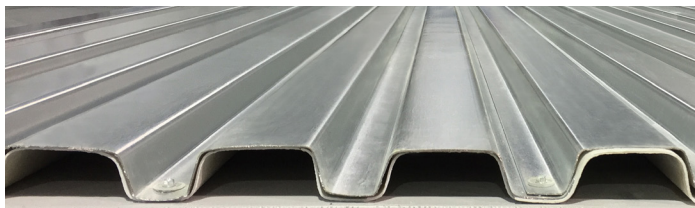
- Long Service Life • No Maintenance

Tuff Span™ materials do not corrode in facilities with continuous wet or tough chemical exposures. For food processors, the material will stand up to frequent, high pressure wash downs. Its premium, vinyl ester resin system ensures long, maintenance free, service life. Its high content of glass fiber reinforcements produce high strength properties and a safe working surface for installers.

Tuff Span 6.0 x 1.5C Profile



FRP Ceiling Panel and Corrosion Barrier for Metal Roof Deck and Roof Assemblies



Tuff Span Roof Deck Installation at Chemical Plant

Cost Saving, Innovative Roof Solution

- Protection for Roof Assembly • FM Approved

Roof assemblies with a Tuff Span corrosion barrier are lower cost than metal deck with costly, field applied coatings and much lower than stainless steel. Over its service life, the cost savings for the roof system can be significant. With FM Approval per Standard 4880, Tuff Span ceiling panels are suitable for use with FM approved metal deck and roof assemblies.

Materials	FM Series	
	16	13
Nominal Weight, Oz/SF	16.5	13.5
Nominal Glass Content	33% by weight	
Resin System	Vinyl Ester	
Flame Spread Rating, ASTM E84	Class 1: 25 or less	
Smoke Development, ASTM E84	≤300	
Standard Colors	White, Gray	
FM Standard 4880	FM Approved	

Maximum Spans	1.5" B (2) Metal Deck	6.0x1.5C FRP (1)
Tuff Span Series FM16	20 Gage	6'8" (2.03 m)
Tuff Span Series FM13	22 Gage	6'0" (1.83 m)

(1) Span limits for FRP panels are based on 300 lb. load over 2.5' sq. area; L/D Limit = 180; Safety Factor = 2.5.

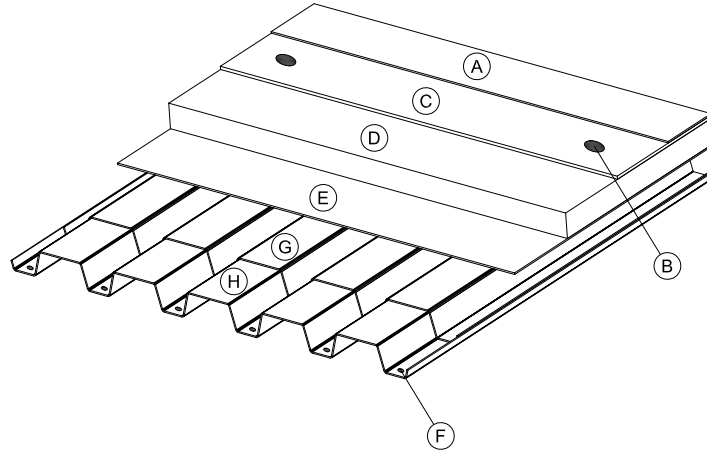
(2) Metal deck is considered as load bearing for design. FRP panels are considered as non-load bearing after installation.

TuffSpan™ FRP Ceiling Panel / Roof Deck

Corrosion Protection for Membrane & Multi-Ply Roof Assemblies

Roof Assembly

- A. Adhered Membrane
- B. Roofing Fasteners
- C. Cover Board (if req'd)
- D. Foam Insulation
- E. Vapor Retarder (if req'd)
- F. Structural Fasteners
- G. Type B Metal Roof Deck
- H. **Tuff Span 6.0 x 1.5C
FRP Corrosion Barrier**



Installation

- 1) Loose lay FRP panels on support beams.
- 2) Apply joint tape over butted ends of FRP panels.
- 3) Nest Type B metal deck on FRP panels.
- 4) Install self-drilling fasteners thru both panels.
- 5) Install side lap fasteners.
- 6) Install roofing materials.
- 7) Install insulation fasteners with screw gun.
- 8) Apply roofing adhesive and lay out membrane.

Specifications

PART 1 GENERAL

1.1 This section includes glass fiber reinforced plastic (FRP/GRP) ceiling panels.

PART 2 PRODUCTS

2.1 FRP ceiling panels shall be Tuff Span as manufactured by Enduro Composites, Inc.

2.2 GLASS FIBER REINFORCED PLASTIC PANELS

- A. FRP profile shall have ribs 6 in. (152mm) on center x 1.5 in. (38 mm) depth with 36 in. (914mm) coverage.
- B. Panels shall be Tuff Span Series FM ____ (Series 16 or 13 as specified).
- C. Color shall be Enduro standard gray or white (as specified).
- D. Material resin shall be premium grade, fire retardant vinyl ester.
- E. Glass fiber reinforcements shall be 33% by weight (min) in continuous, bidirectional alignment.
- F. Panels shall be FM Approved per Standard 4880 with Class 1 Flame Spread Rating of 25 or less per ASTM E-84.
- G. Finish shall be smooth top surface and embossed bottom.

2.3 RELATED MATERIALS SPECIFIED ELSEWHERE

- A. Metal roof deck shall be Type B, (20 or 22 Gage as specified), G90 Galvanized and installed per FM guidelines.
 1. Self-drilling fasteners shall be SX14 #12x1.5625" (304 or 316 SS as specified) with 5/8" Washer by SFS Intec or equal.
 2. Side lap fasteners shall be Type A #14 x 1" (304 or 316 SS as specified) Stitch Screws.
- B. Vapor retarder shall be FM Approved and installed per FM guidelines.
- C. Roof insulation shall be FM Approved ____" polyisocyanurate foam and installed per FM guidelines.
- D. Insulation screws shall be ISO-TAK BS-S-4,8 304/316 SS by SFS Intec or equal and installed per FM guidelines.
- E. Roof membrane shall be FM Approved and installed per FM guidelines.
- F. Adhesive for roof membrane shall be FM Approved and installed per FM guidelines.