MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
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MIAMI, FLORIDA 33130-1563
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NOTICE OF ACCEPTANCE (NOA)

Firestone Building Products Company
310 East 96th Street
Indianapolis, IN 46240

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 (MD) Single Ply Roof Systems over Lightweight Concrete Deck

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 consists of pages 1 through 8.
The submitted documentation was reviewed by Jorge L. Acebo.

PRODUCT CONTROL ACCEPTED

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	TPO
Deck Type:	Lightweight
Maximum Design Pressure	**-235 psf**

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

Product Name	Dimensions	Test Specifications	Product Description
Firestone UltraPly TPO (MD)	45", 75", 96", 120" or 148" wide x 100' long x 45, 60, 70 or 80 mils thick	TAS 131	Polyester reinforced Thermoplastic Olefin single ply membrane.
UltraPly Bonding Adhesive (MD)	5 gallon pails	Proprietary	Solvent based, contact adhesives for bonding of roof membrane to substrate.
Firestone Metal Batten Strip	1" wide x 0.046" thick x 10 ft. long	TAS 110	Batten bar for mechanical attachment of membrane
Firestone Polymer Batten Strip	1" wide x 0.05" thick x 250' long. Holes pre-punched 6" o.c.	Proprietary	Batten strip for mechanical attachment of membrane
Firestone ISO Twin Pack		Proprietary	Insulation Adhesive

APPROVED FASTENERS:

Product	Product Description	Manufacturer (With current NOA)
Firestone Fasteners	Insulation and membrane fasteners	Firestone Building Products

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
IRT-ARCON, Inc.	01-031/032/033/034	Wind Uplift, TAS 114	10/12/01
	01-012	(FMRC 4470)	04/26/01
Exterior Research & Design, LLC.	8054.02.02-1	Physical Properties TAS 131	02/22/02
Momentum Technologies, Inc.	EX30M3B	Physical Properties	06/17/04
Underwriters Laboratories, Inc.	01NK14490	Fire Classification	06/01/01
	96NK22037	TAS 114, (UL 790)	03/10/97
	01NK25823	Wind Uplift, TAS 114, (UL 1897)	07/02/01
	02NK47751	Fire Classification	10/10/03
	04NK04226	Fire Classification	11/12/04

APPROVED ASSEMBLIES:

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Min. 200 psi lightweight insulating concrete

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	Fastener Density/ft^2	Fastener Type
ACFoam II, H-Shield, ENRGY 2, ENRGY 3, ISO 95+GL Minimum 1.0" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Top Insulation Layer	Fastener Density/ft^2	Fastener Type
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full coating of OlyBond Adhesive Fastener at a rate of 1 gal/sq. 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.

Membrane: UltraPly TPO (MD) adhered to insulation using UltraPly Bonding Adhesive (MD) applied at 30 ft^2/gal (0.7 m^2/L) to both the substrate and the bottom side of the roof cover for a combined rate of 60 ft^2/gal (1.5 m^2/L)

Maximum Design Pressure: **-202.5 psf** (See General Limitation #9)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 4I:	Lightweight Concrete, Insulated
Deck Description:	Min. 200 psi lightweight concrete
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	Fastener Density/ft^2	Fastener Type
ACFoam II, H-Shield, ISO 95+GL Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	Fastener Density/ft^2	Fastener Type
High Density Wood Fiberboard Minimum 1.0" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 Adhesive Fastener. 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.

Membrane:	UltraPly TPO (MD) adhered to insulation using UltraPly Bonding Adhesive (MD) applied to both the substrate and the bottom side of the roof cover for a combined rate of 65 ft^2/gal (1.6 m^2/L)
Maximum Design Pressure:	**-202.5 psf** (See General Limitation #9)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 4I:	Lightweight Concrete, Insulated
Deck Description:	Min. 200 psi lightweight concrete
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:

Insulation Layer	Fastener Density/ft^2	Fastener Type
ACFoam II, H-Shield, ENRGY 3, ISO 95+GL Minimum 1.0" thick or tapered	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" – 1" wide beads 12" o.c. of OlyBond 500 Adhesive Fastener. 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.

Membrane:	UltraPly TPO (MD) adhered to insulation using UltraPly Bonding Adhesive (MD) applied to both the substrate and the bottom side of the roof cover for a combined rate of 65 ft^2/gal (1.6 m^2/L)
Maximum Design Pressure:	**-90 psf** (See General Limitation #9)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 4	Lightweight Concrete, Non-Insulated, New Construction
Deck Description:	Cellular lightweight concrete over 18-22 ga. Steel deck
System Type E:	Mechanically attached roof cover

All General and System Limitations apply.

Deck:	18-22. Type B [1.5" deep (38 mm)] vented steel deck secured to 0.25 in (6 mm) structural supports spaced maximum 5 ft (1.8 m) o.c. with weld-washers and 5/8" puddle welds at every bottom flute. Steel deck side laps are attached 24" (610 mm) o.c. with #10 TEK screws.
Lightweight Concrete:	Approved cellular lightweight concrete cast to a minimum thickness of 2 inches, with or without polystyrene insulation.
Membrane:	UltraPly TPO (MD) mechanically attached through the lightweight concrete to the underlying steel deck as follows:
Fastening:	Fasteners installed through lightweight concrete to steel deck. UltraPly TPO (MD) membrane secured with Firestone HD Fasteners spaced max 6" o.c. through the Firestone Polymer Batten Strip. The batten strip and fasteners are placed within min. 4.5" wide laps are spaced at a max 143.5" o.c. and sealed with a min. 0.75" wide heat weld on the inside of the lap and a min. 1" wide heat weld on the outside of the lap.
Maximum Design Pressure:	**-90 psf;** (See General Limitation #7)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 4	Lightweight Concrete, Non-Insulated, New Construction
Deck Description:	Cellular lightweight concrete over Structural Concrete Deck
System Type F:	Mechanically adhered

All General and System Limitations apply.

Deck:	Structural Concrete Deck
Range II Elastizell Lightweight Insulating Concrete:	Minimum 200psi compressive strength cast in accordance with Elastizell published application procedures with or without polystyrene
	Minimum 1/8" thick slurry cast on the deck followed by minimum 1" thick Apache holey Board or minimum 2" thick Star-R-Foam smooth EPS Board followed by minimum 2" topcoat.
	Elastizell ZEL-ERATOR is applied by spray or roller to the finished deck surface at 200 square feet per gallon and allowed to dry to the touch.
Membrane:	UltraPly TPO (MD) fully adhered with UltraPly Bonding Adhesive (MD). A primer coat of adhesive is applied at a rate of 120 sq. ft. per gallon and allowed to dry. Once dry, this is followed by a second coat applied to both, the primed LWC surface and to the backside of the TPO membrane at a rate of 120 sq. ft. per gallon per side (60 sq. ft. per gallon total)
Maximum Design Pressure:	**-235 psf;** (See General Limitation #9)

LIGHTWEIGHT INSULATING CONCRETE 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 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 250 psi.

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. 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.)**

END OF THIS ACCEPTANCE