



**MIAMI-DADE COUNTY**  
**BUILDING CODE COMPLIANCE OFFICE (BCCO)**  
**PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA**  
**METRO-DADE FLAGLER BUILDING**  
**140 WEST FLAGLER STREET, SUITE 1603**  
**MIAMI, FLORIDA 33130-1563**  
**(305) 375-2901 FAX (305) 375-2908**

**NOTICE OF ACCEPTANCE (NOA)**

**Firestone Building Product Company**  
**250 West 96<sup>th</sup> Street**  
**Indianapolis, IN 46260**

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Firestone UltraPly TPO and TPO XR Single Ply Roof Systems over Concrete Decks**

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No. 05-0803.03 and consists of pages 1 through 23.  
 The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 08-1118.03**  
**Expiration Date: 05/18/11**  
**Approval Date: 05/13/09**  
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## ROOFING SYSTEM APPROVAL

<b>Category:</b>	Roofing
<b>Sub-Category:</b>	Single Ply Roofing
<b>Material:</b>	TPO
<b>Deck Type:</b>	Concrete
<b>Maximum Design Pressure</b>	- 500 psf

### TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
UltraPly TPO	Various	TAS 131-95	Reinforced TPO 0.045" to 0.080" thick membrane
UltraPly TPO XR 100	Various	TAS 131-95	Reinforced TPO
UltraPly TPO XR 115	Various	TAS 131-95	Reinforced TPO
UltraPly TPO Unsupported Flashing	.060 x 24" x 50'	TAS 131-95	Un-reinforced TPO
UltraPly TPO T-joint Cover	.060 x 4" x 4"	TAS 131-95	Un-reinforced TPO
UltraPly TPO Cut Edge Sealant	11 oz. Tube	Proprietary	Synthetic Rubber
Pourable Sealer S-10 Part A & B	1 can of Part A to 1 can of Part B	Proprietary	Two part Polyurethane sealant
Water Block Seal (S-20)	10 oz. Tube	Proprietary	Water Sealant
UltraPly TPO General Purpose Sealant	10.3 oz. Tube	Proprietary	Butyl Rubber Sealant
TPO QuickSeam Flashing	5-3/4" x 100'	TAS 131-95	Flashing material with pre-applied adhesive
UltraPly QuickSeam R.M.A. Strip	10" x 100'		Strip of UltraPly TPO with QuickSeam Tape for anchoring membrane to substrate
UltraPly TPO QuickPrime	1 gallon & # gallon	Proprietary	Primer for TPO QuickSeam Flashing
UltraPly TPO Small and Large Pipe Flashing	Small and large	Proprietary	Un-reinforced TPO molded TPO pipe flashing
UltraPly TPO Inside & Outside Corners	Pre-molded corners	TAS 131-95	Un-reinforced TPO molded TPO inside and outside corners
UltraPly TPO Coated Metal	4' x 10' sheets		TPO coated metal
Metal Insulation Plate	.017 - .023 x 3"		Round Batten Plate
Termination Bar	.087 x 1.08" x 10'	3003-H14, 3105-H14 or 6063-T5, or T6 Aluminum	Aluminum bar for flashing terminations



<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
EdgeGard System	Various	Various	Flashing materials and assemblies
UltraPly TPO Walkway Pad	X 50'	Proprietary	Recycled thermoplastic Walkway Pads
Splice Wash SW-100	5 gallon pail	Proprietary	Cleaning and prep solution for TPO
MB Base M	39.4" x 98.7' (1 m x 30.1 m)	ASTM D 4601	Fiberglass reinforced base sheet, asphalt coated on both sides.
Firestone SBS PolyTorch (APP 170)	39.4" x 33'6"	ASTM D 6222	Polyester reinforced modified bitumen membrane. Torch applied.
SBS Glass Torch Base	39.4" x 33'10"	ASTM D 6163	Modified bitumen base sheet with a burn-off film and reinforced with non-woven fiberglass mat.
XR Bonding Adhesive	5 gal. pail	Proprietary	Solvent based adhesive
UltraPly Bonding Adhesive	5 gal. pail	Proprietary	Solvent based adhesive
Firestone I.S.O Stick Adhesive	5 gal	Proprietary	A dual component polyurethane adhesive.

**APPROVED INSULATIONS:**

**TABLE 2**

<b>Product Name</b>	<b>Product Description</b>	<b>Manufacturer (With Current NOA)</b>
ISO 95+ GL	Polyisocyanurate foam insulation	Firestone Bldg. Pro. Co.
ISO 95+ GL Woodfiber Composite	Polyisocyanurate / Woodfiber insulation	Firestone Bldg. Pro. Co.
ISO 95+ GL Perlite Composite	Polyisocyanurate / perlite insulation	Firestone Bldg. Pro. Co.
Firestone Dens-Deck, Primed	Fire resistant rated gypsum	Firestone Bldg. Pro. Co.
FiberTop, FiberTop C	Woodfiber insulation board	Firestone Bldg. Pro. Co.
High Density Wood Fiberboard	Non-Asphaltic fiberboard Insulation	Generic
Sturdi-Top / high density Wood fiberboard	Non-Asphaltic fiberboard Insulation	Georgia-Pacific
Multi-Max FA	Polyisocyanurate Insulation	RMAX
Foamular 250	Extruded polystyrene insulation	Owens Corning

**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
1.	Firestone HD Fastener	#15 Fastener for steel, Wood, concrete decks	N/A	Firestone Bldg. Pro. Co.
2.	Firestone AP Fastener	#14 Fastener for steel, Wood, concrete decks	N/A	Firestone Bldg. Pro. Co.



**APPROVED FASTENERS:**

<b>TABLE 3</b>				
<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
3.	UltraPly TPO 2-3/8" Barbed Seam Plate	Membrane seam attachment plate	2-3/8" diameter	Firestone Bldg. Pro. Co.
4.	Hex Insulation Plate	AZ 50 Galvalume steel stress plate	3-1/4"x 2-7/8"	Firestone Bldg. Pro. Co.
5.	Pre-Assembled AP fastener & plate	#14 w/insulation plate for steel, Wood, concrete decks	N/A	Firestone Bldg. Pro. Co.
6.	Pre-Assembled HD fastener & plate	#15 w/insulation plate for steel, Wood, concrete decks	N/A	Firestone Bldg. Pro. Co.

**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Underwriters Laboratories Inc.	01NK17982	UL 790	June 5, 2001
	00NK43467	UL 790	January 22, 2001
	99NK5401	UL 790	August 17, 1999
	99NK3276	UL 790	March 30, 1999
	98NK39140	UL 790	May 13, 1999
	98NK25593	UL 790	September 1998
	03NK34486	UL 790	March 22, 2005
Factory Mutual Research Corporation	J. I. 3006983	4470	February 8, 2000
	J. I. 3004249	4470	November 3, 1999
	J. I. 3003830	4470	May 26, 1999
	J. I. 3001925	4470	May 24, 1999
	3014031	4470	07/22/02
	3014918	4470	12/17/03
	3012931	4470	04/04/04
	3016670	4470	04/29/04
	3017120	4470	04/30/04
	3020394	4470	09/03/04
	3022988	4470	01/28/05
	3029384	4470	02/28/08
	3031293	4470	11/29/07
	3027508	4470	02/07/07
	3026519	4470	12/14/06
	3030650	4470	05/16/08
3033218	4470	08/12/08	
3014692	4470	08/05/03	
Trinity ERD	F8300.07.08	TAS 131/ ASTM D6878	07/30/08
	F8960.04.08	TAS 114-F/ TAS 114-D	04/15/08
	F10980.09.08	TAS 114	09/17/08



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**APPROVED ASSEMBLIES:**

- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 3I:** Concrete, Insulated
- Deck Description:** 2500 psi or greater structural concrete or concrete plank
- System Type A(1):** One or more layers of insulation adhered with approved asphalt; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL</b>		
<b>Minimum 1.5" thick</b>	N/A	N/A
<b>(Optional) tapered ISO 95+ GL</b>		
<b>Minimum ½" thick start with a ¼ : 12 taper</b>	N/A	N/A
<b>Top Insulation Layer (Optional)</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Fiber Top</b>		
<b>Minimum ½" thick</b>	N/A	N/A
<b>Dens Deck</b>		
<b>Minimum ¼" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. All subsequent layers of insulation shall be adhered to the previous layer of insulation in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal.

**Maximum Design Pressure:**

- 135 psf with Fiber Top cover board (See General Limitation #9)
- 195 psf with Dens Deck cover board (See General Limitation #9)
- 180 psf without cover board (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** 2500 psi or greater structural concrete or concrete plank  
**System Type A(2):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck with Firestone I.S.O. Twin Pack Insulation Adhesive applied in ½ to ¾ in. wide ribbons or with Firestone I.S.O Stick Adhesive applied in ¾ to 1 in. wide ribbons, spaced as listed below. All subsequent layers of insulation shall be adhered to the previous layer of insulation using the same method of adhesion as the base layer. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:**

- 150 psf, using I.S.O Stick Adhesive with ribbons spaced 12" o.c. (See General Limitations #9)
- 165 psf, using I.S.O. Twin Pack Insulation Adhesive with ribbons spaced 12" o.c. (See General Limitation #9)
- 240 psf, using I.S.O. Twin Pack Insulation Adhesive with ribbons spaced 8" o.c. (See General Limitation #9)
- 285 psf, using I.S.O. Twin Pack Insulation Adhesive with ribbons spaced 4" o.c. (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** 2500 psi or greater structural concrete or concrete plank  
**System Type A(3):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	N/A	N/A
<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Dens Deck Prime Minimum ¼" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck with Firestone I.S.O. Twin Pack Insulation Adhesive applied in ½ to ¾ in. wide ribbons or with Firestone I.S.O Stick Adhesive applied in ¾ to 1 in. wide ribbons, spaced as listed below. All subsequent layers of insulation shall be adhered to the previous layer of insulation using the same method of adhesion as the base layer. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:**

- 127.5 psf, using I.S.O Twin Pack Insulation Adhesive with ribbons spaced 12" o.c. (See General Limitation #9)
- 150 psf, using I.S.O Stick Adhesive with ribbons spaced 12" o.c. (See General Limitations #9)
- 187.5 psf, using I.S.O Twin Pack Insulation Adhesive with ribbons spaced 8" o.c. (See General Limitation #9)
- 247.5 psf, using I.S.O Twin Pack Insulation Adhesive with ribbons spaced 4" o.c. (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** 2500 psi or greater structural concrete or concrete plank  
**System Type A(4):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

Two base insulation layers

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL</b>		
<b>Minimum 1.5" thick</b>	N/A	N/A
<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Dens Deck Prime</b>		
<b>Minimum ¼" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck with Firestone I.S.O. Twin Pack Insulation Adhesive applied in ½ to ¾ in. wide ribbons spaced 8" o.c. All subsequent layers of insulation shall be adhered to the previous layer of insulation using Firestone I.S.O. Twin Pack Insulation Adhesive applied in ½ to ¾ in. wide ribbons spaced 8" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -195 psf (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** 2500 psi or greater structural concrete or concrete plank  
**System Type A(5):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

Two base insulation layers

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Foamular 250 Minimum 1.0" thick</b>	N/A	N/A
<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Dens Deck Prime Minimum ¼" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck with Firestone I.S.O. Stick Adhesive applied in ¾ to 1 in. wide ribbons spaced 12" o.c. All subsequent layers of insulation shall be adhered to the previous layer of insulation using Firestone I.S.O. Stick Adhesive applied in ¾ to 1 in. wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -195 psf (See General Limitation #9)



**Membrane Type:** Single Ply, Thermoplastic, TPO  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank.  
**System Type A(6):** Vapor Barrier and insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

**Vapor Barrier** Firestone MB Base M adhered with Firestone I.S.O. Twin Pack Insulation Adhesive applied in 1/2 - 3/4 in. wide ribbons spaced 12" o.c.

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of Vapor Barrier. Base insulation shall be adhered to the Vapor Barrier using Firestone ISO Twin Pack Insulation Adhesive, applied in 1/2" to 3/4" wide ribbons spaced 12" on center. All subsequent layers of insulation shall be adhered to the previous layer of insulation using Firestone ISO Twin Pack Insulation Adhesive, applied in 1/2" to 3/4" wide ribbons spaced 12" on center. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
ISO 95+ GL Minimum: 1.5" thick	N/A	N/A
<b>Mid Insulation Layer (Optional)</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
ISO 95+ GL Minimum: 1.5" thick	N/A	N/A
<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Dens Deck or Dens Deck Prime</b> Minimum: 1/4" thick	N/A	N/A

**Membrane:** One ply of UltraPly TPO adhered to coverboard using UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup> /gal. The roof cover side laps are sealed with a minimum 1.5" heat weld.

**Maximum Design Pressure:** -232.5 psf; (See General Limitation #9)



**Membrane Type:** Single Ply, Thermoplastic, TPO  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank.  
**System Type A(7):** Vapor Barrier and insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

**Vapor Barrier** Firestone SBS PolyTorch or SBS Glass Torch Base membrane is torch adhered to the primed concrete deck.

**Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of Vapor Barrier. Base insulation shall be adhered to the Vapor Barrier using Firestone ISO Twin Pack Insulation Adhesive, applied in 1/2" to 3/4" wide ribbons spaced 12" on center. All subsequent layers of insulation shall be adhered to the previous layer of insulation using Firestone ISO Twin Pack Insulation Adhesive, applied in 1/2" to 3/4" wide ribbons spaced 12" on center. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum: 1.5" thick	N/A	N/A
Mid Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum: 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
Dens Deck or Dens Deck Prime Minimum: 1/4" thick	N/A	N/A

**Membrane:** UltraPly TPO adhered to coverboard using UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -232.5 psf; (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** 2500 psi or greater structural concrete or concrete plank  
**System Type A(8):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

**All General and System Limitations apply.**

<b>Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Dens Deck or Dens Deck Prime Minimum ¼" thick</b>	N/A	N/A

**Note: Base insulation shall be adhered to the deck with Firestone I.S.O. Stick Adhesive applied in ¾ to 1 in. wide ribbons spaced 12" o.c. All subsequent layers of insulation shall be adhered to the previous layer of insulation using Firestone I.S.O. Stick Adhesive applied in ¾ to 1 in. wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -150 psf (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(1):** All layers of insulation simultaneously attached; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL</b>		
<b>Minimum 1.5" thick</b>	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Plywood</b>		
<b>Minimum 19/32" thick</b>		

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -150 psf (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 2I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(2):** All layers of insulation simultaneously attached; membrane fully adhered.  
**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL</b>		
<b>Minimum 1.2" thick</b>	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Plywood</b>		
<b>Minimum 19/32" thick</b>	7	1:1.6 ft <sup>2</sup>

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -52.5 psf (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 2I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(3):** All layers of insulation simultaneously attached; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
ISO 95+ GL Minimum 1.2" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
Plywood Minimum 19/32" thick	7	1:2.6 ft <sup>2</sup>

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -45 psf (See General Limitation #9)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 2I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(4):** All layers of insulation simultaneously attached; membrane fully adhered.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
Dens Deck Prime Minimum ½" thick	1	See Below

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:**  
 -75 psf at a fastener density of 1:1.33 ft<sup>2</sup> (See General Limitation #7)  
 -105 psf at a fastener density of 1:1 ft<sup>2</sup> (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 2I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(5):** Membrane fully adhered over mechanically fastened insulation.

**All General and System Limitations apply.**

Base Insulation Layer	Fastener Type (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 1.5" thick	5	1:1.33

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -90 psf (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 2I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type C(6):** Membrane fully adhered over mechanically fastened insulation.

**All General and System Limitations apply.**

Base Insulation Layer	Fastener Type (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 2" thick	5	1:1.6

**Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.**

**Membrane:** Firestone UltraPly TPO membrane fully adhered to the top insulation layer with Firestone UltraPly Bonding Adhesive applied to both the substrate and the underside of the roof cover for a combined rate of 120 ft<sup>2</sup>/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

**Maximum Design Pressure:** -75 psf (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type D(1):** Membrane mechanically attached over preliminary fastened insulation.

**All General and System Limitations apply.**

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

**Note: All layers of insulation and membrane shall be simultaneously attached. See membrane below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane.**

**Membrane:** Mechanically attach Firestone UltraPly QuickSeam R.M.A. Strips with Firestone Heavy Duty Fasteners 6" o.c. in Firestone Coiled Metal Batten Strip centered within the 4" wide center section of the UltraPly QuickSeam R.M.A Strips in rows 10 ft. o.c. Firestone UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Firestone UltraPly TPO QuickPrime and placing the primed portion of the roof cover onto the strips. Minimum 2" wide side laps are sealed with a minimum 1.5" wide heat weld.

**Maximum Design Pressure:** -45 psf (See General Limitation #7)



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type D(2):** Membrane mechanically attached over preliminary fastened insulation.

**All General and System Limitations apply.**

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

**Note: All layers of insulation and membrane shall be simultaneously attached. See membrane below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane.**

- Membrane: Firestone UltraPly TPO mechanically fastened to the deck through the insulation as described below:
- Fastening #1: Membrane is mechanically attached using Firestone HD Plus Fasteners and HD Plus Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 1.5" heat weld.  
*Maximum Design Pressure: -60 psf (See General Limitation #7)*
- Fastening #2: Membrane is mechanically attached using Firestone HD Plus Fasteners and 1" wide Firestone Coiled Metal Batten Strip with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.  
*Maximum Design Pressure: -60 psf (See General Limitation #7)*
- Fastening #3: Membrane is mechanically attached using Firestone HD Plus Fasteners and HD Plus Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with a minimum 1.5" heat weld.  
*Maximum Design Pressure: -67.5 psf (See General Limitation #7)*
- Fastening #4: Membrane is mechanically attached using Firestone HD Plus Fasteners and 1" wide Firestone Coiled Metal Batten Strip with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.  
*Maximum Design Pressure: -67.5 psf (See General Limitation #7)*
- Fastening #5: Membrane is mechanically attached using Firestone HD Fasteners and HD Seam Plates spaced 12" o.c. within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 1.5" heat weld.  
*Maximum Design Pressure: -52.5 psf (See General Limitation #7)*



- Fastening #6: Membrane is mechanically attached using Firestone HD Fasteners and 1" wide Firestone Coiled Metal Batten Strip with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.  
**Maximum Design Pressure: -52.5 psf (See General Limitation #7)**
- Fastening #7: Membrane is mechanically attached using Firestone HD Plus Fasteners and Firestone 3/4" or 1" Polymer Batten Strips with fasteners spaced 6" o.c. along the batten bar in rows spaced 142" o.c. and along one intermediate field row centered in the field of the sheet. Side laps are sealed with a minimum 5" heat weld and the intermediate field row is covered with a minimum 5" wide strip of UltraPly TPO and sealed with a minimum 1.5" heat weld on either side of the batten.  
**Maximum Design Pressure: -135 psf (See General Limitation #7)**
- Fastening #8: Membrane is mechanically attached using Firestone HD Fasteners and Firestone 3/4" or 1" Polymer Batten Strips with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 68" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.  
**Maximum Design Pressure: -82.5 psf (See General Limitation #7)**
- Maximum Design Pressure: See Fastening Options Above



**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3:** Concrete, Non-Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type F(1):** Membrane adhered to primed substrate

**All General and System Limitations Apply.**

**Barrier:** None.  
**Membrane:** Firestone UltraPly TPO XR 100 or UltraPly TPO XR 115 Reinforced Membrane fully adhered with Hot Asphalt with the EVT range at a rate of 20-40 lbs per 100 sq. ft.  
**Maximum Design Pressure:** -500 psf (See General Limitation #9)

**Membrane Type:** Single Ply, TPO, Reinforced  
**Deck Type 3:** Concrete, Non-Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type F(2):** Membrane adhered to primed substrate

**All General and System Limitations Apply.**

**Barrier:** None.  
**Membrane:** Firestone UltraPly TPO XR 100 or UltraPly TPO XR 115 Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive  
**Maximum Design Pressure:** -470 psf (See General Limitation #9)



## CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

## GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

**END OF THIS ACCEPTANCE**



NOA No.: 08-1118.03  
Expiration Date: 05/18/11  
Approval Date: 05/13/09  
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