

TECHNICAL BULLETIN

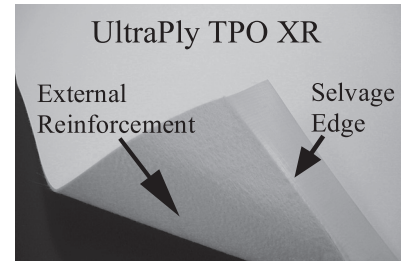
2005/07
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Issue Date: July 18, 2005

**To: Firestone Licensed Red Shield Contractors
Firestone Sales Representatives
Firestone Distributors**

RE: FIRESTONE UltraPly™ TPO XR 100 and XR 115

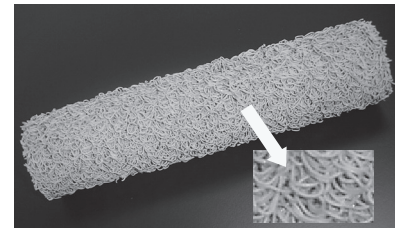


Firestone's UltraPly TPO XR is our newest single-ply membrane to be introduced, expanding the customer's selection of solutions for their roofing needs.

UltraPly TPO XR combines a .045" (1.1mm) or .060" (1.5mm) proven performance UltraPly TPO membrane with an 8 oz. polyester, eXternal Reinforced, fabric bonded to the back side for a total thickness of .100" (2.4mm) or .115" (2.8mm) respectively. UltraPly TPO XR is available in 100' (30.5m) long rolls of 76" (1862mm) or 120" (3048mm) gross width. Both width rolls have a 2-1/4" (57.2mm) selvage edge for hot air welding of side lap. Ends are butted and joined with an 8" (202mm) surface-welded splice strip.

Installation of UltraPly TPO XR is by one of the following four methods:

1. Bonding Adhesive: Firestone XR Bonding Adhesive is a new labor saving one-side-only application with only 206 grams/liter of VOC content which meets or exceeds most, if not all, air quality standards in the United States and all of the current California requirements. Apply Firestone XR Bonding Adhesive using standard application methods with: mechanical spray equipment, **textured** - solvent resistant loop nap paint roller or a drop spreader.
2. Hot Asphalt: apply at manufacturers EVT to the substrate.
3. Mechanical Attachment: Firestone Fasteners and Plates used following application instructions.
4. Ballast: Firestone Ballast Paver System or stone as needed for the job specifications.



A wide variety of installation options, combined with the UltraPly TPO XR membrane, provide an ideal system for reroofing and new roofs. For example, reroofing can be done directly over a mineral or smooth surfaced built-up or modified bitumen roof with the first three methods above. It is also possible for new construction to go direct to lightweight structural or cellular lightweight concrete decks with XR Bonding Adhesive. Consult attached lists and tables or Firestone website for additional information.

Performance of an UltraPly TPO XR membrane roof system will achieve up to an FM 1-555 and UL Class A, depending on the components and methods of the substrate assembly, current listings and bonding information attached. Consult Firestone website for a complete up to date code listing. UltraPly TPO XR provides high physical performance and a white reflective, EPA Energy-Star compliant, roof membrane system.

Flashings may be done with either UltraPly TPO XR or Standard UltraPly TPO 96 or 120. Use of Firestone XR Bonding Adhesive eliminates the need for a second type of adhesive on the job. For standard UltraPly TPO membrane, use a double-sided application of Firestone XR Bonding Adhesive, UltraPly Bonding Adhesive or Water Based Bonding Adhesive.

Firestone
BUILDING PRODUCTS COMPANY

Warranties for the UltraPly TPO XR roof system are up to 15 years when using the XR 100 membrane and 20 years with the XR 115 membrane. As always, the Firestone Red Shield Warranty covers all products provided by Firestone on approved assemblies. These may include: ISO 95+ GL insulation and tapered components, Firestone Plates and Fasteners, I.S.O. (Insulation **S**ecurement **O**ptions) Foam Adhesives for Insulations, AnchorGard and EdgeGard Fascia, Firestone Copings, Walkway pads, Red Shield Pipe Support System, Pipe and Conduit Flashings, QuickSeam TPO Flashing (15 year or less systems only) and other approved accessories.

Precautions for all products mentioned are listed on their respective TIS (Technical Information **S**heets) found on the Firestone Building Products Company website or in the Technical Manual.

Information and assistance for determining the proper system component design is available from your Firestone Sales Representative or Firestone website at www.firestonebpc.com.

TPO XR CODES

<u>Rating</u>	<u>Deck</u>	<u>Ins.*</u>	<u>Coverboard</u>	<u>Attachment rate</u>	<u>Adhesive</u>
FM 1-90	Steel ("C")	1.5" ISO	¼" Dens Deck PrimeA	P/HD @ 12 per 4x8	XR
FM 1-90	Steel ("C")	1.5" ISO	½" F/S Woodfiber	AP/HD @ 16 per 4x8	XR
FM 1-90	Steel ("C")	1.5" ISO	None	AP/HD @ 12 per 4x8	XR
FM 1-90	Steel ("C")	1.5" ISO	½" F/S Woodfiber	AP/HD @ 16 per 4x8	Asphalt
FM 1-315	Concrete (Not primed)	2X1.5" ISO	¼" Dens Deck Prime	ISO Fix @12" o.c. ½" TO ¾" Ribbons (all layers)	XR
FM 1-375	Concrete (Not primed)	2X1.5" ISO	¼" Dens Deck Prime	ISO TwinPack @12" o.c. ½" TO ¾" Ribbons (all layers)	XR
FM 1-375	Concrete (primed D 41)	1.5" ISO, opt Tapered ISO	¼" Dens Deck Prime	ISO Fix @12" o.c. ½" TO ¾" Ribbons (all layers)	XR
FM 1-555	Concrete (primed D 41)	1.5" ISO, opt Tapered ISO	¼" Dens Deck Prime	ISO TwinPack @12" o.c. ½" TO ¾" Ribbons (all layers)	XR

CELLCORE LWC

FM 1-135 Over Steel Deck with XR Bonding Adhesive

FM 1-435 Over Concrete Deck with XR Bonding Adhesive

ELASTIZELL

Testing to be conducted shortly

* Insulation must be Firestone ISO 95+ GL



TPO XR CODE APPROVALS

Fully Adhered Using XR Bonding Adhesive

05/16/05

CLASS B		
Immediate Substrate	Slope	Deck
7/16" OSB over 4" ISO	1"/12"	NC
Existing UL Class A or B Firestone APP or SBS Cap Sheet Hot Mopped or Torch Applied	1"/12"	NC
Existing UL Class B Mineral Cap (not modified) Maintains Existing Classification	½"/12"	C or NC

CLASS A		
¼" Dens-Deck Mechanically Attached (optional) over Mechanically Attached ISO	1"/12"	C or NC
Lightweight Concrete (Direct to Deck with no Insulation)	1"/12"	NC
Structural Concrete (Direct to Deck with no Insulation)	1"/12"	NC
Existing UL Class A Mineral Cap (not modified) Maintains Existing Classification	½"/12"	C or NC

Mechanically Attached

CLASS B		
Existing Class A or B Mineral Cap Over Non-Combustible Deck	1"/12"	C or NC

Membrane: UltraPly TPO XR membrane
 Adhesive: **XR Bonding Adhesive**

Substrates to receive TPO XR membrane fully adhered with <i>XR Bonding Adhesive</i>	Warrantable
Decks for direct adhesion	
Steel	Not acceptable
Structural Concrete	OK
Plywood Or Oriented Strand Board (OSB)	OK
Wood Planking	Not acceptable
Poured Or Pre-Cast Gypsum	Not acceptable
Cementitious Wood Fiber	Not acceptable
Lightweight Structural Concrete	OK
Cellular Lightweight Concrete Decks	OK
Lightweight Insulating Concrete Decks	Not acceptable
Direct Recovery/Retrofit of TPO XR membrane fully adhered with <i>XR Bonding Adhesive</i>	
Existing Smooth Surface Built-Up Roof Or Modified Bitumen Roofs with no coatings	OK
Existing Smooth Surface Built-Up Roof Or Modified Bitumen Roofs with Coatings	Not acceptable
Coal Tar Built-Up Roofs	Not acceptable
Asphalt Gravel Surfaced Built-Up Roof	Not acceptable
Mineral Surface Built-Up Roof Or Modified Bitumen Roof	OK
Single-Ply Roof System: EPDM, TPO, or PVC: Fully Adhered or Mechanically Attached	Not Acceptable
Sprayed Urethane Roof (PUF)	Complete tear-off is required. New insulation must be installed.
Existing Roof with Phenolic Insulation	Complete tear-off is required. New insulation must be installed.
Existing roof insulation (after removal of existing roof).	Firestone requires mechanically attaching a Cover board over existing insulation.
Insulations to receive TPO XR membrane fully adhered with <i>XR Bonding Adhesive</i>	
Insulation	
ISO 95+	OK
ISO 300	Not acceptable
Fibertop Woodfiber	OK
Dens-Deck	Not acceptable
Dens-Deck Prime	OK
Perlite Insulation	Not acceptable
Polystyrene (extruded or expanded)	Not acceptable
Fiberglass/mineral wool	Not acceptable
Phenolic insulation	Not acceptable
Asphalt Base Sheet	
Asphalt Applied Base Sheet	Not acceptable
Cold Adhesive Applied Base Sheet	Not acceptable
Mechanically Attached Base Sheet	Not acceptable
Torch Applied Base Sheet	Not acceptable

Membrane: UltraPly TPO XR membrane
 Adhesive: Hot Asphalt

Substrates to receive TPO XR membrane fully adhered with <u>Hot Asphalt</u>		Warrantable
Decks for direct adhesion		
Steel		Not acceptable
Structural Concrete		OK
Plywood Or Oriented Strand Board (OSB)		Not acceptable
Wood Planking		Not acceptable
Poured Or Pre-Cast Gypsum		Not acceptable
Cementitious Wood Fiber		Not acceptable
Lightweight Structural Concrete		Not acceptable
Cellular Lightweight Insulating Concrete Decks		Not acceptable
Lightweight Insulating Concrete Decks		Not acceptable
Direct Recovery/Retrofit of TPO XR membrane fully adhered with <u>Hot Asphalt</u>		
Existing Smooth Surface Built-Up Roof Or Modified Bitumen Roofs with no coating		OK
Existing Built-Up Or Modified Bitumen Roofs with any type of coating		Not acceptable
Coal Tar Built-Up Roof		Not acceptable
Asphalt Gravel Surfaced Built-Up Roof		Not acceptable
Mineral Surface Built-Up Roof Or Modified Bitumen Roof		OK
Single-Ply Roof System: EPDM, TPO or PVC: Fully Adhered or Mechanically Attached		Not acceptable
Sprayed Urethane Roof (PUF)	Complete tear-off is required. New insulation must be installed.	
Existing Roof with Phenolic Insulation	Complete tear-off is required. New insulation must be installed.	
Existing roof insulation (after removal of existing roof).	Firestone requires mechanically attaching a cover board over existing insulation	
Insulations to receive TPO XR membrane fully adhered with <u>Hot Asphalt</u>		Warrantable
Insulation		
ISO 95+		Not acceptable
ISO 300		Not acceptable
Fibertop Woodfiber		OK
Dens-Deck		OK
Dens-Deck Prime		OK
Perlite Insulation		Not acceptable
Polystyrene (extruded or expanded)		Not acceptable
Fiberglass/mineral wool		Not acceptable
Phenolic insulation		Not acceptable
Asphalt Base Sheet		
Asphalt Applied Base Sheet		OK
Cold Adhesive Applied Base Sheet		Not acceptable
Mechanically Attached Base Sheet		OK
Torch Applied Base Sheet		OK
APP Base Sheet		Not acceptable