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

NOTICE OF ACCEPTANCE (NOA)

Flex Membrane International, Corp
5103A Pottsville Pike
Reading, PA 19605

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: Flex TPO Single Ply Roofing System over Lightweight Concrete Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No. 19-0226.02 and consists of pages 1 through 22.
The submitted documentation was reviewed by Alex Tigera.

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply Roofing
Material: TPO
Deck Type: Lightweight Concrete
Maximum Design Pressure: -300 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Flex TPO II	Various	ASTM D6878 TAS 131	Thermoplastic olefin reinforced single-ply membrane.
Flex TPO II FB	Various	ASTM D6878 TAS 131	Thermoplastic olefin reinforced, fleece back single-ply membrane
GAFGLAS® FlexPly™ 6	39.37" (1 meter) Wide	ASTM D2178	A smooth surfaced asphaltic ply sheet reinforced with fiberglass mat.
GAFGLAS® #80 Ultima™ Base Sheet	39.37" (1 meter) Wide	ASTM D4601	A smooth asphaltic base or base/ply sheet reinforced with fiberglass mat.
Ruberoid® 20 Smooth	39.37" (1 meter) Wide	ASTM D6163	A SBS polymer-modified asphalt base or ply sheet reinforced with a fiberglass mat.
Ruberoid® Mop Smooth 1.5	39.37" (1 meter) Wide	ASTM D6164	Smooth surfaced mop applied SBS base or ply sheet reinforced with a polyester mat.
GAFGLAS® Stratavent® Eliminator Nailable Venting Base Sheet	39.37" (1 meter) Wide	ASTM D4897	A nailable, fiberglass base sheet coated on both sides with asphalt. Surfaced on the bottom side with mineral granules embedded in asphaltic coating.
Flex EG WB 181 TPO Bonding Adhesive	5 Gallons	Proprietary	A water based adhesive for TPO based membranes.
Flex EG TPO Cut Edge Sealant	1 Quart Squeeze Tube	Proprietary	Clear solvent based sealant for TPO cut edges.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Flex EG Polyiso	Polyisocyanurate foam insulation	Flex Membrane International, Corp.
ISO 95+ GL Tapered	Polyisocyanurate foam insulation	Firestone Building Products Company, LLC
EnergyGuard™ HD Polyiso Insulation	High density polyisocyanurate foam insulation	GAF
EnergyGuard™ HD Plus Polyiso Insulation	High density polyisocyanurate foam insulation	GAF

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam-II	Polyisocyanurate foam insulation	Atlas Roofing Corporation
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC
H-Shield HD	High density polyisocyanurate foam insulation	Hunter Panels, LLC
ENRGY 3	Polyisocyanurate foam insulation	Johns Manville Corp.
ENRGY 3 Tapered	Polyisocyanurate foam insulation	Johns Manville Corp.
SECUROCK® Gypsum-Fiber Roof Board	Gypsum board	United States Gypsum Corp.
SECUROCK® Glass-Mat Roof Board	Gypsum board	United States Gypsum Corp.
DensDeck® Roof Board	Gypsum board	Georgia-Pacific Gypsum LLC
DensDeck® Prime Roof Board	Gypsum board	Georgia-Pacific Gypsum LLC
Structodek® High Density Fiberboard Roof Insulation	High-density fiberboard	Blue Ridge Fiberboard, Inc.

APPROVED FASTENERS/ADHESIVES:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	#12 Standard Roofgrip	Phillips head, modified buttress thread, pinch point, carbon steel fastener for use in steel or wood decks. With CR-10 coating. Available with a pinch point or drill point.	#12 x 8" Max. Length, #3 Phillips Head	OMG, Inc.
2.	OMG Heavy Duty	Truss head, self-drilling, pinch point, high thread fastener for use in steel, wood or concrete decks.	#14 x 16" Max. Length, #3 Phillips Head.	OMG, Inc.
3.	OMG XHD	Truss head, self-drilling, pinch point, high thread fastener for us in wood or steel decks.	#15 x 16" Max. Length, #3 Phillips Head	OMG, Inc.
4.	OMG 2-3/8" Barbed XHD Plate	Round galvanized steel stress plates for use with OMG fasteners.	2-3/8" Round	OMG, Inc.
5.	OMG 2" Barbed Plate	Round galvanized steel stress plates for use with OMG fasteners.	2" Round	OMG, Inc.
6.	OMG 2-3/4" Super XHD Barbed Plate	Round galvanized steel stress plates for use with OMG fasteners.	2-3/4" Round	OMG, Inc.
7.	OMG Super XHD	Truss head, self-drilling, drill point, high thread fastener for use in steel decks.	#21 x 16" Max. Length, #3 Phillips Head	OMG, Inc.
8.	AccuTrac Flat Bottom	A2-SS aluminized steel plate for use with OMG fasteners.	3" Square; .017" Thick	OMG, Inc.
9.	AccuTrac Plate	Galvalume® steel plate with recess for use with OMG fasteners.	3" Square; .017" Thick	OMG, Inc.
10.	ASAP RoofGrip Pre-Assembled System	#12 Standard Roofgrip with 3 in. Round Metal Plate.	See Components	OMG, Inc.
11.	RhinoBond TPO SXHD Plate	Gold primer coated plate for use with TPO membranes.	3" Round	OMG, Inc.
12.	RhinoBond Insulation Plate (TPO)	Gold primer coated plate for use with TPO membranes.	3" Round	OMG, Inc.

APPROVED FASTENERS/ADHESIVES:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
13.	3 in. Ribbed Galvalume Plate	Round Galvalume® steel stress plate with reinforcing ribs and recessed for use with OMG fasteners.	3" Round	OMG, Inc.
14.	3 in. Round Metal Plate	Galvalume® coated steel stress plate for use with approved OMG fasteners.	3" Round	OMG, Inc.
15.	OMG Eyehook Accuseam Plate	Round Galvalume® steel plate for use with OMG fasteners.	2-3/8" Round	OMG, Inc.
16.	3 in. Ribbed Galvalume Plate (Flat)	Round Galvalume® plated steel stress plate with reinforcing ribs for use with OMG fasteners.	3" Round	OMG, Inc.
17.	RhinoBond (Retro) Driller	Hex head, ¾ in. drill point fastener used to attach single-ply to structural steel purlins.	4" - 10" Max. Length, With #3 Square Head	OMG, Inc.
18.	CR Assembled Base Sheet Fastener (1.7 in.)	G-90 galvanized fastener with plate for base sheet attachment to gypsum decks and lightweight insulating concrete decks. Coated with CR-10 fluorocarbon coating.	1.125" head x 1.75" length. 2.75" Galvalume steel stress plate.	OMG, Inc.
19.	Trufast FM-90 Base Sheet Fastener	G-90 galvanized fastener with plate for base sheet attachment to gypsum decks and lightweight insulating concrete decks. Coated with CR-10 fluorocarbon coating.	1.125" head x 1.75" Length. 2.75" Galvalume steel stress plate.	Altenloh, Brinck & Co. U.S., Inc.
20.	Trufast Twin Loc-Nail Assembled Fastener	Preassembled fastener/plate unit for base ply and insulation attachment to cementitious wood fiber, poured gypsum and lightweight insulating concrete decks.	Various	Altenloh, Brinck & Co. U.S., Inc.
21.	Millenium PG-1 Pump Grade Adhesive	A dual component foamable adhesive	1:1 Applicator	H.B. Fuller Company
22.	Millennium One Step Foamable Adhesive	A dual component polyurethane adhesive used to adhere single ply roof covers	1:1 Applicator	H.B. Fuller Company

EVIDENCE SUBMITTED:

Test Agency	Test Name	Report Identifier	Date
FM Approvals	4470	3003617	12/20/99
	4470	3015578	05/12/04
	4470	3038318	12/10/10
	4470	3041535	06/08/11
	4470	3047636	08/08/13
	4470	3058483	12/09/16
	4470	3060615	01/23/17
	4470	FM Letter	09/02/10
	4470	FM Letter	05/21/13
	4470	797-07744-267	10/17/12
UL LLC	UL 790	R10689	06/08/18
	UL 790	R1306	03/11/19
	Physical Properties	09CA55838	12/04/10
Atlantic & Caribbean Roof Consulting, LLC	TAS 114-D	11-067	11/21/11
	TAS 114-J	15-028	12/01/15
	TAS 114-J	16-002	03/04/16
PRI Construction Materials Technologies, LLC	ASTM D6083	GAF-084-02-01	05/07/06
	TAS 139	GAF-122-02-01	05/09/06
	ASTM D6083	GAF-245-02-01	06/10/10
	ASTM D6083	GAF-276-02-0-R1	01/03/11
	ASTM D2178	GAF-314-02-01	08/23/11
	ASTM D2178	GAF-315-02-01	08/23/11
	ASTM C1289	GAF-369-02-01	10/22/12
	ASTM C1289	GAF-411-20-01	04/30/13
	ASTM C1289	GAF-412-02-01	04/30/13
	ASTM C1289	GAF-417-02-01	05/27/13
	ASTM D6878	GAF 421-02-01	10/22/13
	ASTM D6878	GAF 422-02-01	10/29/13
	ASTM D6878	GAF 424-02-01	11/11/13
	ASTM D6878	GAF 425-02-01	11/11/13
	TAS 114-H	GAF 457-02-02	01/20/14
	TAS 114-D	GAF 457-02-08	01/24/14
	TAS 114-D	GAF 457-02-07	01/24/14
	TAS 114-J	GAF 457-02-04	01/24/14
	TAS 114-D	GAF 457-02-06	01/24/14
	ASTM C1289	GAF-464-02-01	02/05/14
	ASTM D6083	GAF 499-02-01	03/12/14
	Physical Properties	GAF-508-02-01	03/12/14
	TAS 114-J	GAF-538-02-03	08/12/14
	ASTM D6878	GAF-584-02-01	12/07/15
	ASTM D6878	GAF-585-02-01	12/07/15
	ASTM D6878	GAF-586-02-01	12/07/15
	TAS 139	GAF-671-02-01	06/30/16
	ASTM C1289	GAF-629-02-01	02/29/16
	ASTM C1289	GAF-704-02-01	09/22/16
PRI Construction Materials Technologies, LLC	ASTM C1289	GAF-706-02-01	09/22/16
	ASTM C1289	GAF-707-02-01	09/22/16

Test Agency	Test Name	Report Identifier	Date
	ASTM C1289	GAF-714-02-01	11/09/16
	ASTM C1289	GAF-769-02-01	03/21/18
	ASTM C1289	GAF-786-02-01	10/30/17
	ASTM D6878	GAF-870-02-01	02/15/19
Trinity | ERD	ASTM D6164	G31360.03.10	03/31/10
	ASTM D6163	G34140.04.11-2	04/25/11
	ASTM D4601	G34140.04.11-4	04/25/11
	ASTM D4897	G34140.04.11-5-R1	10/18/13
	ASTM D6163	G40630.01.14-1	01/06/14
	ASTM D6164	G40630.01.14-2A	01/07/14
	ASTM D1897 / TAS 105	GAF-SC8580.01.16-6	01/20/16
	TAS 114-J	GAF-SC8580.03.16-5-R2	08/29/16
	TAS 114-D / TAS 114-J	GAF-SC8580.11.15-2	11/18/15
	TAS 114-J	GAF-SC8580.11.15-4	11/09/15
NEMO | etc.	ASTM D6163	4q-GAF-19-SSMBB-02.A	04/08/19

DECK STRESS ANALYSIS CALCULATIONS/REPORTS

Engineer/Agency	Identifier	Assemblies	Date
Robert Nieminen, P.E.	GAF-SC8580.11.15-4	E(1)	11/09/15
Randall Fowler, P.E.	ACRC 15-028	E(2)	02/17/16
Randall Fowler, P.E.	ACRC 16-002	E(3)	03/15/16
Robert Nieminen, P.E.	GAF-SC8580.03.16-5-R2	E(4), E(5)	08/29/16
Duc T. Nguyen, P.E.	GAF-457-02-04	F(1)	10/27/16
Robert Nieminen, P.E.	GAF-SC8580.11.15-2	F(7)	11/18/15
Duc T. Nguyen, P.E.	GAF-538-02-03	F(8)	10/27/16

APPROVED ASSEMBLIES:

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type E(1): Anchor sheet mechanically attached membrane subsequently adhered.

Deck Description: Minimum 231 psi Generic Lightweight Concrete cast over steel deck.
*Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 70.46 lbf when tested with CR Assembled Base Sheet Fasteners (1.7 in.), Trufast FM-90 Base Sheet Fasteners or Trufast Twin Loc-Nail Assembled Fasteners in accordance with TAS 105.

Deck : Min. 22 ga., 33 ksi, Type BV, G-90 steel decking over ¼" thick steel supports spaced max. 6 ft. o.c. attached 6" o.c. using min. 5/8" diameter puddle welds. Deck side laps are attached 18" o.c. using #12 SD screws.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Anchor Sheet: GAFGLAS® #80 Ultima™ Base Sheet, GAFGLAS® Stratavent® Eliminator Nailable Venting Base Sheet or Ruberoid® 20 Smooth mechanically fastened to the lightweight concrete with CR Assembled Base Sheet Fasteners (1.7 in.), Trufast FM-90 Base Sheet Fasteners or Trufast Twin Loc-Nail Assembled Fasteners fastened 7" o.c. in the 4" wide side laps and 7" o.c. in two staggered rows in the field of the sheet.

Base Ply (optional): Ruberoid® 20 Smooth, Ruberoid® Mop Smooth 1.5 or GAFGLAS® FlexPly adhered in hot asphalt at 20-25 lbs./sq.

Membrane: Flex TPO II FB adhered in hot asphalt at 20-25 lbs./sq. The side laps are sealed with a 1.5" wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

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

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type E(2): Anchor sheet mechanically attached membrane subsequently adhered.

Deck Description: Minimum 205 psi Generic Lightweight Concrete cast over steel deck.
*Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 77.93 lbf when tested with CR Assembled Base Sheet Fasteners (1.7 in.), Trufast FM-90 Base Sheet Fasteners or Trufast Twin Loc-Nail Assembled Fasteners in accordance with TAS 105.

Steel Deck: Min. 22 ga., 33 ksi, Type BV, G-90 steel decking over ¼" thick steel supports spaced max. 6 ft. o.c. attached 6" o.c. using min. 5/8" diameter puddle welds. Deck side laps are attached 18" o.c. using #12 SD screws.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Anchor Sheet: Ruberoid® 20 Smooth mechanically fastened to the lightweight concrete with CR Assembled Base Sheet Fasteners (1.7 in.), Trufast FM-90 Base Sheet Fasteners or Trufast Twin Loc-Nail Assembled Fasteners fastened 7" o.c. in the 4" wide side laps and 7" o.c. in two staggered rows in the field of the sheet.
Or
GAFGLAS® #80 Ultima or GAFGLAS® Stratavent® Eliminator Nailable Venting Base Sheet mechanically fastened to the lightweight concrete with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast Twin Loc-Nail Assembled Fasteners fastened 7" o.c. in the 4" wide side laps and 7" o.c. in two staggered rows in the field of the sheet.

Base Ply: Ruberoid® 20 Smooth adhered in hot asphalt at 20-25 lbs./sq. (Only for use with GAFGLAS® Stratavent® Eliminator Nailable Venting Base Sheet anchor sheets).
Or
GAFGLAS® FlexPly 6 adhered in hot asphalt at 20-25 lbs./sq. (Only for use with Ruberoid® 20 Smooth anchor sheet).

Membrane: Flex TPO II FB adhered in hot asphalt at 20-25 lbs./sq. The side laps are sealed with a 1.5" wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

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

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type E(3): Membrane is mechanically fastened through LWC to the structural deck.

Deck Description: A minimum 2" thick pour of Generic Lightweight Concrete, minimum 210 psi, is poured over the structural deck per manufacturer's instructions.* Structural deck should record a Minimum Characteristic Resistance Force (MCRF) of 405 lbf when tested with OMG XHD fasteners through the LWC into the steel deck or OMG Heavy Duty fasteners through the LWC into the structural concrete deck in accordance with TAS 105.
*Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 97 lbf when tested with CR Assembled Base Sheet Fastener (1.7 in.) or Trufast Twin Loc-Nail Assembled Fasteners in the LWC in accordance with TAS 105.

Deck: Minimum 22 ga. type BV, G-90 steel meeting ASTM A653 with minimum 33 ksi yield strength at 72" spans, attached with 5/8" puddle welds spaced 6" o.c. Side laps are attached with #12-24 x 7/8" HWH spaced 18" o.c.
Or
Structural Concrete.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Membrane: Flex TPO II or Flex TPO II FB is mechanically attached with OMG XHD fasteners or OMG Heavy Duty fasteners (to be used when fastening into structural concrete only) and OMG 2" Barbed Plates, OMG 2-3/8" Barbed XHD Plates or OMG Eyehook Accuseam Plates spaced 12" o.c. within 6" wide side laps with rows spaced 54" o.c.; sealed with a 1.5 in. wide heat weld.

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

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type E(4): Membrane is mechanically fastened through LWC to the structural deck.

Deck Description: Generic Lightweight Concrete, minimum 180 psi, is poured over the steel deck per manufacturer's instructions. *Structural deck should record a Minimum Characteristic Resistance Force (MCRF) of 608 lbf when tested with OMG XHD fasteners through the LWC into the steel or OMG Heavy Duty fasteners through the LWC into the structural concrete in accordance with TAS 105. *Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 97 lbf when tested with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast Twin Loc-Nail Assembled Fasteners in accordance with TAS 105.

Deck: Minimum 22 ga. type BV, G-90 steel meeting ASTM A653 with minimum 49 ksi yield strength at 72" spans, attached with 5/8" puddle welds spaced 6" o.c. Side laps are attached with #12-24 x 7/8" HWH spaced 18" o.c.
Or
Structural Concrete
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Membrane: Flex TPO II or Flex TPO II FB is mechanically attached with OMG XHD fasteners or OMG Heavy Duty fasteners (to be used when fastening into structural concrete only) and OMG 2-3/4" Super XHD Barbed Plates spaced 12" o.c. within 6" wide side laps with rows spaced 54" o.c.; sealed with a 1.5 in. wide heat weld.

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

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(1): Membrane adhered to roof deck.

Deck Description: Mearlcrete Cellular Lightweight Insulated Concrete over Steel

Lightweight Concrete: The deck is filled with a slurry coat of Mearlcrete Cellular Lightweight Concrete, minimum 297 psi, to a depth of 1/8" above the top deck rib. EPS Holey Board with 3" diameter holes is placed into the slurry, followed by a minimum 2" thick pour of Mearlcrete Cellular Lightweight concrete, minimum 297 psi.

Steel Deck: Minimum 22 ga. 33 ksi, Type BV, G-90, at 6' span, 5/8" puddle welds at 6" o.c. along structural supports. Deck side laps secured at 18" o.c. with #12-14 x 7/8 HWH.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -52.5 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(2): Membrane adhered to roof deck.

Deck Description: Mearlcrete Cellular Lightweight Concrete over Structural Concrete

Lightweight Concrete: The deck is filled with a slurry coat of Mearlcrete Cellular Lightweight Concrete, minimum 297 psi, to a depth of 1/8" above the top deck rib. EPS Holey Board with 3" diameter holes is placed into the slurry, followed by a minimum 2" thick pour of Mearlcrete Cellular Lightweight concrete, minimum 297 psi.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -205 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(3): Membrane adhered to roof deck.

Deck Description: Elastizell Cellular Lightweight Concrete over Structural Concrete.

Lightweight Concrete: A 1/8" thick slurry of Elastizell Cellular Lightweight Concrete, minimum 222 psi, is poured over structural concrete deck. EPS Holey Board with 3" diameter holes is placed into the slurry, followed by a minimum 2" thick pour of Elastizell Cellular Lightweight Concrete, minimum 222 psi.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -200 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(4): Membrane adhered to roof deck.

Deck Description: Elastizell Lightweight Concrete over Structural Concrete.

Lightweight Concrete: A 1/8" thick slurry of Elastizell Cellular Lightweight Concrete, minimum 300 psi, is poured over structural concrete deck. **(Optional)** EPS Holey Board with 3" diameter holes is placed into the slurry, followed by a minimum 2" thick pour of Elastizell Cellular Lightweight Concrete, minimum 300 psi.

Concrete Deck: Minimum 3000 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied to the substrate in ¾" wide ribbons spaced 6" o.c. The side laps are sealed with a 1.5" wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. in accordance with manufacturer's instructions. The side laps are sealed with a 1.5" wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -75 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(5): Membrane adhered to roof deck.

Deck Description: Concrecel Cellular Lightweight Concrete over Structural Concrete.

Lightweight Concrete: A 1/8" thick slurry of Concrecel Cellular Lightweight Concrete, minimum 200 psi, is poured over structural concrete deck. EPS Holey Board with 3" diameter holes is placed into the slurry, followed by a minimum 2" thick pour of Concrecel Cellular Lightweight Concrete, minimum 200 psi.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. in accordance with manufacturer's instructions. The side laps are sealed with a 1.5" wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

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

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(6): Membrane adhered to roof deck.

Deck Description: Celcore Cellular Lightweight Concrete over Structural Concrete.

Lightweight Concrete: Celcore Cellular Lightweight Concrete, minimum 200 psi, is poured over structural concrete deck per manufacturer's instructions.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive or Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

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

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(7): Membrane adhered to roof deck.

Deck Description: Generic Lightweight Concrete, minimum 180 psi, is poured over the steel deck per manufacturer's instructions.
*Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 70.46 lbf when tested with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast FM-90 Base Sheet Fasteners in accordance with TAS 105.

Steel Deck: 22 ga. type BV, G-90 steel meeting ASTM A653, Grade 33 at 72" spans, attached with 5/8" puddle welds spaced 6-inch o.c. Side laps are attached with #12-24 x 7/8" HWH spaced 18" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -52.5 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(8): Membrane adhered to roof deck.

Deck Description: Generic Lightweight Concrete, minimum 180 psi, is poured over the structural concrete deck per manufacturer's instructions. *Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 97 lbf. when tested with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast FM-90 Base Sheet Fasteners in accordance with TAS 105.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive applied in 0.75″ ribbons 4″ o.c. for full coverage. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.
Or
One ply of Flex TPO II FB adhered to lightweight insulating concrete using Flex EG WB 181 TPO Bonding Adhesive applied at 120 ft^2/gal. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -75 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(9): Membrane adhered to roof deck.

Deck Description: Generic Lightweight Concrete, minimum 180 psi, is poured over the structural concrete deck per manufacturer's instructions. *Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 97 lbf. when tested with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast FM-90 Base Sheet Fasteners in accordance with TAS 105.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium PG-1 Pump Grade Adhesive applied in 0.75″ ribbons 6″ o.c. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -67.5 psf (See General Limitation #9)

Membrane Type: TPO

Deck Type 4: Lightweight Insulating Concrete, Non-Insulated

System Type F(10): Membrane adhered to roof deck.

Deck Description: Generic Lightweight Concrete, minimum 180 psi, is poured over the structural concrete deck per manufacturer's instructions. *Lightweight concrete should record a Minimum Characteristic Resistance Force (MCRF) of 97 lbf. when tested with CR Assembled Base Sheet Fasteners (1.7 in.) or Trufast FM-90 Base Sheet Fasteners in accordance with TAS 105.

Concrete Deck: Minimum 2500 psi structural concrete.

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

Membrane: One ply of Flex TPO II FB adhered to lightweight insulating concrete using Millennium One Step Foamable Adhesive applied in 0.75″ ribbons 6″ o.c. The side laps are sealed with a 1.5″ wide heat weld for automatic machine welding. Weld width shall be a minimum 2" width for hand welding.

Maximum Design Pressure: -75 psf (See General Limitation #9)

LIGHTWEIGHT INSULATING CONCRETE SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137; calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For Systems where specific lightweight insulating concrete is referenced consult current lightweight insulating concrete NOA for specific deck construction and limitations. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.

GENERAL LIMITATIONS:

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