



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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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 Wood 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. 17-0202.04 and consists of pages 1 through 23.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 19-0508.01
Expiration Date: 08/22/22
Approval Date: 05/07/20
Page 1 of 23

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Wood
Maximum Design Pressure: -97.5 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-Last Designer Series Membrane	.045" thick Various widths & lengths	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane: Rock-Ply & Shingle-Ply.
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-Fleece Plus Membrane	.047" thick, . Various widths x 100 ft. rolls	ASTM D4434	PVC polymer blend polyester reinforced fleece backed roofing membrane.
Duro-Fleece Plus Membrane	.056" thick, Various widths x 80 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



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last EV	53 mil thick Various widths x 100 ft rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane with KEE films.
Duro-Last EV	60 mil thick Various widths x 100 ft rolls	ASTM D4434	PVC polymer blend polyester reinforced roofing membrane with KEE films.
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
Duro-Fleece CR-20 Adhesive	Kit covers 2,000 ft ²	Proprietary	Dual component, low-rise polyurethane foam adhesive
Duro-Grip CR-20 Adhesive	Kit covers 2,000 ft ²	Proprietary	Two component elastomeric polyurethane froth adhesive for both insulation and cover boards
Duro-Last WB II Adhesive	5 gal. pail	Proprietary	Polymeric waterborne membrane adhesive.
Duro-Last SB IV	5 gal. pail	Proprietary	Low VOC solvent-based membrane adhesive.
Duro-Last Fascia Bar	1 3/4" x 10'; 4" x 10'	N/A	Extruded vinyl drip edge with holes punched 8" o.c.
Duro-Last Fascia Bar Cover	1 3/4" x 10'; 4" x 10'	N/A	Extruded decorative cover for Duro-Last Fascia Bar
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"	N/A	TAS 111	Kynar finish Galvalume, 24 ga., with vinyl skirt
Duro-Last 2-Piece Compression Edge	N/A	TAS 111	Kynar finish Galvalume, 24 ga.
All-Term Edge	N/A	TAS 111	Kynar finish Galvalume, 24 ga. Cover or .040 Al cover, with 22 ga. Base or .040 Al cover with .050 Al base
Duro-Last Drip Edge	2" face x 10'; 4" face x 10';	N/A	Extruded vinyl drip edge with holes punched 8" o.c.
Duro-Last Two-Way Roof Vents	N/A	N/A	Injection molded two-way roof vents with a Duro-Last membrane skirt.
Duro-Last Gravel Stop	2" face x 10'; 4" face x 10';	N/A	Extruded vinyl gravel stop with holes punched 8" o.c.
Roof-Trak III Walk Pads	30" x 60" .125" thick	N/A	Extruded vinyl walk way pads manufactured from Duro-Last membrane.
Duro-Last Tab Sealer 4725	N/A	N/A	Solvent-based contact-bonding agent.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last Accessories	Various	ASTM D4434	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.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY OTHER THAN APPLICANT:

TABLE 1

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
FR-10	Non-Asphaltic fiberglass-based Fire-Retardant Slipsheet.	48" x 250' rolls	Atlas Roofing Corp.
FR-50	Non-Asphaltic fiberglass-based Fire-Retardant Slipsheet.	48" x 105' rolls	Atlas Roofing Corp.
VersaShield Solo	Non-Asphaltic fiberglass-based slip sheet and/or fire barrier.	72" x 166.7' rolls 36" x 166.7' rolls	GAF

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam II, ACFoam III	Polyisocyanurate foam insulation	Atlas Roofing Corporation
Cellofoam Type IX EPS DensDeck, DensDeck Prime	Expanded Polystyrene Type IX Silicon treated gypsum	Cellofoam North America Inc. Georgia-Pacific Gypsum LLC
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC
ENRGY 3	Polyisocyanurate foam insulation	Johns Manville
Duro-Fold Underlayment Board	Extruded polystyrene with polypropylene facer	Duro-Last Roofing, Inc.
Duro-Guard Iso II-A, Duro-Guard Iso III-A	Polyisocyanurate foam insulation	Duro-Last Roofing, Inc.
Duro-Guard Iso II-H Duro-Guard Iso III-H	Polyisocyanurate foam insulation	Duro-Last Roofing, Inc.
Duro-Guard ISO II-G Duro-Guard ISO II-G Tapered Duro-Guard ISO III-G	Polyisocyanurate insulation with fiberglass reinforced organic facers	Duro-Last Roofing, Inc.
Duro-Guard ISO HD-G Duro-Guard ISO HD-A Duro-Guard HD-H	High density Polyisocyanurate insulation with coated fiberglass facers	Duro-Last Roofing, Inc.
Duro-Guard EPS	Expanded polystyrene	Duro-Last Roofing, Inc.
Duro-Guard EPS FGF	Expanded polystyrene with fiberglass facers	Duro-Last Roofing, Inc.



NOA No.: 19-0508.01
 Expiration Date: 08/22/22
 Approval Date: 05/07/20
 Page 4 of 23

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Duro-Guard XPS Fan Fold-P	Rigid extruded polystyrene (XPS) core and wrapped with tough facers which create a durable water-resistant board	Duro-Last Roofing, Inc.
R-Tech Fan Fold	Type IX Expanded polystyrene with polymeric facers	Insulfoam a division of Carlisle Construction Materials Inc.
Insulfoam EPS	Type IX expanded polystyrene board	Insulfoam a division of Carlisle Construction Materials Inc.
Kingspan® Greengard® Insulation Board CM	Type IV and VI expanded polystyrene board	Kingspan Insulation, LLC
SECUROCK Gypsum-Fiber Roof Board	Fiber reinforced insulation board	USG Corporation
DEXcell Cement Roof Board	Insulation with cementitious core and fiberglass mesh facers	National Gypsum Company
DEXcell FA Glass Mat Roof Board	Insulation with gypsum core and heavy duty coated glass mat facers	National Gypsum Company

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last 3” Metal Plates	Galvalume steel stress plates.	3” square	Duro-Last Roofing, Inc.
2.	Duro-Last Insulation Plates	Round plastic stress plates.	3” round	Duro-Last Roofing, Inc.
3.	Duro-Last Poly-Plates	Round plastic stress plates.	2” round	Duro-Last Roofing, Inc.
4.	Duro-Last #15 Extra Heavy Duty Drill Point Fastener	Corrosion resistant, drill point with a #3 Phillips truss head	Various Lengths	Duro-Last Roofing, Inc.
5.	Duro-Last Cleat Plates	0.038” thick galvalume stress plates.	2.4”	Duro-Last Roofing, Inc.
6.	OMG Eyehook Accuseam Plate	Stress Plate	2-3/8”	OMG, Inc.
7.	Duro-Last #14 HD Fastener	Roofing and insulation fasteners	Various Lengths	Duro-Last Roofing, Inc.
8.	Duro-Bond Plate 1302	Round, coated galvalume plate (Gold and Black)	3” round	Duro-Last Roofing, Inc.
9.	Duro-Bond ISO Weld 1302-1	G-90 Galvanized steel plate with PVC coating	3" diameter	SFS Group USA, Inc.
10.	Duro-Bond PVC IW Plate	AZ-50 Galvanized steel plates	3.4” diameter	Altenloh, Brinck & Co.



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
FM Approvals	2M4A8 .AM	Class 4470	03-05-87
	3Y5A6.AM	Class 4470	03-10-95
	4D6A4.AM	Class 4470	08-90-99
	3005604	Class 4470	03-13-00
	3026508	Class 4470	05-03-07
IRT-ARCON, Inc.	02-025	TAS 114	07-24-02
PRI Construction Materials Technologies LLC	DLRI-013-02-01	TAS 114-J	08-28-12
	DLRI-014-02-01	TAS 114-J	08-28-12
	DLRI-053-02-01	ASTM D4434	06-26-14
	DLRI-080-02-01	ASTM D4434	08-03-16
	NGC-034-02-01	TAS 114-J	03-25-16
	NGC-035-02-01	TAS 114-J	05-19-16
	NGC-038-02-01	TAS 114-J	9-25-17
	NGC-041-02-01	TAS 114-J	2-21-18
	DLRI-113-02-01	TAS 114-J	04-05-17
	DLRI-116-02-01A.1	TAS 111	05-04-18
	DLRI-116-02-01B.1	TAS 111	05-04-18
	DLRI-116-02-01C.1	TAS 111	05-04-18
	DLRI-120-02-01	TAS 114-J	07-14-17
	DLRI-021-02-01.15	ASTM D1761/D1876 TAS 117-B	05-09-19
DLRI-130-02-02.1	TAS 114-J	12-14-18	
Exterior Research & Design, LLC	02733.01.05-1	TAS 114	01-21-05
	02744.05.06	TAS 114	05-17-06
	02732.09.04	ASTM D4434	09-28-04
Trinity ERD	02750.02.08-R2	ASTM D4434	08-03-12
	D42370.07.12	ASTM D1084/TAS 117	07-11-12
	D35210.08.11-R1	ASTM D4434	09-17-12
	D42320.08.12	TAS 117/TAS 114	01-08-13
	D40280.03.13	ASTM D4434	03-13-13
	D40260.03.13.1	ASTM D4434	03-29-13
	D44450.05.13-2	ASTM D4434	05-10-13
	D35210.08.11-R3	ASTM D4434	03-25-13
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07
Architectural Testing, Inc.	C0713.01-109-18	TAS 114(J)	03-05-13
NEMO ETC, LLC	DL-SC14065.06.18	ASTM D4432	06-28-18



APPROVED ASSEMBLIES

Membrane Type: Single Ply, PVC

Deck Type II: Wood Insulated

Deck Description: 1⁹/₃₂" plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.

System Type C(1): All layers of insulation simultaneously attached; 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.

Fire Barrier: Atlas Roofing Corporation FR-10 OR FR-50, GAF VersaShield Solo, 1/4" DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of any of the following insulations.

Base layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2. Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
H-Shield, Duro-Guard Iso II-H Minimum 1.5" thick	7 with 8, 9, or 10	See Below

Note: Insulation Layers shall be through fastened to the wood supports with the fastener and plate listed above. 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: The min. 40 mil. Duro-Last membrane, min. 50 mil. Duro-Last EV membrane or the min. 50 mil. Duro-Tuff membrane shall be welded to the Duro-Bond Plate 1302 as specified below.

Or

The min. 80 mil Duro-Last membrane, min. 50 mil. Duro-Last EV, or min. 60 mil. Duro-Tuff membrane shall be welded to the Duro-Bond ISO Weld 1302-1 Plate in the manner and the spacing specified below.

Or

The min. 60 mil Duro-Last membrane, min. 60 mil. Duro-Tuff membrane or the min. 50 mil. Duro-Last EV membrane shall be welded to the Duro-Bond PVC IW Plate in the manner and the spacing specified below.

Fastening: The Duro-Last membrane, Duro-Last EV membrane or Duro-Tuff membrane is welded to the Duro-Bond Plate with RhinoBond Welder. Laps are sealed with a minimum 1" wide heat weld.

Maximum Design Pressure: -60 psf. with Fastener Density of 1:2.67 ft² (See General Limitation #7)
-90 psf. with Fastener Density of 1:2 ft² (See General Limitation #7)



Membrane Type: Single Ply, PVC
Deck Type II: Wood, Insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.
System Type C(2): All layers of insulation simultaneously attached; 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.

Fire Barrier: Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, ¼"
(Optional) DensDeck, ¼" DensDeck Prime, ¼" SECUROCK loose laid

One or more layers of any of the following insulations.

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.		
Minimum ½" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DEXcell FA Glass Mat Roof Board, SECUROCK Gypsum Fiber Roof Board, DensDeck Prime		
Minimum ¼" thick	1 with 4	1:1.78
Duro-Guard HD-G		
Minimum ½" thick	1 with 4	1:1.78
DEXcell Cement Roof Board		
Minimum 7/16" thick	1 with 4	1:1.78

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: Minimum 50 mil Duro-Fleece or Duro-Fleece Plus membrane shall be fully adhered with Duro-Fleece CR-20 Adhesive applied at 3.5 lbs./100-ft² in "splatter pattern". Or fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 100 ft²/gal to substrate only. Side laps shall be a minimum 3" wide and are sealed with a minimum 1.5" wide heat weld.

Or

One ply of minimum 40 mil Duro-Last membrane, minimum 50 mil Duro-Tuff membrane or Duro-Last EV membrane fully adhered with Duro-Last WB II Adhesive applied at a minimum rate of 150 ft²/gal to substrate only. Or fully adhered 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). Min. 3" wide laps are sealed with a minimum of 1" wide heat weld.

Maximum Design Pressure: -75 psf. with a fastener density of 1:1.78 ft² (See General Limitation #7)
-60 psf. with a fastener density of 1:2 ft² (See General Limitation #7)



Membrane Type: Single Ply, PVC

Deck Type II: Wood, Insulated

Deck Description: 1⁹/₃₂" or greater plywood or wood plank attached 6" o.c. with 8d nails to wood supports spaced a maximum 24" o.c.

System Type D(1): All layers of insulation and base sheet 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.

Fire Barrier: Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4"
(Optional) DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of the following insulations:

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.		
Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam II, ACFoam III, Duro-Guard ISO II-A, Duro-Guard ISO III-A, ENRGY 3, H-Shield, Duro-Guard ISO II-H, Duro-Guard III-H, Duro-Guard ISO HD-A, Duro-Guard HD-H, Duro-Guard ISO HD-G, Duro-Guard ISO II-G, Duro-Guard ISO III-G		
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 with 57" tabs: Min. 40 mil. Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 57" o.c. with Duro-Last #14 HD fasteners with Duro-Last 3-inch Metal 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 60 ft²/gal (two-sided application). Laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane with 60" tabs: Min. 40 mil. Duro-Last membrane shall be mechanically attached at its 3" wide tabs, spaced every 60" o.c. with Duro-Last #14 HD fasteners with Duro-Last Poly-Plate or Cleat 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 60 ft²/gal (two-sided application). 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 1I: Wood, Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.
System Type D(2): All layer of insulation and base sheet simultaneously attached. Membrane attached over preliminarily fastened insulation.

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.

Fire Barrier: Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4"
(Optional) DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of the following insulations:

Base layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.		
Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density
Duro-Fold Underlayment Board		
Minimum 3/8" thick	N/A	N/A
R-TECH Fan Fold, Duro-Guard ISO HD-G, Duro-Guard EPS, Duro-Guard ISO II-G		
Minimum 1/2" thick	N/A	N/A
Duro-Guard EPS FGF, Duro-Guard ISO II-A, Duro-Guard ISO II-H		
Minimum 1" thick	N/A	N/A
DensDeck Prime, SECUROCK Gypsum Fiber Roof Board, DEXcell FA Glass Mat Roof Board		
Minimum 1/4" thick	N/A	N/A
DEXcell Cement Roof Board		
Minimum 7/16" thick	N/A	N/A

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 RAS 117 for fastening details) shall also be mechanically fastened along with the roof membrane as specified below (see RAS 117 for fastening details).

Membrane with 60" tabs: Min. 40 mil. Duro-Last membrane shall be mechanically attached at its 3" tabs, spaced every 60" with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates, Duro-Last 3" Metal Plates, or Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.25" wide heat weld.

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



Membrane with 120" tabs: Min. 40 mil. Duro-Last membrane shall be mechanically attached at its 6" tabs, spaced every 120" with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates, Duro-Last 3" Metal Plates, or Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Laps are sealed with a minimum 1.25" 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 II: Wood, Insulated
Deck Description: Nominal 1" x 6" wood plank or greater attached with two (2) 8d nails to wood supports spaced a maximum 24" o.c.
System Type D(3): All layers of insulation and base sheet 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.

Fire Barrier: Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, ¼"
(Optional) DensDeck, ¼" DensDeck Prime, ¼" SECUROCK loose laid

One or more layers of the following insulations:

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.	N/A	N/A
Minimum ½" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam II, ACFoam III, Duro-Guard ISO II-A, Duro-Guard ISO III-A, ENRGY 3, H-Shield, Duro-Guard ISO II-H, Duro-Guard ISO HD-G	N/A	N/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 with 25" tabs: Min. 40 mil. Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 25" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point fastener with Duro-Last Cleat Plates or OMG Eyehook Accuseam Plate 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 ft²/gal (two-sided application). Laps are sealed with a minimum 1.5" wide heat weld.

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



- Membrane Type:** Single Ply, PVC
- Deck Type II:** Wood, Insulated
- Deck Description:** 1⁹/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 32" o.c. spacing.
- System Type D(4):** All layers of insulation and base sheet 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.

- Thermal Barrier:** Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4"
(Optional) DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of the following insulations:

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.		
Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck, DensDeck Prime, DEXcell FA Glass Mat Roof Board, SECUROCK Gypsum Fiber Roof Board		
Minimum 1/4" thick	N/A	N/A
Duro-Fold Underlayment Board		
Minimum 3/8" thick	N/A	N/A
Duro-Guard EPS, Cellofoam Type IX EPS, Insulfoam EPS, Kingspan Greengard Insulation Board CM, Duro-Guard ISO II-G, R-Tech Fan Fold, Duro-Guard ISO HD-A, Duro-Guard ISO HD-H, Duro-Guard ISO HD-G		
Minimum 1/2" thick	N/A	N/A
DEXcell Cement Roof Board		
Minimum 7/16" thick	N/A	N/A
Duro-Guard ISO II-A, Duro-Guard ISO II-H, Duro-Guard EPS FGF		
Minimum 1" 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 Option #1:** Minimum 50 mil Duro-Tuff membrane shall be mechanically attached at its 6" wide tabs, spaced every 54" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates spaced 12" o.c. The 6" wide side laps are sealed with a 1.5" wide heat weld.

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



Membrane Option #2: Minimum 50 mil Duro-Tuff membrane shall be mechanically attached at its 6” wide tabs, spaced every 14” o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates spaced 6” o.c. The 6” wide side laps are sealed with a 1.5” wide heat weld

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

Maximum Design
Pressure:

See Membrane Options above.



- Membrane Type:** Single Ply, PVC
- Deck Type II:** Wood, Insulated
- Deck Description:** 1⁹/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.
- System Type D(5):** All layers of insulation and base sheet 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.

- Thermal Barrier:** Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4"
(Optional) DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of the following insulations:

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.		
Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck, DensDeck Prime, DEXcell FA Glass Mat Roof Board, SECUROCK Gypsum Fiber Roof Board		
Minimum 1/4" thick	7 with 2	1:6.4 ft²
Duro-Fold Underlayment Board		
Minimum 3/8" thick	7 with 2	1:6.4 ft²
Duro-Guard EPS, Duro-Guard ISO II-G, R-TECH Fan Fold, Duro-Guard ISO HD-A, Duro-Guard ISO HD-H, Duro-Guard ISO HD-G		
Minimum 1/2" thick	7 with 2	1:6.4 ft²
DEXcell Cement Roof Board		
Minimum 7/16" thick	7 with 2	1:6.4 ft²
Duro-Guard ISO II-A, Duro-Guard ISO II-H, Duro-Guard EPS FGF		
Minimum 1" thick	7 with 2	1:6.4 ft²

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 Option #1: Minimum 50 mil Duro-Tuff membrane shall be mechanically attached at its 6" wide tabs, spaced every 114" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates, Duro-Last Cleat Plates, or Duro-Last 3" Metal Plates spaced 6" o.c. fasteners centered 2" from tab edge. The 6" wide side laps are sealed with a 1.5" wide heat weld.

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



Membrane Option #2: Minimum 50 mil Duro-Tuff membrane shall be mechanically attached at its 6" wide tabs, spaced every 54" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates, Duro-Last Cleat Plates, or Duro-Last 3" Metal Plates spaced 6" o.c. fasteners centered 1.25" from tab edge. The 6" wide side laps are sealed with a 1.5" wide heat weld.

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

Maximum Design Pressure: See Membrane Options above.



Membrane Type: Single Ply, PVC
Deck Type II: Wood, Insulated
Deck Description: 19/32" or greater CDX plywood secured with 0.113-inch x 23/8" ring shank nails spaced 6" o.c. at supports with a maximum 32" o.c. spacing.
System Type D(6): All layers of insulation and base sheet 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.

Thermal Barrier: Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4"
(Optional) DensDeck, 1/4" DensDeck Prime, 1/4" SECUROCK loose laid

One or more layers of the following insulations:

Base Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any Approved EPS or XPS or Polyisocyanurate insulation listed in Table 2.	(Table 3)	
Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime, DEXcell FA Glass Mat Roof Board, SECUROCK Gypsum Fiber Roof Board		
Minimum 1/4" thick	N/A	N/A
Duro-Fold Underlayment Board		
Minimum 3/8" thick	N/A	N/A
Duro-Guard EPS, Duro-Guard ISO II-G, R-TECH Fan Fold, Duro-Guard ISO HD-G		
Minimum 1/2" thick	N/A	N/A
DEXcell Cement Roof Board		
Minimum 7/16" thick	N/A	N/A
Duro-Guard ISO II-A, Duro-Guard ISO II-H, Duro-Guard EPS FGF		
Minimum 1" 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 Option #1: Minimum 50 mil Duro-Tuff membrane shall be mechanically attached at its 6" wide tabs, spaced every 54" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates or Duro-Last Cleat Plates spaced 6" o.c. The 6" wide side laps are sealed with a 1.5" wide heat weld.

Maximum Design Pressure: -60 psf. (See General Limitation #7)

Membrane Option #2: Minimum 40 mil Duro-Last membrane shall be mechanically attached at its 3" wide tabs, spaced every 60" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates or Duro-Last Cleat Plates spaced 6" o.c. The 3" wide side laps are sealed with a 1" wide heat weld.

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



Membrane Option #3: Minimum 40 mil Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 120" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates or Duro-Last Cleat Plates spaced 6" o.c. The 6" wide side laps are sealed with a 1" wide heat weld.

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

Maximum Design
Pressure:

See Membrane Options above.



Membrane Type:	Single Ply, PVC
Deck Type 1:	Wood, Non-Insulated
Deck Description:	19/32" or greater plywood or wood plank fastened with 1/4" x 2" self-tapping hex head screws at maximum 12" spacing to supports having a maximum 24" o.c. span.
System Type E(1):	Membrane mechanically attached through optional barriers to structural deck supports.

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.
Vapor Barrier (Optional):	Any UL or FM approved vapor barrier.
Fire Barrier (Optional):	Atlas Roofing Corporation FR-10 or FR-50, GAF VersaShield Solo, 1/4" DensDeck, 1/4" SECUROCK, 1/2" thick UL Classification Type X Gypsum with a moisture resistant facer and core, or a second sheet of vapor barrier board may be used over this deck (see General Limitation #1).
Membrane with 120" tabs:	Min. 40 mil. <u>Duro-Last membrane shall be mechanically attached into the wood supports</u> at the 6" tabs, spaced every 120" with Duro-Last #14 HD Fasteners and Duro-Last Poly Plates or Cleat-Plates spaced 6" o.c. maximum. Laps are sealed with a minimum 1.5" wide heat weld. Maximum Design Pressure: -52.5 psf. (See General Limitation #7)
Membrane with 60" tabs:	Min. 40 mil. <u>Duro-Last membrane shall be mechanically attached into the wood supports</u> at the 3" tabs, spaced every 60" with Duro-Last #14 HD Fasteners and Duro-Last Poly Plates or Cleat-Plates spaced 6" o.c. maximum. Laps are sealed with a minimum 1.5" wide heat weld. Maximum Design Pressure: -52.5 psf. (See General Limitation #7)
Membrane with 120" tabs:	Min. 40 mil. <u>Duro-Last membrane shall be mechanically attached into the wood supports</u> at the 6" tabs, spaced every 120" with Duro-Last #14 HD Fasteners and Duro-Last Poly Plates or Cleat-Plates spaced 6" o.c. maximum. Duro-Last Tab Sealer 4725 shall be applied over the membrane and to the overlying membrane underside at a rate of 30 ft ² /gal (two-sided application) Laps are sealed with a minimum 1.5" wide heat weld. Maximum Design Pressure: -82.5 psf. (See General Limitation #7)
Maximum Design Pressure:	See fastening above



Membrane Type: Single Ply, PVC
Deck Type 1I: Wood, Non-Insulated
Deck Description: 1⁹/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.
System Type E(2): Membrane induction welded to mechanically attached fire barrier

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.

Fire Barrier: GAF VersaShield Solo mechanically attached in a 1.5 ft x 2 ft staggered grid with Duro-Bond Plates 1302, Duro-Bond ISO Weld 1302-1, or Duro-Bond PVC IW Plate and min. 2" Duro-Last #15 Extra Heavy Duty Drill Point Fasteners.

Membrane: The min. 40 mil. Duro-Last membrane, min. 50 mil. Duro-Last EV membrane, or the min. 50 mil. Duro-Tuff membrane shall be welded to the Duro-Bond Plates with RhinoBond Welder in the spacing specified above. Laps are sealed with a minimum 1.5" wide heat weld.

Or

The min. 80 mil Duro-Last membrane, min. 50 mil. Duro-Last EV, or min. 60 mil. Duro-Tuff membrane shall be welded to the Duro-Bond ISO Weld 1302-1 Plate in the spacing specified above. Laps are sealed with a minimum 1.5" wide heat weld.

Or

The min. 60 mil Duro-Last membrane, min. 60 mil. Duro-Tuff membrane or the min. 50 mil. Duro-Last EV membrane shall be welded to the Duro-Bond PVC IW Plate in the spacing specified above. 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 1I:** Wood, Non-Insulated
- Deck Description:** ¹⁵/₃₂" or greater plywood or wood plank secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 24" o.c. spacing.
- System Type E(3):** Membrane mechanically fastened.

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 50 mil Duro-Tuff membrane shall be mechanically attached at its 6" wide tabs, in rows spaced 24" o.c. with min. 2" Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates. The 6" wide side laps are sealed with a 1.5" wide heat weld.
- Or
- Minimum 40 mil Duro-Last membrane shall be mechanically attached along the tab 6" o.c. with min. 2" Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates or Duro-Last Cleat Plates. The 3" wide side laps are spaced 28" o.c and sealed with a 1" wide heat weld.

- Maximum Design Pressure:** -60 psf. (See General Limitation #7)



Membrane Type: Single Ply, PVC

Deck Type 1I: Wood, Non-Insulated

Deck Description: ¹⁹/₃₂" or greater CDX plywood secured with 0.113-inch x 2³/₈" ring shank nails spaced 6" o.c. at supports with a maximum 32" o.c. spacing.

System Type E(4): Membrane mechanically fastened.

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 shall be mechanically attached at its 6" wide tabs, spaced every 120" o.c. with Duro-Last #15 Extra Heavy Duty Drill Point Fasteners and Duro-Last Poly Plates or Duro-Last Cleat Plates spaced 6" o.c. The 6" wide side laps are sealed with a 1" wide heat weld.

Maximum Design Pressure:

-45 psf. (See General Limitation #7)



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

