



**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 96th 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 Lightweight 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. 05-0803.04 and consists of pages 1 through 21.
The submitted documentation was reviewed by Jorge L. Acebo



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ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply Roofing
Material:	TPO
Deck Type:	Lightweight Concrete
Maximum Design Pressure	-467.5 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	Various	TAS 131-95	Reinforced Fleece-backed 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 TPO QuickPrime	1 gallon & # gallon	Proprietary	Primer for TPO QuickSeam Flashing
UltraPly TPO Small and Large Pipe Flashing	Small and large	TAS 131-95	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
EdgeGard System	Various	Various	Flashing materials and assemblies
UltraPly TPO Walkway Pad	X 50'	Proprietary	Recycled thermoplastic Walkway Pads



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Splice Wash SW-100	5 gallon pail	Proprietary	Cleaning and prep solution for TPO
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

Product Name	Product Description	Manufacturer (With Current NOA)
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 3/8" Dens-Deck	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

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
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.
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.



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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
Factory Mutual Research Corporation	3006983	4470	February 8, 2000
	3004249	4470	November 3, 1999
	3003830	4470	May 26, 1999
	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
	3014692	4470	08/05/03
Atlantic & Caribbean Roof Consulting, LLC	ACRC 05-002	TAS 114	01/18/05
	ACRC 02-002	TAS 114	01/07/03
	ACRC 05-001	TAS 114	01/18/05
Trinity ERD	02764.09.05	FM 4470/TAS 114	09/09/05
	02762.03.05	FM 4470/TAS 114	03/30/05
	F8300.07.08	TAS 131/ ASTM D6878	07/30/08
	F11080.09.08	TAS 114	09/18/08
	F10980.09.08	TAS 114	09/17/08

APPROVED ASSEMBLIES:

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 160 psi Elastizell
System Type A(1): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck Prime Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Firestone I.S.O Stick Adhesive in ¾" 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 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

Maximum Design Pressure: -225 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Elastizell
System Type A(2): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck Prime Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Tite-Set Insulation Adhesive applied in 3-3½" 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 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

Maximum Design Pressure: -180 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Celcore
System Type A(3): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck Prime		
Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Tite-Set Insulation Adhesive applied in 3-3½" 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 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

Maximum Design Pressure: -222.5 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Mearlcrete
System Type A(4): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck Prime Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Tite-Set Insulation Adhesive applied in 3-3½" 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 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5 in. heat weld.

Maximum Design Pressure: -240 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Elastizell
System Type A(5): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
tapered ISO 95+ GL Minimum ½" thick start with a ¼ : 12 taper	N/A	N/A

Note: All insulation shall be adhered to the deck with Firestone I.S.O Stick Adhesive in ¾" ribbons spaced 12" o.c. 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 ft²/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 #9)



- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 4I:** Lightweight Concrete, Non-insulated
- Deck Description:** Lightweight Insulating Concrete, minimum 200 psi Elastizell
- System Type E(1):** Membrane mechanically attached.
- Deck:** Minimum 22 ga. Grade E steel deck secured to supports space at maximum 6 ft o.c. with ITW Buildex Traxx/5 spaced at 6" o.c. Side lap fastened with ITW Buildex Traxx/1 spaced at 24" o.c.

All General and System Limitations apply.

- Membrane:** Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck as described below:
- Fastening #1:** Membrane is mechanically attached using Firestone HD+ Fasteners and HD+Seam Plates spaced 12" o.c. within minimum 6" wide laps in rows 9'-6" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure:-45 psf; See General Limitation #7.)
- Fastening #2:** Membrane is mechanically attached using Firestone HD Fasteners and UltraPly TPO Wide Weld Seam Plates spaced 12" o.c. within minimum 6" wide laps in rows 7'-6" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure:-45 psf; See General Limitation #7.)
- Fastening #3:** Membrane is mechanically attached using Firestone HD Fasteners and 1" wide Metal Batten Bars centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 9'-6" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure:-75 psf; See General Limitation #7.)
- Fastening #4:** Membrane is mechanically attached using Firestone HD Fasteners and 3/4" wide Polymer Batten Strips centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 9'-6" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure:-60 psf; See General Limitation #7.)
- Fastening #5:** Membrane is mechanically attached using Firestone HD+ Fasteners and 3/4" wide Polymer Batten Strips centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 9'-6" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure:-75 psf; See General Limitation #7.)
- Fastening #6:** Membrane is mechanically attached using Firestone HD Fasteners and HD Seam Plates 12" o.c. within minimum 6" wide laps. Laps are spaced 90" o.c. and sealed with minimum 1.5" heat weld.
(Maximum Design Pressure:-45 psf; See General Limitation #7.)
- Fastening #7:** Membrane is mechanically attached using Firestone HD Plus Fasteners and HD Plus Seam Plates spaced 12" o.c. within minimum 6" wide laps. Laps are spaced a maximum 114" o.c. and sealed with minimum 1.5" heat weld.
(Maximum Design Pressure:-45 psf; See General Limitation #7.)



Fastening #8: 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 90" o.c. and sealed with minimum 5" heat weld.

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

Fastening #9: Membrane is mechanically attached using Firestone HD Plus Fastener and 1" Metal Battens centered with the minimum 6" wide laps. Fasteners are spaced 6" o.c. along the batten bars. Batten rows are spaced at maximum 90" o.c. and sealed with minimum 5" heat weld.

(Maximum Design Pressure:-97.5 psf; See General Limitation #7.)

Maximum Design Pressure: See Fastening Options Above



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 4I: Lightweight Concrete, Non-insulated

Deck Description: Lightweight Insulating Concrete, minimum 200 psi Elastizell

System Type E(2): Membrane mechanically attached.

Deck: Minimum 22 ga. Grade E steel deck secured to supports space at maximum 6 ft o.c. with ITW Buildex Traxx/5 spaced at 6" o.c. Side lap fastened with ITW Buildex Traxx/1 spaced at 24" o.c.

All General and System Limitations apply.

Barrier: None.

Membrane: Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck as described below:

Fastening: Membrane is mechanically attached using Firestone HD Fasteners and HD 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" wide heat weld.

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



- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 2I:** Lightweight Concrete, Non-insulated
- Deck Description:** Lightweight Insulating Concrete, minimum 200 psi Elastizell
- System Type E(3):** Membrane mechanically attached.
- Deck:** Minimum 22 gauge Grade C steel deck secured to supports space at maximum 6 ft. o.c. with ITW Buildex Traxx/5 spaced 6" o.c. Side laps fastened with ITW Buildex Traxx/1 spaced 24" o.c.

All General and System Limitations apply.

- Membrane:** Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck as described below.
- Fastening #1:** Membrane is mechanically attached using Firestone HD Plus Fasteners and HD Plus Seam Plates spaced 12" o.c. within minimum 6" wide laps. Laps are spaced at maximum 90" o.c. and sealed with a minimum 1.5" heat weld.
(Maximum Design Pressure:-45 psf; See General Limitation #7.)
- Fastening #2:** Membrane is mechanically attached using Firestone HD Plus Fasteners and 1" metal batten centered within minimum 6" wide laps. Fasteners are spaced 6" o.c. along the batten bar. Batten bar rows are spaced 90" o.c. and sealed with a minimum 5" heat weld.
(Maximum Design Pressure:-82.5 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 90" o.c. and sealed with a minimum 5" heat weld.
(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 2I: Lightweight Concrete, Non-insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Elastizell
System Type E(4): Membrane mechanically attached.
Deck: 18-22 ga. steel deck is secured to supports spaced 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps.

All General and System Limitations apply.

Membrane: Mechanically attach Firestone UltraPly QuickSeam R.M.A. Strips through the lightweight and engaged to the steel deck 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. (from FM 3027508)

Or mechanically attach Firestone UltraPly TPO membrane through the lightweight and engaged to the steel deck with Firestone HD Plus fasteners 12" o.c. in Firestone ¾" or 1" Polymer Batten Strip centered within the 6" wide side laps in rows 9-½ ft. o.c. The roof cover laps are sealed with a minimum 5" heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Lightweight Concrete, Non-insulated
Deck Description: Lightweight Insulating Concrete, minimum 200 psi Elastizell
System Type E(5): Membrane mechanically attached.
Deck: 18-22 ga., type B steel decking attached to steel supports spaced 6 ft. o.c. using Traxx 5 fasteners spaced 6" o.c. (at the bottom flute) two fasteners at each bearing attachment point, and with side laps attached using Traxx 1 fasteners spaced 14" o.c.

All General and System Limitations apply.

Membrane: Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck as described below:
Fastening: Firestone HD Plus fasteners spaced 6 in. o.c. along 1" wide Firestone Coiled Metal Batten Strip centered within the 6 in. wide laps spaced 4-½ ft. o.c. The roof cover side laps are sealed with a minimum 5 in. wide heat weld.

Maximum Design Pressure: -112.5 psf (See General Limitation #7)



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- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 2I:** Lightweight Concrete, Non-insulated
- Deck Description:** Lightweight Insulating Concrete, minimum 200 psi Elastizell
- System Type E(6):** Membrane mechanically attached.
- Deck:** 18-22 ga., type B steel decking attached to steel supports spaced 6 ft. o.c. using Traxx 5 fasteners spaced 6" o.c. (at the bottom flute), and with side laps attached using Traxx 1 fasteners spaced 24" o.c.

All General and System Limitations apply.

- Membrane:** Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck 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)
- Maximum Design Pressure:** See Fastening Options Above



- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 2I:** Lightweight Concrete, Non-insulated
- Deck Description:** Lightweight Insulating Concrete, minimum 200 psi Elastizell
- System Type E(7):** Membrane mechanically attached.
- Deck:** 18-22 ga., Grade 80 steel decking attached to steel supports spaced 6 ft. o.c. using Traxx 5 fasteners spaced 6" o.c. (at the bottom flute), and with side laps attached using Traxx 1 fasteners spaced 24" o.c.

All General and System Limitations apply.

- Membrane:** Firestone UltraPly TPO mechanically fastened through the lightweight concrete and engaged to the steel deck as described below:
- Fastening #1:** Membrane is mechanically attached using Firestone HD Fasteners and HD 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: -52.5 psf (See General Limitation #7)
- Fastening #2:** 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 #3:** 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 #4:** 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 4: Lightweight Concrete, Non-insulated
Deck Description: Elastizell Lightweight Insulation Concrete, minimum 300 psi. A 1/8" thick slurry coat of LWC is followed by 1" EPS Hol-E – Board and a 2" LWC top coat.
System Type F(1): Membrane fully adhered to LWC deck.
Deck: 22 ga, type B, G-90 finished, 1.5" vented steel deck attached to supports at 6 ft spans using #12-24 x 1.25" hex head Tek screws spaced 6" o.c. (each flue) Side laps attached with #14 x 1" hex head Tek screws spaced 12" o.c.

All General and System Limitations apply.

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 ft²/gal.

Maximum Design Pressure: -67.5 psf (See General Limitation #9).

Membrane Type: Single Ply, TPO Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Elastizell Lightweight Insulation Concrete, minimum 300 psi. A 1/8" thick slurry coat of LWC is followed by 1" EPS Hol-E – Board and a 2" Lightweight Concrete top coat. Supplemental attachment includes Firestone HD fasteners with 3" Firestone Insulation Fastening Plates through Lightweight Concrete to steel deck at 1 per 2ft.²
System Type F(2): Membrane fully adhered to LWC deck.
Deck: 22 ga, type B, G-90 finished, 1.5" vented steel deck attached to supports at 6 ft spans using #12-24 x 1.25" hex head Tek screws spaced 6" o.c. (each flue) Side laps attached with #14 x 1" hex head Tek screws spaced 12" o.c.

All General and System Limitations apply.

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 ft²/gal.

Maximum Design Pressure: -135 psf (See General Limitation #9).



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Generic Cellular Lightweight Concrete, min. 300 psi. Slurry coat is followed by 1" holey board and a 2" top coat. Supplemental attachment includes Firestone HD fasteners with 3" Firestone Insulation Fastening Plates through Lightweight Concrete to steel deck at 1 per 2ft.² *Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 100 lbf when tested with the FM-90 fasteners in accordance with TAS 105.

System Type F(3): Membrane fully adhered to LWC deck.

Deck: 22 ga, type B, 0.5% vented steel deck attached at 6 ft spans using Tek/5 screws spaced 6" o.c. Side laps attached with Tek/1 screw spaced 12"o.c.

All General and System Limitations Apply.

Membrane: Firestone UltraPly TPO XR Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive, substrate only, at are rate of 70-90 ft²/gallon.

Maximum Design Pressure: -75 psf (See General Limitation #9)

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Celcore Lightweight Concrete, min. 300 psi, min 40.0 pcf. Slurry coat is followed by 1" holey board and a 2" top coat. PVA curing compound applied to LWC at a rate of 0.33 gal/sq. Supplemental attachment includes Firestone HD fasteners with 3" Firestone Insulation Fastening Plates through to steel deck at 1 per 2ft.²

System Type F(4): Membrane fully adhered to LWC deck.

Deck: 22 ga, type B, 0.5% vented steel deck attached at 6 ft spans using Tek/5 screws spaced 6" o.c. Side laps attached with Tek/1 screw spaced 12"o.c.

All General and System Limitations Apply.

Membrane: Firestone UltraPly TPO XR Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive, substrate only, at are rate of 70-90 ft²/gallon.

Maximum Design Pressure: -90 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Celcore Lightweight Concrete, min. 300 psi, min 40.0 pcf. Slurry coat is followed by 1" holey board and a 2" top coat. PVA curing compound applied to LWC at a rate of 0.33 gal/sq.
System Type F(5): Membrane fully adhered to LWC deck.
Deck: 22 ga, type B, 0.5% vented steel deck attached at 6 ft spans using Tek/5 screws spaced 6" o.c. Side laps attached with Tek/1 screw spaced 12" o.c.

All General and System Limitations Apply.

Membrane: Firestone UltraPly TPO XR Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive, substrate only, at are rate of 70-90 ft²/gallon.
Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Elastizell Lightweight Insulation Concrete, minimum 300 psi. A 1/8" thick slurry coat of LWC is followed by 1" EPS Hol-E – Board and a 2" LWC top coat.
System Type F(6): Membrane fully adhered to LWC deck.
Deck: 22 ga. X 1-5" deep corrugated, marlin type B, vented, G-90 finish steel deck attached at 6 ft spans using #12-24 x 1 1/4" hex head Tek screws spaced 6" o.c. Side laps attached with #14-1" Tek screws spaced 12" o.c.

All General and System Limitations Apply.

Membrane: Firestone UltraPly TPO XR Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive, substrate only, at are rate of 70-90 ft²/gallon.
Maximum Design Pressure: -82.5 psf (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Generic Cellular Lightweight Concrete, min. 200 psi. Slurry coat is followed by 1" holey board and a 2" top coat. *Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 95 lbf when tested with the FM-90 fasteners in accordance with TAS 105.
System Type F(7): Membrane fully adhered to LWC deck.
Deck: Min. 2500 psi structural concrete

All General and System Limitations Apply.

Membrane: Firestone UltraPly TPO XR Reinforced Membrane fully adhered with Firestone XR Bonding Adhesive, substrate only, at a rate of 70-90 ft²/gallon.

Maximum Design Pressure: -467.5 psf (See General Limitation #9)



LIGHTWEIGHT 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.: 08-1118.04
Expiration Date: 05/18/11
Approval Date: 05/13/09
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