



**BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908**

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 by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: DURO-LAST Single Ply PVC Roof Systems over Steel 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. 07-0411.02 and consists of pages 1 through 16.
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 07-1018.11
Expiration Date: 08/22/12
Approval Date: 02/21/08
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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Steel
Maximum Design Pressure -142.5 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, 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 Accessories	Various	ASTM D-4434	Custom fabricated accessories for parapets and penetrations in the Duro-Last roof.
Duro-Last Fascia Bar	1 ¾" x 10'; 4" x 10'		Extruded vinyl drip edge with holes punched 8" o.c..
Duro-Last Steel Plates	3" x 3"	TAS 114	Galvalume steel stress plates.
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 Termination Bar	1 ¾" x 10'		Termination bar with holes punched 6" o.c.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Duro-Last Stainless Steel Screws	#12 x 1 ¼"	TAS 114	Termination and trim fasteners.
Duro-Last Vinyl Coated Sheet Steel	4' x 10' x .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.
Duro-Last Duro-Coated Hex Head Screws	#14 x 1 ¼"	TAS 114	Termination screws.
Duro-Last Two-Way Roof Vents			Injection molded two-way roof vents with a Duro-Last membrane skirt.
Duro-Fold Underlayment Board	4' x 50' x 3/8" thick	UL-790	Extruded polystyrene with polypropylene facer
Duro-Last Gravel stop	2" face x 10'; 4" face x 10'		Extruded vinyl gravel stop with holes punched 8" o.c..
Duro-Caulk Plus	10 oz tubes	TT-S-00230C	Type II Class A
Roof-Trak Walk Pads	30" x 60" x .125" thick		Extruded vinyl walk way pads manufactured from Duro-Last membrane.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
PYROX	Polyisocyanurate foam insulation	Apache Products Co.
ACFoam II, III, Composite/PB	Polyisocyanurate foam insulation	Atlas Energy Products
ES Foam I, ES Foam Ia	Polyisocyanurate foam insulation	ESI, Inc.
ISO 95+ GW, ISO 95+ GL	Polyisocyanurate foam insulation	Firestone
Expanded Polystyrene & Extruded Polystyrene	Polystyrene roof board insulation (1.5 # Density)	Generic
Gypsum	Gypsum board	generic
Wood Fiber	Wood fiber insulation board	generic
High Density Wood Fiberboard	Wood fiber insulation board	generic



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APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Perlite Insulation	Perlite insulation board	generic
E'NRG'Y-3 & PSI-25, UltraGard Gold, Premier	Polyisocyanurate foam insulation	Johns Manville
Paroc Cap Board	Rockwool insulation	Partek, Inc.
Multi-Max FA-3, Therमारoof Composite-3	Polyisocyanurate foam insulation	Rmax, Inc.
Hy-Therm Composite, Hy-Therm(a) Composite	Polyisocyanurate foam insulation	Dow Chemical Company
GAFTEMP Composite AP, NP, PH, H	Polyisocyanurate foam insulation	GAF Materials

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Duro-Last Duro-Coated Fasteners #14	Roofing and insulation fasteners, Duro-Coated with #3 Phillips head.		Duro-Last
2.	Duro-Last Steel Plates	Galvalume steel stress plates.	3" square	Duro-Last
3.	Duro-Last Insulation Plates	Round plastic stress plates.	3" round	Duro-Last
4.	Duro-Last Polyplates	Round plastic stress plates.	2" round	Duro-Last
5.	Duro-Last Extra Heavy Duty Screws (#15)	Corrosion resistant, drill point with a #3 Phillips truss head		Duro-Last
6.	ITW Buildex 2-3/8" Eyehook Plates	Stress plates	2-3/8"	OMG
7.	Duro-Last Batten Bar	18 ga. Galvalume steel batten bar with pre-punched holes every 6"	1" wide	Duro-Last
8.	Trufast EHD Fasteners			Trufast
9.	Duro-Last Cleat Plates	0.035" thick galvalume stress plate	2-3/8"	Duro-Last



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 3Y5A6.AM	Class 1-150 Windstorm	03-10-95
	Letter	Wind Uplift on Concrete Decks	01-18-94
	4D6A4.AM	Class 4470	08-90-99
	3005604		03-13-00
	3008342	Class 4470	10-19-00
	3026508	Class 4470	05-03-07
National Evaluation Service, Inc.	Ner-227 & Letter	Membrane Roofing	02-01-94
Exterior Research & Design, LLC	#02733.01.05-1	FM 4470/TAS 114	01-21-05
	#02744.05.06	FM 4470/TAS 114	05-17-06
	#D6760.08.07	FM 4470/TAS 114	08-01-07
	02732.09.04	ASTM D4434	09-28-04
Intertek Testing Services, NA Inc.	3119586-001	TAS 111	07-10-07



APPROVED ASSEMBLIES:

Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(1): All layer of insulation are mechanically attached to roof deck.
All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Gypsum Minimum ½" thick	1	1:5.33 ft ²
Perlite, High Density Fiberboard Minimum ½" thick	1 1 [*]	1:4 ft ² 1:6.4 ft ²
Paroc Cap Board Minimum ¾" thick	1 1	1:4 ft ² 1:6.4 ft ²
AC FOAM II, AC FOAM SUPREME, Pyrox, E'NRG'Y III, PSI-25, UltraGard Gold, UltraGard Premier, Firestone ISO-95 GW, ES Foam I, Hunter Panels, or any approved Polyisocyanurate having a current NOA Minimum 1" thick	1 1	1:4 ft ² 1:6.4 ft ²

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Extruded or Expanded Polystyrene Minimum 1" thick	1 1	1:4 ft ² 1:6.4 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Vapor Retarders: (Optional) Any UL or FMRC approved vapor barrier.
Barrier Sheet: (Optional) Atlas Energy Products FR-10®, FR-50®, ¼" Dens Deck, ½" thick UL Classification type X gypsum with a moisture resistant facer and core, Foamfold, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).
Membrane with 60" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 60" with Duro-Last fasteners and Poly-Plates® spaced 12" o.c. maximum, through the insulation and into the deck.
Membrane with 28" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 28" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced 18" o.c. maximum, through the insulation and into the deck .
Maximum Design Pressure: -45 psf (See Limitation #7)



Deck Type 2I: Steel, Insulated

Deck Description: 18 to 22 gage steel deck

System Type C(2): All layer of insulation are mechanically attached to roof deck.

All General and System Limitations apply.

Base Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Gypsum Minimum ½" thick	1	1:5.33 ft ²
Perlite, High Density Fiberboard Minimum ½" thick	1 1	1:4 ft ² 1:6.4 ft ²
Paroc Cap Board Minimum ¾" thick	1 1	1:4 ft ² 1:6.4 ft ²
AC FOAM II, AC FOAM SUPREME, Pyrox, E'NRG'Y III, PSI-25, UltraGard Gold, UltraGard Premier, Firestone ISO-95 GW, ES Foam I, Hunter Panels, or any approved Polyisocyanurate having a current NOA Minimum 1" thick	1 1	1:4 ft ² 1:6.4 ft ²
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Extruded or Expanded Polystyrene Minimum 1" thick	1 1	1:4 ft ² 1:6.4 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Steel Deck: 18 to 22 gage Approved ASTM designation A611 Grade E or ASTM designation A446 Grade E steel deck. Attached with ITW Buildex Traxx/5 fastener at a maximum spacing of 6" o.c. to minimum 0.25" thick steel supports having a maximum span of 6 ft. o.c. with deck side laps fastened at a maximum spacing of 24" o.c. with ITW Buildex Traxx/1.

Vapor Retarders: (Optional) Any UL or FMRC approved vapor barrier.

Barrier Sheet: (Optional) Atlas Energy Products FR-10®, FR-50®, ¼" Dens Deck, ½" thick UL Classification type X gypsum with a moisture resistant facer and core, Foamfold, Duro-Fold or a second sheet of barrier board may be used over the insulation (see General Limitation #1).



Membrane with 28" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 28" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced at 18" o.c. maximum, through the insulation and into the deck.

Membrane with 60" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 60" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced at 6" o.c. maximum, through the insulation and into the deck .

Membrane with 120" tabs: Duro-Last® membrane shall be mechanically attached at its minimum 6" tabs, spaced every 120" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced at 6" o.c. maximum, through the insulation and into the deck.

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



Deck Type 2I: Steel, Insulated
Deck Description: 18 to 22 gage steel deck
System Type C(3): All layer of insulation are mechanically attached to roof deck.
All General and System Limitations apply.

Base Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Gypsum		
Minimum ½" thick	1	1:5.33 ft ²
Perlite, High Density Fiberboard		
Minimum ½" thick	1	1:4 ft ²
	1	1:6.4 ft ²
Paroc Cap Board		
Minimum ¾" thick	1	1:4 ft ²
	1	1:6.4 ft ²
AC FOAM II, AC FOAM SUPREME, Pyrox, E'NRG'Y III, PSI-25, UltraGard Gold, UltraGard Premier, Firestone ISO-95 GW, ES Foam I, Hunter Panels, or any approved Polyisocyanurate having a current NOA		
Minimum 1" thick	1	1:4 ft ²
	1	1:6.4 ft ²

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Extruded or Expanded Polystyrene		
Minimum 1" thick	1	1:4 ft ²
	1	1:6.4 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Steel Deck: 18 to 22 gage Wheeling Corrugating Company BW series steel roof deck meeting ASTM designation A611 Grade E or ASTM designation A446 Grade E. Attached with ITW Buildex Traxx/4 or Traxx/5 fastener at a maximum spacing of 6" o.c., to minimum 0.25" thick steel supports having a maximum span of 6 ft. o.c. With deck side laps fastened at a maximum spacing of 30" o.c. with ITW Buildex Traxx/1.

Vapor Retarders: (Optional) Any UL or FMRC approved vapor barrier.

Barrier Sheet: (Optional) Atlas Energy Products FR-10®, FR-50®, ¼" Dens Deck, ½" thick UL Classification type X gypsum with a moisture resistant facer and core, Foamfold, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane with 28" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 28" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced at 12" o.c. maximum, through the insulation and into the deck .

Maximum Design Pressure: -75 psf (See Limitation #7)



Deck Type 2I: Steel, Insulated
Deck Description: 18 to 22 gage steel deck
System Type C(4): All layer of insulation are mechanically attached to roof deck.

All General and System Limitations apply.

Base Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Gypsum		
Minimum ½" thick	1	1:5.33 ft ²
Perlite, High Density Fiberboard		
Minimum ½" thick	1	1:4 ft ²
	1	1:6.4 ft ²
Paroc Cap Board		
Minimum ¾" thick	1	1:4 ft ²
	1	1:6.4 ft ²
AC FOAM II, , Pyrox, E'NRG'Y III, PSI-25, UltraGard Gold, UltraGard Premier, Firestone ISO-95 GW, ES Foam I, Hunter Panels, or any approved Polyisocyanurate having a current NOA		
Minimum 1" thick	1	1:4 ft ²
	1	1:6.4 ft ²
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Extruded or Expanded Polystyrene		
Minimum 1" thick	1	1:4 ft ²
	1	1:6.4 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Steel Deck: 18 to 22 gage approved steel roof deck meeting ASTM designation A611 Grade E or ASTM designation A446 Grade E. Attached with ITW Buildex Traxx/4 or Traxx/5 fastener at a maximum spacing of 6" o.c., to minimum 0.25" thick steel supports having a maximum span of 6 ft. o.c. With deck side laps fastened at a maximum spacing of 24" o.c. with ITW Buildex Traxx/1.

Vapor Retarders: (Optional) Any UL or FMRC approved vapor barrier.

Barrier Sheet: (Optional) Atlas Energy Products FR-10®, FR-50®, ¼" Dens Deck, ½" thick UL Classification type X gypsum with a moisture resistant facer and core, Foamfold, or a second sheet of barrier board may be used over the insulation (see General Limitation #1).

Membrane with 28" tabs: Duro-Last® membrane shall be mechanically attached at its 3" tabs, spaced every 28" with Duro-Last fasteners with Duro-Last 2 in. Poly-Plates® spaced at 6" o.c. maximum, through the insulation and into the deck.

Maximum Design Pressure: -105 psf (See Limitation #7)



Deck Type 2I: Steel Deck, Insulated

Deck Description: Minimum 18 to 22 gage type B, Grade 80 steel deck attached to steel supports spaced 6 ft o.c. with puddle welds and washers.

System Type D(1): Membrane fastened over preliminarily fastened insulation. All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC FOAM II, AC FOAM III, , Pyrox, E'NRG'Y III, PSI-25, UltraGard Gold, UltraGard Premier, Firestone ISO-95 GW, ES Foam I, Hunter Panel, High Density Wood Fiber, Extruded or Expanded Polystyrene Minimum 1½" 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 Roofing Application Standard RAS 117 for fastening details).

Steel Deck: Minimum 22 gage, type B, Grade 80 steel

Membrane with 25" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 25" o.c. with Duro-Last EHD Screws (#15) with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application).
(Maximum Design Pressure -142.5 psf; See General Limitation #7)

Membrane with 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 57" o.c. with Duro-Last EHD Screws (#15) with Duro-Last 3-inch Metal Plates spaced 12" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application).
(Maximum Design Pressure -52.5 psf; See General Limitation #7)

Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 57" o.c. with Duro-Last EHD Screws (#15) with Duro-Last 3-inch Metal Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application).
(Maximum Design Pressure -105.0 psf; See General Limitation #7)

Membrane with 84" tabs: Duro-Last membrane shall be mechanically attached at its 3" wide tabs,



spaced every 84" o.c. with Duro-Last HD Screws (#14) with Duro-Last Poly Plates spaced 6" o.c. maximum, through the insulation and into the deck.
(Maximum Design Pressure -45 psf; See General Limitation #7)

Membrane with 84" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 84" o.c. with Duro-Last EHD Screws (#15) with Duro-Last 3-inch Metal Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application). **(Maximum Design Pressure -52.5 psf; See General Limitation #7)**

Duro-Last membrane shall be mechanically attached at its 3" wide tabs, spaced every 84" o.c. with Duro-Last EHD Screws (#15) with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck.
(Maximum Design Pressure -60.0 psf; See General Limitation #7)

Membrane with 120" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 120" o.c. with Duro-Last EHD Screws (#15) with Duro-Last 3-inch Metal Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application).
(Maximum Design Pressure -82.5 psf; See General Limitation #7)

Maximum Design
Pressure:

See fastening above



Deck Type 2I: Steel Deck, Insulated

Deck Description: Minimum 18 to 22 gage ASTM A1008 SS Grade 80 or A653 SS Grade 80 steel deck attached to steel supports spaced 6 ft o.c.

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

All General and System Limitations apply.

Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ISO 95+ GL, Multi-Max FA-3, ES Foam 1a, ACFoam-II, ACFoam-III, ACFoam Composite/PB, Hy-Therm Composite, Hy-Therm(a) Composite, GAFTEMP Composite AP, GAFTEMP Composite NP, GAFTEMP Composite PH, or Thermofoam Composite-3 Minimum 1½" thick	N/A	N/A
GAFTEMP Composite H Minimum 2" 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 Roofing Application Standard RAS 117 for fastening details).

Steel Deck: Minimum 22 gage, type B, Grade 80 steel

Membrane with 57" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 57" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 12" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -67.5 psf; See General Limitation #7)

Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 57" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -135.0 psf; See General Limitation #7)

Membrane with 84" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 84" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 12" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -52.5 psf; See General Limitation #7)



Membrane with 84" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 84" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -97.5 psf; See General Limitation #7)

Membrane with 120" tabs: Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 120" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 12" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -45.0 psf; See General Limitation #7)

Duro-Last membrane shall be mechanically attached at its 6" wide tabs, spaced every 120" o.c. with Trufast EHD fasteners with ITW Buildex 2-3/8" Eyehook Plates or Duro-Last Cleat Plates spaced 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 30 ft²/gal (two-sided application).
(Maximum Design Pressure -82.5 psf; See General Limitation #7)

Maximum Design
Pressure:

See fastening above



Deck Type 2I: Steel Deck, Insulated

Deck Description: 18 to 22 gage steel deck

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

All General and System Limitations apply.

Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any approved type II polyisocyanurate Minimum 1½" thick	#15 Fasteners and 2" Plastic Plates	1:6.4 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).

Steel Deck: Minimum 22 gage, type B, Grade 80 steel

Membrane: Duro-Last membrane shall be mechanically attached at its 3" wide tabs, spaced every 60" o.c. with Duro-Last EHD Screws (#15) with Duro-Last Batten Bar 6" o.c. maximum, through the insulation and into the deck. Duro-Last Tab Sealant 4725 shall be applied over the tab membrane and to the overlying membrane underside at a rate of 60 ft²/gal (two-sided application).

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



STEEL 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 137.

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. 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.)**

END OF THIS ACCEPTANCE



NOA No.: 07-1018.11
Expiration Date: 08/22/12
Approval Date: 02/21/08
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