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 Roofing, Inc.
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 Cementitious Wood Fiber 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. 12-0516.16 and consists of pages 1 through 13.
The submitted documentation was reviewed by Jorge L. Acebo.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	PVC
Deck Type:	Cementitious Wood Fiber
Maximum Design Pressure	-150 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Duro-Last Membrane	.037" thick, fabricated in sheets up to 3000 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.045" thick, fabricated in sheets up to 2000 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Membrane	.057" thick, fabricated in sheets up to 1800 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced roofing membrane: white, tan or gray.
Duro-Last Duro-Fleece Membrane	.047" thick, fabricated in sheets up to 2000 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Last Duro-Fleece Membrane	.056" thick, fabricated in sheets up to 1800 sq. ft.	ASTM D 4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Last Fascia Bar	1 ¾" x 10'; 4" x 10'		Extruded vinyl drip edge with holes punched 8" o.c..
Duro-Last Fascia Bar Cover	1 ¾" x 10'; 4" x 10'		Extruded decorative cover for Duro-Last Fascia Bar: white, tan or gray.
Duro-Last Fascia	2" & 4"	TAS 111	Kynar finish Galvalume, 24 ga., cover
Duro-Last Snap Coping	12"	TAS 111	Kynar finish Galvalume, 24 ga., coping
Duro-Last 2-Piece Metal "T-Edge"		TAS 111	Kynar finish Galvalume, 24 ga., with vinyl skirt
Duro-Last 2-Piece Compression Edge		TAS 111	Kynar finish Galvalume, 24 ga.
Duro-Last Vinyl Coated Metal	4' x 10' .043" thick	G-90	G-90 galvanized steel, laminated with Duro-Last Vinyl Film.
Duro-Last Drip Edge	2" face x 10'; 4" face x 10';		Extruded vinyl drip edge with holes punched 8" o.c.

Product	Dimensions	Test Specification	Product Description
Duro-Last Two-Way Roof Vents			Injection molded two-way roof vents with a Duro-Last membrane skirt.
Duro-Last Gravel Stop	2" face x 10'; 4" face x 10';		Extruded vinyl gravel stop with holes punched 8" o.c.
Roof-Trak III Walk Pads	30" x 60" .125" thick		Extruded vinyl walk way pads manufactured from Duro-Last membrane.
Duro-Last WB II Adhesive	5 gal. pail		Polymeric waterborne membrane adhesive.
Duro-Last Tab Sealer 4725			Solvent-based contact-bonding agent.
Duro-Last Accessories	Various	ASTM D 4434	Custom fabricated accessories for parapets and penetrations: Curb flashing, Inside & Outside Corner, Scuppers, Drain Boot, Parapet Flashing, Stack Flashing; all for use in the Duro-Last roofing systems.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam II, ACFoam III	Polyisocyanurate foam insulation	Atlas Roofing Corp.
ISO 95+ GL	Polyisocyanurate foam insulation	Firestone Building Products Company, LLC
EPS	Type IX Expanded polystyrene with a minimum density of 1.8 pcf	Generic
XPS	Type IV Extruded polystyrene with a minimum density of 1.6 pcf	Generic
Type X Gypsum	Gypsum board	Generic
DensDeck	Silicon treated gypsum	Georgia-Pacific Gypsum LLC
ENRGY-3	Polyisocyanurate foam insulation	Johns Manville
Multi-Max FA-3, Thermaroof Composite-3	Polyisocyanurate foam insulation	Rmax Operating, LLC
SECUROCK Gypsum-Fiber Roof Board	Fiber reinforced insulation board	United States Gypsum Corporation
Duro-Guard Iso II-A, Duro-Guard Iso III-A	Polyisocyanurate foam insulation	Duro-Last Roofing, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last Duro-Coated Hex Head Screws	Roofing and insulation fasteners, Duro-Coated with #3 Phillips head.	Various Lengths	Duro-Last Roofing, Inc.
2.	Duro-Last 3" Metal Plates	Galvalume steel stress plates.	3" square	Duro-Last Roofing, Inc.
3.	Duro-Last Insulation Plates	Round plastic stress plates.	3" round	Duro-Last Roofing, Inc.
4.	Duro-Last Poly-plates	Round plastic stress plates.	2" round	Duro-Last Roofing, Inc.
5.	Duro-Last Liquid Auger Fastener	Composite nylon and fiberglass fastener/plate system with epoxy injection	Various Lengths	Duro-Last Roofing, Inc.
6.	Polymer GypTec	Glass reinforced nylon fastener	Various Lengths	OMG, Inc.
7.	3" GypTec Plates	Galvalume steel stress plates.	3" round	OMG, Inc.
8.	Polymer GypTec Insulation Plate	AZ-55 Galvalume plate for use with the Polymer GypTec fastener.	3" round	OMG, Inc.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research Corporation	J.I. 3Y5A6.AM	Class 4470	03-10-95
	4D6A4.AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3008342	Class 4470	10-19-00
	3030225	Class 4470	06-18-07
	3026508	Class 4470	05-03-07
	3040741	Class 4470	10-17-11
	3023458	Class 4470	07-18-06
Exterior Research & Design, L.L.C.	#02737.03.05-1	TAS 114- J	03.21.05
	02732.09.04	ASTM D4434	09-28-04
	02742.10.05	TAS 117(A) & (B)	10-12-05
	02745.08.06	TAS 117(A)	08-04-06
Trinity|ERD	02750.02.08-R2	ASTM D4434 / AC75	08-03-12
	D42370.07.12	ASTM D1084 / TAS 117	07-11-12
	D35210.08.11-R1	ASTM D4434	09-17-12
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07
PRI Construction Materials Technologies, LLC	DLRI-029-02-01	TAS 114-J	10-25-12

APPROVED ASSEMBLIES:

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type A(1): All layers of insulation adhered with approved adhesive, membrane fully adhered.

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.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with ¾" wide beads of Insta-Stik™ Quik Set Insulation Adhesive spaced 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Duro-Last membrane or Duro-Last Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive at a minimum rate of 0.7 gal/sq to substrate only. Membrane rolled into wet adhesive. Laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type A(2): All layers of insulation adhered with approved adhesive, membrane fully adhered.

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.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ISO 95+ GL, ACFoam II, Duro-Guard Iso II-A, ENRGY-3, Multi-Max FA-3 Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with ¾" wide beads of Insta-Stik™ Quik Set Insulation Adhesive spaced 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Duro-Last membrane or Duro-Last Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive at a minimum rate of 0.7 gal/sq to substrate only. Membrane rolled into wet adhesive. Laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(1): All layers of insulation are preliminarily attached to roof deck as specified below. Membrane is mechanically attached to deck through the insulation layers.

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.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, Duro-Guard Iso II-A, ENRGY-3, Approved XPS and/or EPS		
Minimum 1" thick	**5**	1:4 ft²
	5	1:6.4 ft²

Note: Insulation layers above shall be mechanically attached with preliminary fastening as specified above. All Insulation panels shall also be mechanically fastened along with the roof membrane as specified below. See Roofing Application Standard RAS 117 for fastening details.

Vapor Barrier: (Optional) Any UL or FM approved vapor barrier.

Fire Barrier: Atlas Roofing Corporation FR-10®, ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 57" with Polymer GypTec fasteners and Insulation plates spaced 12" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

Membrane, 27" tabs: Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Polymer GypTec fasteners and Insulation plates spaced 18" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(2): Membrane fastened over preliminarily fastened insulation. All layers of insulation and membrane simultaneously attached.

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.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, ACFoam III, Duro-Guard Iso II-A, Duro-Guard Iso III-A, ENRGY-3, Any Approved XPS and/or EPS Minimum 2" thick	**N/A**	**N/A**

Note: Insulation layer above shall be mechanically attached with preliminary fastening. All Insulation panels shall be mechanically fastened along with the roof membrane as specified below. See Roofing Application Standard RAS 117 for fastening details.

Membrane, 57" tabs:

Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -45 psf; See General Limitation #7)

Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealer 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft^2/gal (two-sided application). Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -60 psf; See General Limitation #7)

Maximum Design Pressure: See fastening above

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(3): Membrane fastened over preliminarily fastened insulation. All layers of insulation and membrane simultaneously attached.

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.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-3, ISO-95+ GL, Multi-Max FA-3, ACFoam-II, ACFoam-III, Duro-Guard Iso II-A, Duro-Guard Iso III-A, Thermaroof Composite-3, Any Approved XPS and/or EPS Minimum 1.5" thick	**N/A**	**N/A**

Note: Insulation layer above shall be mechanically attached with preliminary fastening. All Insulation panels shall be mechanically fastened along with the roof membrane as specified below. See Roofing Application Standard RAS 117 for fastening details.

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealer 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft^2/gal (two-sided application). Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -67.5 psf (See General Limitation # 7)

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(4): Membrane fastened over preliminarily fastened insulation. All layers of insulation and membrane simultaneously attached.

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.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Duro-Guard Iso II-A Minimum 1.5" thick	**N/A**	**N/A**

Note: Insulation layer above shall be mechanically attached with preliminary fastening. All Insulation panels shall be mechanically fastened along with the roof membrane as specified below. See Roofing Application Standard RAS 117 for fastening details.

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners & Plates spaced 6" o.c. maximum, through the insulation and into the deck. 6" wide laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(5): Membrane fastened over preliminarily fastened insulation. All layers of insulation and membrane simultaneously attached.

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.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Duro-Guard Iso II-A Minimum 1.0" thick	**N/A**	**N/A**

Note: Insulation layer above shall be mechanically attached with preliminary fastening. All Insulation panels shall be mechanically fastened along with the roof membrane as specified below. See Roofing Application Standard RAS 117 for fastening details.

Membrane, 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Duro-Last Liquid Auger Fasteners & Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealer 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft^2/gal (two-sided application). 6" wide laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 5: Cementitious Wood Fiber, Non-Insulated

Deck Description: Cementitious wood fiber

System Type E: Membrane mechanically attached to roof deck.

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.

Vapor Barrier:	(Optional) Any UL or FM approved vapor barrier.
Fire Barrier:	Atlas Roofing Corporation FR-10®, ¼" DensDeck, ½" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).
Membrane, 57" tabs:	Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 57" with Polymer GypTec fasteners and Insulation plates spaced 12" o.c. maximum, into the deck. Laps are sealed with a minimum 1.5" wide heat weld.
Membrane, 27" tabs:	Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 27" with Polymer GypTec fasteners and Insulation plates spaced 18" o.c. maximum, into the deck. Laps are sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure:	-45 psf (See General Limitation #9)

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 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE