MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

DURO-LAST a division of Holcim Solutions and Products US, LLC
525 Morley Drive
Saginaw, MI 48601

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section 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 Section (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. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section 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 including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: DURO-LAST Single Ply PVC 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.

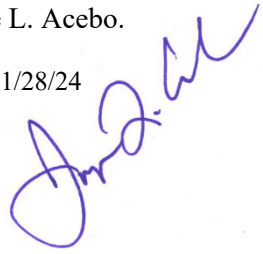
TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this 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. 23-0509.07 and consists of pages 1 through 14.
The submitted documentation was reviewed by Jorge L. Acebo.

11/28/24



MIAMI-DADE COUNTY APPROVED

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Lightweight Concrete
Maximum Design Pressure: -486.7 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Duro-Last Membrane	.037" thick, Various widths x 150 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane.
Duro-Last Membrane	.045" thick, Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane.
Duro-Last Membrane	.057" thick, Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane.
Duro-Fleece Membrane	.047" thick, Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Fleece Membrane	.056" thick, Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Fleece Membrane	.080" thick, Various widths x 65 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Tuff Membrane	045” thick Vaious widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Tuff Membrane	.057” thick Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane.
Duro-Tuff Membrane	.080” thick Various widths x 65 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane.
Duro-Blue Separation Slip Sheet	4 mil x 20’ x 360’; 4 mil x 20’x 100’	N/A	Separation slip sheet produced from coextruded polyethylene film.
Duro-Last Duro-Weave Separation Slip Sheet	2.5 mil x 12’ x 328’	N/A	Separation slip sheet produced from high density polyethylene tapes and coated on one side with low density polyethylene.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
N/A	N/A	N/A

APPROVED FASTENERS/ADHESIVES:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last #15 Extra Heavy Duty Drill Point Fastener	Corrosion resistant, drill point with a #3 Phillips truss head.	Various Lengths	DURO-LAST a division of Holcim Solutions and Products US, LLC
2.	Duro-Last Poly-Plate	Round plastic stress plates.	2” round	DURO-LAST a division of Holcim Solutions and Products US, LLC
3.	Duro-Last SB IV	Low VOC solvent-based membrane adhesive.	5 gal. pail	DURO-LAST a division of Holcim Solutions and Products US, LLC
4.	Duro-Fleece CR-20 Adhesive	Dual component, low-rise polyurethane foam adhesive.	Kit covers 2,000 ft^2	DURO-LAST a division of Holcim Solutions and Products US, LLC

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
FM Approvals	3Y5A6.AM	Class 4470	03-10-95
	2M4A8 .AM	Class 4470	03-05-87
	3Y5A6.AM	Class 4470	03-10-95
	1X2A7 .AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3008342	Class 4470	10-19-00
	3040741	Class 4470	10-17-11
	3032172	Class 4470	06-12-09
	3023458	Class 4470	07-18-06
	3050118	Class 4470	01-20-14
UL LLC	R10128	UL790	09-19-24
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07
PRI Construction Materials Technologies, LLC	DLRI-018-02-01	FM 4474/TAS 114	09-27-12
	DLRI-021-02-01.12	ASTM D1761/D1876 TAS 117-B	06-27-17
	DLRI-077-02-02	FM 4474/TAS 114 J	05-05-15
	DLRI-079-02-01.1	FM 4474/TAS 114 J	08-08-17
	DLRI-082-02-01	FM 4474/TAS 114 J	07-22-15
NEMO ETC, LLC	4r-DL-19-SSTHP-01.A.R2	ASTM D4434	04-29-20
	4r-DL-19-SSTHP-01.B	ASTM D4434	04-29-20
	4p-DL-23-SSLAP-01.A	Various properties	06-09-23

DECK STRESS ANALYSIS CALCULATIONS/REPORTS

Engineer/Agency	Identifier	Assemblies	Date
Zachary R. Priest, P.E.	Signed/Sealed	F(2), F(3)	08/16/17
	Calculations	E	08/08/17

APPROVED ASSEMBLIES:

Membrane Type: Single Ply, PVC

Deck Type 4: Lightweight Concrete Decks, Non-Insulated

Deck Description: Min. 329 psi cellular lightweight concrete composed of foaming agent, Portland Cement and water poured-in-place. 1/8" slurry coat with 1" EPS board; 2" top coat applied.

System Type E: Membrane adhered to LWC deck.

Deck: Minimum 26 ga. HD-Dek, min. Grade 80 vented steel deck installed over structural supports spaced 5-ft. o.c. attached with 5/8" diameter puddle welds with weld washers. Deck side laps stitched 15" o.c. with ¼"-14 x 7/8" HWH screws.
Or
Structural Concrete

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Separation Sheet: (Optional) One ply of Duro-Blue Separation Slip Sheet or Duro-Weave Separation Slip Sheet applied as per manufacturers installation instructions.

Membrane: Minimum 40-mil Duro-Last membrane shall be mechanically fastened with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly-Plates attached 6-inch o.c. in rows spaced 60 in. o.c. Minimum 3" wide laps are sealed with minimum 1.5" heat weld.

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

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Minimum 273 psi compressive strength Elastizell cellular lightweight concrete cast with Zell-Crete Fibers. Optional minimum 1" thick EPS may be encapsulated into the lightweight concrete.
System Type F(1):	Membrane adhered to LWC deck.
Deck:	Structural concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	Duro-Last membrane fully adhered with Duro-Last SB IV applied at a rate of 60 ft^2/gal. Laps sealed with a minimum 1.5 in. heat weld. **(Maximum Design Pressure -90 psf. General Limitation #9)** Or Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last WB II Adhesive applied at 140 ft^2/gal. Laps sealed with a minimum 1.5 in. heat weld. **(Maximum Design Pressure -75 psf. General Limitation #9)**
Maximum Design Pressure:	See adhesive options above

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Min. 342 psi cellular lightweight concrete composed of Celcore MF with Celcore HS Rheology Modifying Admixture, portland cement, water, and topped with Celcore PVA curing compound. Steel deck is treated with Celcore S-1 broom applied to the deck in a continuous film prior to placement of the above LWIC. 1/4" slurry coat with 1" EPS board; 2" top coat applied. Curing compound applied after setting of top coat at 300 ft^2/gal.
System Type F(2):	Membrane adhered to LWC deck.
Deck:	22 ga. Type B, Grade 33 vented steel deck installed over structural supports spaced 6-ft. o.c. attached with 5/8" diameter puddle welds to structural supports at each flute; Deck side laps stitched 18" o.c with 1/4'-14 x 7/8" HWH screws. Or Structual Concrete **This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.**

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	One ply of Duro-Last membrane or Duro-Tuff fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft^2/gal. (apply 120 ft^2/gal. to both the membrane and substrate). Laps are sealed with a minimum of 1.5" wide heat weld. Or One ply of Duro-Fleece membrane membrane adhered with Duro-Fleece CR-20 Membrane Adhesive applied in a splatter pattern applied at a rate of 8 lbs./100 ft^2. Laps are sealed with a minimum of 1.5" wide heat weld.
Maximum Design Pressure:	-82.5 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Min. 391 psi cellular lightweight concrete composed of Celcore MF with Celcore HS Rheology Modifying Admixture, portland cement, water, and topped with Celcore PVA curing compound. Steel deck is treated with Celcore S-1 broom applied to the deck in a continuous film prior to placement of the above LWIC. 1/4" slurry coat with 1" EPS board; 2" top coat applied. Curing compound applied after setting of top coat at 300 ft2/gal.
System Type F(3):	Membrane adhered to LWC deck.
Deck:	22 ga. Type B, Grade 33 vented steel deck installed over structural supports spaced 6-ft. o.c. attached with 5/8" diameter puddle welds to structural supports at each flute; Deck side laps stitched 18" o.c with 1/4'-14 x 7/8" HWH screws. Or Structual Concrete **This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.**

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	One ply of Duro-Last membrane or Duro-Tuff Fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft^2/gal. (apply 120 ft^2/gal. to both the membrane and substrate). Laps are sealed with a minimum of 1.5" wide heat weld. Or One ply of Duro-Fleece membrane membrane adhered with Duro-Fleece CR-20 Membrane Adhesive applied in a splatter pattern applied at a rate of 8 lbs./100 ft^2. Laps are sealed with a minimum of 1.5" wide heat weld.
Maximum Design Pressure:	-90 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Minimum 273 psi Elastizell cellular lightweight concrete with Zell-Crete Fibers
System Type F(4):	Membrane fully adhered to LWC deck.
Deck:	Structural Concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last WB II Adhesive applied at a rate of 140-ft2/gal. Laps are sealed with a minimum 1.5 in. heat weld.
Maximum Design Pressure:	-75 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Minimum 273 psi Elastizell cellular lightweight concrete with Zell-Crete Fibers
System Type F(5):	Membrane fully adhered to LWC deck.
Deck:	Structural Concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft^2/gal. (apply 120 ft^2/gal. to both the membrane and substrate). Laps are sealed with a minimum of 1.5" wide heat weld.
Maximum Design Pressure:	-90 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Min. 300 psi cellular lightweight concrete composed of Celcore MF with Celcore HS Rheology Modifying Admixture, Portland cement, water, and topped with Celcore PVA curing compound. 1/4" slurry coat with 1" EPS board; 2" top coat applied.
System Type F(6):	Membrane fully adhered to LWC deck.
Deck:	Structural Concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	One ply of Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 140 ft^2/gal. to substrate only. Laps are sealed with a minimum of 1.5" wide heat weld. Or One ply of Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 150 ft2/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure:	-285 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Min. 130 psi cellular lightweight concrete composed of foaming agent, Portland cement and water. 1/4" slurry coat with 1" EPS board; 2" top coat applied.
System Type F(7):	Membrane fully adhered to LWC deck.
Deck:	Structural Concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	One ply of Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 140 ft^2/gal. to substrate only. Laps are sealed with a minimum of 1.5" wide heat weld. Or One ply of Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 150 ft2/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure:	-457.5 psf. (See General Limitation #9)

Membrane Type:	Single Ply, PVC
Deck Type 4:	Lightweight Concrete Decks, Non-Insulated
Deck Description:	Min. 200 psi Cellular lightweight concrete composed of Elastizell Foam Agent, Zell-Crete Fibers, Portland cement and water. 1/4" slurry coat with 1" EPS board; 2" top coat applied.
System Type F(8):	Membrane fully adhered to LWC deck.
Deck:	Structural Concrete

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

Membrane:	One ply of Duro-Last membrane or Duro-Tuff membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 140 ft^2/gal. to substrate only. Laps are sealed with a minimum of 1.5" wide heat weld. Or One ply of Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 150 ft2/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure:	-486.7 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 117 and/or 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 si referenced consult current lightweight insulating concrete NOA for specific deck construction and limitations. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 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 sidelap 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 Engineer, 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 with 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 61G20-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE