



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION

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www.miamidade.gov/economy

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 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 renews and revises NOA No. 22-0411.06 and consists of pages 1 through 27.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA-No.: 23-0509.06
Expiration Date: 08/22/28
Approval Date: 09/07/23
Page 1 of 27

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Materials: PVC
Deck Type: Concrete
Maximum Design Pressure: -502.5 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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 Various 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



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
ENRGY 3	Polyisocyanurate foam insulation	Johns Manville
Duro-Guard EPS	Expanded polystyrene	Duro-Last Roofing, Inc.
DensDeck Prime	Silicon treated gypsum	Georgia-Pacific Gypsum LLC
SECUROCK Gypsum-Fiber Roof Board	Fiber reinforced insulation board	United States Gypsum Corporation
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC
H-Shield CG	Polyisocyanurate foam core laminated to a coated fiberglass facer	Hunter Panels, LLC
Duro-Guard ISO II-H, and Tapered	Polyisocyanurate foam insulation	Duro-Last Roofing, Inc.
Duro-Guard ISO III-H, and Tapered	Polyisocyanurate foam core laminated to a coated fiberglass facer	Duro-Last Roofing, Inc.
Duro-Guard ISO II-A, and Tapered	Polyisocyanurate foam insulation	Duro-Last Roofing, Inc.
Duro-Guard ISO III-A, and Tapered	Polyisocyanurate foam core laminated to a coated fiberglass facer	Duro-Last Roofing, Inc.
Duro-Guard ISO II-G	Polyisocyanurate insulation with fiberglass reinforced organic facers	Duro-Last Roofing, Inc.
Multi-Max FA-3	Polyisocyanurate foam insulation	Rmax Operating, LLC
DEXcell FA Glass Mat Roof Board	Gypsum core, heavy duty glass mat facer insulation/roof board	National Gypsum Company



APPROVED FASTENERS/ADHESIVES:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last Poly-Plate	Round plastic stress plates.	2" round	Duro-Last Roofing, Inc.
2.	Duro-Last #14 Concrete Screws	Corrosion resistant, drill point fastener with #3 Phillips head.	Various Lengths	Duro-Last Roofing, Inc.
3.	Duro-Last Fluted Concrete Nails	Corrosion resistant, 0.22" shank with a flat top pan head.	Various Lengths	Duro-Last Roofing, Inc.
4.	Duro-Last Cleat Plate	0.035" thick galvalume stress plates.	2.4"	Duro-Last Roofing, Inc.
5.	Duro-Last #14 HD Fastener	Roofing and insulation fasteners, Duro-Coated with #3 Phillips head	Various Lengths	Duro-Last Roofing, Inc.
6.	Duro-Bond Plate 1302	Round, coated galvalume plate (Gold and Black)	3" round	Duro-Last Roofing, Inc.
7.	Dekfast DF-#12-PH3 Fastener	#3 Phillips drive, drill point fastener for use with steel and wood decks	Various	SFS Group USA, Inc.
8.	Dekfast DF-#15-PH3 Fastener	#3 Phillips drive fastener for use with steel, wood and concrete decks	Various	SFS Group USA, Inc.
9.	Isoweld F1-P-6.8-PVC Plate	G-90 steel plate with PVC coating for insulation	3" dia.	SFS Group USA, Inc.
10.	Duro-Grip OlyBond 500	Dual-component polyurethane adhesive	10 gal.	Duro-Last Roofing, Inc.
11.	Duro-Last WB II Adhesive	Polymeric waterborne membrane adhesive.	5 gal. pail	Duro-Last Roofing, Inc.
12.	Duro-Last SB IV	Low VOC solvent-based membrane adhesive.	5 gal. pail	Duro-Last Roofing, Inc.
13.	Duro-Grip Weather-Tite One Step	Insulation Adhesive	1.5 Liter Cartridge	Duro-Last Roofing, Inc.
14.	Duro-Fleece CR-20 Membrane Adhesive	Two-component membrane adhesive.	10 gal.	Duro-Last Roofing, Inc.
15.	Duro-Fleece Membrane Adhesive	Two-component membrane adhesive.	10 gal.	Duro-Last Roofing, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Architectural Testing	B8983.01-106-18	TAS 117(A)	08-27-12
FM Approvals	J.I. 2M4A8 .AM	Class 4470	03-05-87
	J.I. 3Y5A6.AM	Class 4470	03-10-95
	J.I. 1X2A7 .AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3008342	Class 4470	10-19-00
	3023458	Class 4450	06-18-06
	3026128	Class 4450	08-04-06
	3026508	Class 4470	05-03-07
	3006989	Class 4470	02-09-01
	3015816	Class 4470	01-09-03
	3010289	Class 4470	04-13-01
	3014929	Class 4470	05-23-03
	3010987	Class 4470	04-23-02
	3032172	Class 4470	06-12-09
	3040346	Class 4470	09-28-11
	3014692	Class 4470	08-05-03
	3040741	Class 4470	10-17-11
	3054028	Class 4470	05-25-16
	3044466	Class 4470	11-07-12
Trinity ERD	D42320.08.12	TAS 114	08-31-12
	D43030.01.13	TAS 114/TAS 117	03-13-13
	D42320.11.12	TAS 114	11-30-12
	SFS-SC10010.02.16-R1	TAS 114	07-06-16
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07
PRI Construction Materials	DLRI-030-02-01	TAS 114(D)	04-01-13
Technologies, LLC	DLRI-045-02-01	TAS 114(D)	08-24-13
	DLRI-021-02-01.12	ASTM D1761/D1876	06-27-17
		TAS 117(B)	
	DLRI-058-02-01	TAS 114(D)	07-06-14
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	Physical Properties	06-09-23



APPROVED ASSEMBLIES:

Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500-psi structural concrete
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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Multi-Max FA-3 Minimum 1.5" thick	N/A	N/A
ACFoam-III, Duro-Guard ISO III-A Minimum 1.3" thick	N/A	N/A
ISO 95+ GL, H-Shield, H-Shield CG, ENRGY 3, Duro-Guard ISO II-H, Duro-Guard ISO III-H Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered with Duro-Grip CR-20 Adhesive in 1.5 in. ribbons spaced at 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Duro-Last membrane, Duro-Tuff membrane fully adhered to top insulation layer with Duro-Last WB II Adhesive at a minimum rate of 0.7 gal/sq. Laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type:	Single Ply, PVC
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500-psi structural concrete
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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Duro-Guard EPS, Duro-Guard ISO II-A, Duro-Guard ISO II-G, Duro-Guard Iso II-H Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Duro-Grip CR-20 Insulation Adhesive applied 12" o.c. in ¾"-1" wide ribbons. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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 ft²/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 100 ft²/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.
Or
One ply of Duro-Last membrane, or Duro-Last Duro-Tuff Membrane fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft²/gal. (apply 120 ft²/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 adhered with Duro-Fleece CR-20 Membrane Adhesive applied in a splatter pattern applied at a Rate of 8 lbs./100 ft². Laps are sealed with a minimum of 1.5" wide heat weld.

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



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type A(3): 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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Duro-Guard ISO II-A Minimum 0.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DEXcell FA Glass Mat Roof Board Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Duro-Grip CR-20 Insulation Adhesive applied 12" o.c. in ¾"-1" wide ribbons. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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 ft²/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 100 ft²/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.

Or

One ply of Duro-Last membrane fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft²/gal. (apply 120 ft²/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 adhered with Duro-Fleece Membrane Adhesive applied in ¾" ribbons spaced 12" o.c. Laps are sealed with a minimum of 1.5" wide heat weld.

Maximum Design Pressure: -300 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type A(4): 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.

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

Duro-Guard ISO II-A
Minimum 0.5" thick

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

N/A

N/A

Top Insulation Layer

DEXcell FA Glass Mat Roof Board
Minimum ¼" thick

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

N/A

N/A

Note: All insulation shall be adhered to the deck with Duro-Grip OlyBond 500 applied 12" o.c. in ¾"-1" wide ribbons or Duro-Grip WeatherTite One Step Adhesive applied 12" o.c. in ½"-¾" wide ribbons. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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 ft²/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 100 ft²/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.

Or

One ply of Duro-Last membrane fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft²/gal. (apply 120 ft²/gal. to both the membrane and substrate). Laps are sealed with a minimum of 1.5" wide heat weld.

Maximum Design

Pressure:

-382.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type A(5): 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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Duro-Guard ISO II-A Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Oly Bond Classic applied 12" o.c. in ¾"-1" wide ribbons. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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 ft²/gal. to substrate only. Laps are sealed with a minimum of 1.5" wide heat weld.

Or

One ply of Duro-Last membrane or Duro-Last Duro-Tuff fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft²/gal. (apply 120 ft²/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 adhered with Duro-Fleece CR-20 Membrane Adhesive applied in a splatter pattern applied at a Rate of 8 lbs./100 ft². Laps are sealed with a minimum of 1.5" wide heat weld

Maximum Design Pressure: -457.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type A(6): 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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Duro-Guard ISO II-A, Duro-Guard ISO II-G, Duro-Guard ISO II-H, Duro-Guard EPS Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with Duro-Grip CR-20 applied in ¾" to 1" wide ribbons spaced 4" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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 ft²/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 100 ft²/gal. to substrate only. Laps are sealed with a minimum 1.5" wide heat weld.

Or

One ply of Duro-Last membrane, Duro-Last, or Duro-Tuff membrane fully adhere with Duro-Last SB IV Adhesive applied at a minimum rate of 60 ft²/gal. (apply 120 ft²/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 adhered with Duro-Fleece CR-20 Membrane Adhesive applied in a splatter pattern applied at a Rate of 8 lbs./100 ft². Laps are sealed with a minimum of 1.5" wide heat weld.

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



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type C(1): Base layer of insulation loose laid, top layer of insulation mechanically fastened; 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.

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
H-Shield, Duro-Guard ISO II-H Minimum 1.5" thick	2 with 6	See Below

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane or Duro-Tuff membrane shall be welded to the Duro-Bond Plates in the manner and the spacing specified below.

Fastening: Insulation shall be mechanically attached at 6" o.c., in rows spaced a maximum of 60" o.c. Membrane is welded to the Duro-Bond Plate 1302 with RhinoBond Welder. 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 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type C(2): Base layer of insulation loose laid, top layer of insulation mechanically fastened; 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.

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
H-Shield, Duro-Guard ISO II-H Minimum 1.5" thick	5 with 6	See Below

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane and Duro-Tuff membrane shall be welded to the Duro-Bond Plates in the manner and the spacing specified below.

Fastening: Insulation shall be mechanically attached at 6" o.c., in rows spaced a maximum of 48" o.c. Membrane is welded to the Duro-Bond Plate 1302 with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type C(3): Base layer of insulation loose laid, top layer of insulation mechanically fastened; 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.

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
H-Shield, Duro-Guard Iso II-H Minimum 1.5" thick	5 with 6	1:2.67 ft ²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate and density listed above. The Duro-Last membrane or Duro-Tuff membrane shall be welded to the Duro-Bond Plates as specified below.

Fastening: Membrane is welded to the Duro-Bond Plate 1302 with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type C(4): Base layer of insulation loose laid, top layer of insulation mechanically fastened; 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.

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
H-Shield, Duro-Guard ISO II-H Minimum 1.5" thick	5 with 6	1:2 ft ²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate and density listed above. The Duro-Last (.057" min) membrane or Duro Tuff (.080" min) membrane shall be welded to the Duro-Bond Plates as specified below.

Fastening: Membrane is welded to the Duro-Bond Plate 1302 with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type C(5): All layers of insulation simultaneously attached, membrane 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.

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
H-Shield, Duro-Guard Iso II-H Minimum 1½" thick	2 with 6	See below

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

- Membrane with 48" Rows:** Duro-Last membrane (0.037" min.) or Duro-Tuff membrane bonded to Duro-Bond Plate 1302 spaced 6" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -82.5 psf.; See General Limitation #7)
- Duro-Last membrane (0.057" min.) or Duro-Tuff (.080" min) membrane bonded to Duro-Bond Plate 1302 spaced 6" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -90 psf.; See General Limitation #7)
- Duro-Last membrane (0.057" min.) or Duro-Tuff (.080" min) membrane bonded to Duro-Bond Plate 1302 spaced 12" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -45 psf.; See General Limitation #7)
- Membrane with 60" Rows:** Duro-Last membrane (0.057" min.) or Duro-Tuff (.080" min) membrane bonded to Duro-Bond Plate 1302 spaced 6" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -82.5 psf.; See General Limitation #7)
- Membrane with 72" Rows:** Duro-Last membrane (0.037" min.) or Duro-Tuff membrane bonded to Duro-Bond Plate 1302 spaced 6" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -52.5 psf.; See General Limitation #7)
- Membrane with 96" Rows:** Duro-Last membrane (0.057" min.) or Duro-Tuff (.080" min) membrane bonded to Duro-Bond Plate 1302 spaced 6" o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5" wide heat weld.
(Maximum Design Pressure -52.5 psf.; See General Limitation #7)

**Membrane with 120”
Rows:**

Duro-Last membrane (0.057” min.) or Duro-Tuff (.080” min) membrane bonded to Duro-Bond Plate 1302 spaced 6” o.c. with RhinoBond Welder. Laps are sealed with a minimum 1.5” wide heat weld.
(Maximum Design Pressure -45 psf.; See General Limitation #7)

**Maximum Design
Pressure:**

See fastening above.



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Deck, Insulated
Deck Description: 2500 psi structural concrete
System Type C(6): Layer of insulation simultaneously attached, membrane 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.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam II, Duro-Guard ISO II-A Minimum 1-½” thick	7 or 8 with 9	1:4 ft ²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane (0.057” min) shall be bonded to the Isoweld F1-P-6.8-PVC Plates in the manner and spacing specified below.

Fastening: Insulation shall be mechanically attached at 4 ft² per fastener in a 2’ x 2’, staggered grid pattern. Membrane is bonded to the Isoweld F1-P-6.8-PVC Plate with the SFS Isoweld 3000 stand-up tool. Laps are sealed with a minimum 1.5” wide heat weld.

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



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Deck, Insulated
Deck Description: 2500 psi structural concrete
System Type C(7): Layer of insulation simultaneously attached, membrane 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.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam II, Duro-Guard ISO II-A Minimum 1-1/2" thick	7 or 8 with 9	1:3 ft ²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane (0.057" min) shall be bonded to the Isoweld F1-P-6.8-PVC Plates in the manner and spacing specified below.

Fastening: Insulation shall be mechanically attached at 4 ft² per fastener in a 1.5' x 2', staggered grid pattern. Membrane is bonded to the Isoweld F1-P-6.8-PVC Plate with the SFS Isoweld 3000 stand-up tool. Laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -82.5 psf. (See General Limitation #7)



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Deck, Insulated
Deck Description: 2500 psi structural concrete
System Type C(8): Layer of insulation simultaneously attached, membrane 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.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam II, Duro-Guard ISO II-A Minimum 1-½" thick	7 or 8 with 9	1:3 ft ²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane (0.057" min) shall be bonded to the Isoweld F1-P-6.8-PVC Plates in the manner and spacing specified below.

Fastening: Insulation shall be mechanically attached at 12-inches o.c. in rows spaced a maximum of 5 ft. o.c. Membrane is bonded to the Isoweld F1-P-6.8-PVC Plate with the SFS Isoweld 3000 stand-up tool. 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 3I: Concrete Deck, Insulated
Deck Description: 2500 psi structural concrete
System Type C(9): Layer of insulation simultaneously attached, membrane 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.

One or more layers of the following insulations:

<u>Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam II, Duro-Guard ISO II-A Minimum 1-½” thick	7 or 8 with 9	1:3 ft²

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

Membrane: Insulation Layer shall be through fastened to the concrete deck with the fastener and plate listed above. The Duro-Last membrane (0.057” min) shall be bonded to the Isoweld F1-P-6.8-PVC Plates in the manner and spacing specified below.

Fastening: Insulation shall be mechanically attached at 6-inches o.c. in rows spaced a maximum of 5 ft. o.c. Membrane is bonded to the Isoweld F1-P-6.8-PVC Plate with the SFS Isoweld 3000 stand-up tool. Laps are sealed with a minimum 1.5” wide heat weld.

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

Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete

System Type D: 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.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ACFoam II, Duro-Guard Iso II-A, H-Shield, Duro-Guard Iso II-H, ISO 95 +GL, Multi-Max FA-3 Minimum 1/2" thick	N/A	N/A

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.

Membrane: Duro-Tuff membrane shall be mechanically attached at its 6" tabs spaced every 54" with Duro-Last #14 Concrete Screw or Duro-Last Fluted Concrete Nails with Duro-Last Poly Plates or Duro-Last Cleat Plates 6" o.c. through the insulation and into the deck. Fasteners are centered 1.25" from tab edge. 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 3: Concrete Deck, Non-Insulated
Deck Description: 2500-psi structural concrete
System Type F(1): Membrane fully adhered to concrete 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.

Membrane: Duro-Fleece membrane fully adhered with Duro-Fleece CR-20 Adhesive applied in “splatter pattern” at a rate of 8 lbs./100ft². Laps are sealed with a minimum 1.5” wide heat weld.

Maximum Design Pressures: -502.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC
Deck Type 3: Concrete Deck, Non-Insulated
Deck Description: 2500-psi structural concrete
System Type F(2): Membrane fully adhered to concrete 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.

Membrane: Duro-Fleece membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 100 ft²/gal. to substrate only.

Maximum Design Pressures: -502.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC
Deck Type 3: Concrete Deck, Non-Insulated
Deck Description: 2500-psi structural concrete
System Type F(3): Membrane fully adhered to concrete 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.

Membrane: Minimum 40 mil Duro-Last membrane fully adhered with SB IV applied at a rate of 60 ft²/gal. Laps are sealed with a minimum 1.5” wide heat weld.

Maximum Design Pressures: -102.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, PVC
Deck Type 3: Concrete Deck, Non-Insulated
Deck Description: 2500-psi structural concrete
System Type F(4): Membrane fully adhered to concrete 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.

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 ft²/gal. to substrate only. Laps are sealed with a minimum of 1.5" wide heat weld.
Maximum Design Pressures: -127.5 psf. (See General Limitation #9)



CONCRETE DECK SYSTEM LIMITATIONS:

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

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each 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

