



**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)

**CertainTeed Corporation
1400 Union Meeting Road
Blue Bell, PA 19422**

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: CertainTeed Modified Bitumen Roof 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 renews NOA No. 03-0314.05 and consists of pages 1 through 19.
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 08-0227.08
Expiration Date: 05/22/13
Approval Date: 05/08/08
Page 1 of 19**

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified
Material:	APP, SBS
Deck Type:	Lightweight Insulating Concrete
Maximum Design Pressure	-67.5 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>
All Weather/Empire Base Sheet	36" x 72'; Roll weight: 86 lbs. (2 squares)	ASTM D 2626 UL Type 15	Asphalt coated organic base sheet.
Flex-I-Glas™ Base Sheet	36" x 108'; Roll weight: 90 lbs. (3 squares)	UL Type G2 ASTM D 4601, type II	Modified Bitumen coated fiberglass base sheet.
Flex-I-Glas™ FR Base Sheet	39 3/8" x 50'; Roll weight: 90 lbs. (1.5 squares)	UL Type G2 ASTM D 4601, type II	Modified Bitumen coated fiberglass base sheet.
Flintglas® Ply Sheet Type IV or VI	36" x 180'; Roll weight: 40/55 lbs. (5 squares)	ASTM D 2178 Type IV or VI UL Type G1	Fiberglass, asphalt impregnated ply sheet.
Flintlastic STA STA Plus 5.0	39 3/8" x 33'; Roll weight: 90 lbs. (1 square)	ASTM D 6222, Grade S, Type II	Smooth surfaced APP Modified Bitumen membrane with non-woven polyester mat reinforcement for torch application.
Flintlastic GTA, GTA-FR or Flintlastic Diamond GTA	39 3/8" x 33' 3"; Roll weight: 105 lbs. (1 square)	ASTM D 6222, Grade G, Type II	Granule surfaced APP Modified Bitumen membrane with non-woven polyester mat reinforcement for torch application.
Flintlastic GTS	39 3/8" x 24'9"; Roll weight: 92 lbs. (3/4 square)	ASTM D 6164, Grade G, Type II	Granule surfaced SBS Modified Bitumen membrane with non-woven polyester mat reinforcement for torch application.
Flintlastic GMS, GMS Premium	39 3/8" x 34' 2"; Roll weight: 100/105 lbs. (1 square)	ASTM D 6164, Grade G, Type II	Granule surfaced SBS Modified Bitumen membrane with non-woven polyester mat reinforcement for mop application.
Flintlastic FR, FR-P Premium	39 3/8" x 34' 2"; Roll weight: 105 lbs. (1 square)	ASTM D 6164, Grade G, Type I	Fire resistant, granule surfaced SBS Modified Bitumen Membrane with non-woven polyester mat reinforcement for mop application.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Flintlastic FR Cap Sheet	39 3/8" x 34' 2"; Roll weight: 90 lbs. (1 square)	ASTM D 6163, Grade G, Type I	Fire resistant, granule surfaced SBS Modified Bitumen membrane with fiberglass mat reinforcement for mop applications.
Flexiglas Premium Cap 960	36" x 38" (1 square)	ASTM D 6163, Grade G, Type I	Granule surfaced SBS Modified Bitumen membrane with fiberglass mat reinforcement for mop applications.
Ultra Poly SMS	36" x 64' 4" (2 squares)	ASTM D 6164, Grade S, Type I	Smooth surfaced SBS Modified Bitumen Membrane with non-woven polyester mat reinforcement for mop applications.
GlasBase™ Base Sheet	36" x 108'; Roll weight: 69 lbs. (3 squares)	ASTM D 4601 UL Type G2	Asphalt coated, fiberglass base sheet.
PolySMS Base Sheet	39 3/8" x 64' 4"; Roll weight: 90 lbs. (2 squares)	ASTM D 5147	Modified Bitumen coated polyester base sheet.
Yosemite® Mineral Surfaced Cap Sheet	36" x 36'; Roll weight: 90 lbs. (1 square)	ASTM D 249 UL Type 30	Mineral Surfaced organic cap and buffer sheet.
Black Diamond Base Sheet	36" x 75'; Roll weight 75 lbs. (2.25 squares)	TAS 103 ASTM D 1979	Slag surfaced SBS Modified Bitumen sheet with fiberglass reinforcement for peel and stick application.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
PYROX, White Line	Polyisocyanurate foam insulation	Apache Products Co.
ACFoam I, II	Polyisocyanurate foam insulation	Atlas Energy Products
High Density Wood Fiberboard	Wood fiber insulation board	generic
Perlite Insulation	Perlite insulation board	generic
Dens Deck	Water resistant gypsum board	G-P Gypsum Corp.
ENRGY-2 & ENRGY-2 PLUS	Polyisocyanurate foam insulation	Johns Manville
FiberGlass Roof Insulation	Glass fiber/Mineral fiber insulation	Johns Manville
ISORoc	Polyisocyanurate foam / rockwool composite insulation	Johns Manville



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Paroc Cap Board	Rockwool insulation	Partek, Inc.
Multi-Max & FA	Polyisocyanurate roof insulation	RMax, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	FM-30, FM-45, FM-60, FM-90 Fasteners	Base ply fastening systems for lightweight concrete decks.		ES Products, Inc.
2.	Olympic CR Base Felt Fastener	Fastener assembly for Base Sheet fastening only		Olympic Mfg. Group
3.	Base-Lok Fastener	Nylon base sheet fastener.		Simplex Nails & Fasteners

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Applied Research Laboratories	Physical Properties	28013	06/02/87
Factory Mutual Research Corp.	FMRC 4470	J.I. 3Y8A1.AM	03/23/96
Factory Mutual Research Corp.	FMRC 4470	J.I. 0D3A3.AM	04/04/97
Factory Mutual Research Corp.	FMRC 4470	J.I. 2D0A0.AM	12/23/98
Factory Mutual Research Corp.	FMRC 4470	J.I. 1D7A4.AM	11/09/98
Underwriters Laboratories, Inc.	Fire Classification Compliance	R11656	07/13/87
United States Testing Company	ASTM D 5147	97457-4	06/03/88
United States Testing Company	ASTM D 5147	97-457-2R	12/02/87
Exterior Research & Design, LLC	TAS 114(J)	#3504.06.01-1	06/05/01



APPROVED ASSEMBLIES

- Membrane Type:** APP Modified
- Deck Type 4I:** Lightweight Concrete, Insulated
- Deck Description:** Concrecel Cellular Lightweight Concrete
- System Type A(1):** Anchor sheet mechanically fastened, one or more layer of insulation adhered with approved asphalt.
- Deck:** Structural concrete or 18-22 Ga. steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on center with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum 1/4" slurry-coat of insulating concrete and allowed to the cure overnight. The following day the rigid insulation shall be covered with a minimum 2 1/4" topcoat cast of Concrecel. After an additional cure time of 24 hours, Concrecel curing compound was a roller applied at a rate of 300sq. ft/gal.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners	Fastener Density/ft²
Pyrox Minimum 1.3" thick	N/A	N/A
AC-Foam I, ENRGY 2, PSI-25, UltraGuard Gold Minimum 1.5" thick	N/A	N/A
High Density Wood Fiber Minimum 1/2" thick	N/A	N/A
Perlite Minimum 3/4" thick	N/A	N/A
Fiberglas Minimum 15/16" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners	Fastener Density/ft²

Any Insulations listed for Base Layer, above.

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.



- Anchor Sheet:** One ply or more plies of GlasBase, All Weather/Empire, Flex-I-Glas, Flex-I Glas FR, or PolySMS Base fastened to the deck as described below:
- Fastening:** Fasten base sheet to deck with Olympic CR Base Ply Fasteners spaced at 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.
- Base Sheet:** One or more plies of GlasBase, Flex-I Glas Base, Flex-I Glas FR Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Ply Sheet:** (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Membrane:** Flintlastic STA, Flintlastic STA Plus 5.0, Flintlastic Diamond GTA, Flintlastic GTA or GTA-FR torch adhered to base or ply sheet.
- Surfacing:** (Optional) Install one of the following:
1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
 2. Karnak 97, APOC 212 Fibrated Aluminum, Henry 520 Aluminum or Grundy AL MB at an application rate of 1½ gal. /sq., or APOC Sunbrite at an application rate of 3 gal. /sq.
- Maximum Design Pressure:** -52.5 psf (See General Limitation #7)



- Membrane Type:** SBS Modified
- Deck Type 4I:** Lightweight Concrete, Insulated
- Deck Description:** Concrecel Cellular Lightweight Concrete
- System Type A(2):** Anchor sheet mechanically fastened, one or more layer of insulation adhered with approved asphalt.
- Deck:** Structural concrete or 18-22 ga. steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on center with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum ¼" slurry-coat of insulating concrete and allowed to the cure overnight. The following day the rigid insulation shall be covered with a minimum 2 ¼" topcoat cast of Concrecel. After an additional cure time of 24 hours, Concrecel curing compound was a roller applied at a rate of 300sq. ft/gal.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners	Fastener Density/ft²
Pyrox Minimum 1.3" thick	N/A	N/A
AC-Foam I, ENRGY 2, PSI-25, UltraGuard Gold Minimum 1.5" thick	N/A	N/A
High Density Wood Fiber Minimum ½" thick	N/A	N/A
Perlite Minimum ¾" thick	N/A	N/A
Fiberglas Minimum 15/16" thick	N/A	N/A
Dens Deck Minimum ¼" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners	Fastener Density/ft²

Any Insulations listed for Base Layer, above.

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.



- Anchor Sheet:** One or more plies of All Weather/Empire, Flex-I-Glas, Flex-I-Glas FR, or PolySMS Base fastened to the deck as described below:
- Fastening:** Fasten base sheet to deck with Olympic CR Base Ply Fasteners spaced at 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.
- Base Sheet:** One or more plies of Glas Base, Flex-I Glas Base, Flex-I Glas FR Base, Poly SMS, Ultra Poly SMS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Ply Sheet:** (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Membrane:** One or more plies of Flintlastic GMS, Flintlastic Premium GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic FR Cap Sheet, Flexiglas Premium Cap 960 or Ultra Poly SMS adhered to ply sheet with approved mopping asphalt applied within the EVT range and at a rate of 20 to 40 lbs./sq. or Flintlastic GTS torch adhered to ply sheet.
- Surfacing:** (Optional) Install one of the following:
1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
 2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1½ gal./sq., or APOC Sunbrite at an application rate of 3 gal./sq.
- Maximum Design Pressure:** -52.5 psf (See General Limitation #7)



- Membrane Type:** APP Modified
- Deck Type 4I:** Lightweight Concrete, Insulated
- Deck Description:** Mearlcrete or Elastizel Cellular Lightweight Concrete
- System Type A(3):** Anchor sheet mechanically fastened, one or more layer of insulation adhered with approved asphalt.
- Deck:** Structural concrete or min. 22 ga., type BW slotted steel deck attached to steel supports spaced at a maximum 5 ft. o.c. with 5/8" puddle welds or with 3/8" welding washers spaced maximum 6" o.c. (at each flute). Steel deck side laps are attached 18" o.c. with Traxx/1 fasteners or #10 self-tapping screws. Mearlcrete cast at 40 pcf wet density or Range II Elastizel is applied with an 1/8" slurry coat followed by optional min. 2" thick Star-R-Foam Gripper EPS board or min. 1" thick Apache Corrugated Holey Board or Mearl Corrugated EPS Insulation. A min. 2" thick cap of Mearlcrete or Elastizel is placed over the insulations.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners	Fastener Density/ft²
Pyrox Minimum 1.3" thick	N/A	N/A
AC-Foam I, ENRGY 2, PSI-25, UltraGuard Gold Minimum 1.5" thick	N/A	N/A
High Density Wood Fiber Minimum 1/2" thick	N/A	N/A
Perlite Minimum 3/4" thick	N/A	N/A
Fiberglas Minimum 15/16" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners	Fastener Density/ft²

Any Insulations listed for Base Layer, above.

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.



- Anchor Sheet:** (Option #1) One or more plies of GlasBase, All Weather/Empire, Flex-I-Glas, Flex-I-Glas FR, mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 9" o.c. in two evenly divided, staggered rows in the center of the sheet.
- (Option #2) One or more plies of All Weather/Empire mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 12" o.c. in two evenly divided, staggered rows in the center of the sheet.
- (Option #3) One or more plies of All Weather/Empire or GlasBase mechanically attached to the deck using Olympic CR Base Ply Fasteners, or ES Products FM-90 Base Ply Fasteners spaced 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.
- Base Sheet:** One or more plies of Glas Base, Flex-I Glas Base, Flex-I Glas FR Base, Poly SMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Ply Sheet:** (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Membrane:** Flintlastic STA, Flintlastic STA Plus 5.0, Flintlastic Diamond GTA, Flintlastic GTA or GTA-FR torch adhered to base or ply sheet.
- Surfacing:** (Optional) Install one of the following:
1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
 2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1½ gal. /sq., or APOC Sunbrite at an application rate of 3 gal. /sq.
- Maximum Design Pressure:** -52.5 psf (See General Limitation #7)



Membrane Type: SBS Modified

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Mearlcrete or Elastizel Cellular Lightweight Concrete

System Type A(4): Anchor sheet mechanically fastened, one or more layer of insulation adhered with approved asphalt.

Deck: Structural concrete or min. 22 ga., type BW slotted steel deck attached to steel supports spaced at a maximum 5 ft. o.c. with 5/8" puddle welds or with 3/8" welding washers spaced maximum 6" o.c. (at each flute). Steel deck side laps are attached 18" o.c. with Traxx/1 fasteners or #10 self-tapping screws. Mearlcrete cast at 40 pcf wet density or Range II Elastizel is applied with an 1/8" slurry coat followed by optional min. 2" thick Star-R-Foam Gripper EPS board or min. 1" thick Apache Corrugated Holey Board or Mearl Corrugated EPS Insulation. A min. 2" thick cap of Mearlcrete or Elastizel is placed over the insulation.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners	Fastener Density/ft²
Pyrox Minimum 1.3" thick	N/A	N/A
AC-Foam I, ENRGY 2, PSI-25, UltraGuard Gold Minimum 1.5" thick	N/A	N/A
High Density Wood Fiber Minimum 1/2" thick	N/A	N/A
Perlite Minimum 3/4" thick	N/A	N/A
Fiberglas Minimum 15/16" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners	Fastener Density/ft²

Any Insulations listed for Base Layer, above.

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.



- Anchor Sheet:** (Option #1) One or more plies of GlasBase, All Weather/Empire, Flex-I-Glas or Flex-I-Glas FR, mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 9" o.c. in two evenly divided, staggered rows in the center of the sheet.
- (Option #2) One or more plies of All Weather/Empire mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 12" o.c. in two evenly divided, staggered rows in the center of the sheet.
- (Option #3) One or more plies of All Weather/Empire or GlasBase mechanically attached to the deck using Olympic CR Base Ply Fasteners, or ES Products FM-90 Base Ply Fasteners spaced 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.
- Base Sheet:** One or more plies of Glas Base, Flex-I Glas Base, Flex-I Glas FR Basé, Poly SMS Base, Ultra Poly SMS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Ply Sheet:** (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Membrane:** One or more plies of Flintlastic GMS, Flintlastic Premium GMS, Flintlastic FR-P, Flintlastic FR Cap Sheet, Flexiglas Premium Cap 960 or Ultra Poly SMS adhered to ply sheet with approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs/sq. or Flintlastic GTS torch adhered to ply sheet.
- Surfacing:** (Optional) Install one of the following:
1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
 2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1½ gal./sq., or APOC Sunbrite at an application rate of 3 gal./sq.
- Maximum Design Pressure:** -52.5 psf (See General Limitation #7)



Membrane Type: APP Modified
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Concrecel Cellular Lightweight Concrete
System Type E(1): Base sheet mechanically fastened.

Deck: Structural concrete or 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on center with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum ¼" slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2 ¼" topcoat cast of Concrecel. After an additional cure time of 24 hours, Concrecel Curing Compound was roller applied at a rate of 300-sq. ft/gal.

All General and System limitations apply.

Base Sheet: One or more plies of GlasBase, All Weather/Empire, Flex-I-Glas, Flex-I-Glas FR, or Poly SMS Base fastened to the deck as described below:

Fastening: Fasten base sheet to deck with Olympic CR Base Ply Fasteners spaced 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: Flintlastic STA, Flintlastic STA Plus 5.0, Flintlastic Diamond GTA, Flintlastic GTA or GTA-FR torch adhered to base or ply sheet.

Surfacing: (Optional) Install one of the following:
1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. ± 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum, Henry 520 Aluminum or Grundy AL MB at an application rate of 1½ gal./sq., or APOC Sunbrite at an application rate of 3 gal./sq

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



Membrane Type: SBS Modified

Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Concrecel Cellular Lightweight Concrete

System Type E(2): Base sheet mechanically fastened.

Deck: Structural concrete or 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft. on center with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at a rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum 1/4" slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2 1/4" topcoat cast of Concrecel. After an additional cure time of 24 hours Concrecel curing compound was roller applied at a rate of 300-sq. ft/gal.

All General and System limitations apply.

Base Sheet: One or more plies of Glas Base, Al Weather/Empire, Flex-I-Glas, Flex-I-Glas FR, or PolySMS Base fastened to the deck as described below:

Fastening: Fasten base sheet to the deck with Olympic CR Base Ply fasteners spaced 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies of Flintlastic GMS, Flintlastic Premium GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic FR-PG or Flintlastic FR Cap Sheet, Flexiglas Premium Cap 960 or Ultra Poly SMS adhered to ply sheet with approved mopping asphalt applied within the EVT range and at a rate of 20 to 40 lbs./sq. or Flintlastic GTS torch adhered to ply sheet.

Surfacing: (Optional) Install one of the following:

1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1 1/2 gal. /sq., or APOC Sunbrite at an application rate of 3 gal./sq.

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



Membrane Type: APP Modified

Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Mearlcrete or Elastizell Cellular Lightweight Concrete

System Type E(3): Base sheet mechanically fastened.

Deck: Structural concrete or min. 22 ga., type BW slotted steel deck attached to steel supports spaced maximum 5ft. o.c. (at each flute). Steel deck side laps are attached 18" o.c. with Traxx/1 fasteners or # 10 self-tapping screws. Mearlcrete cast at 40 pcf wet density or Range II Elastizell is applied with an 1/8" slurry coat followed by optional min. 2" thick Star-R-Foam Gripper EPS board or min. 1" thick Apache Corrugated Holey Board or Mearl Corrugated EPS Insulation. A min. 2" thick cap of Mearlcrete or Elastizell is placed over the insulation.

All General and System limitations apply.

Base Sheet: (Option#1) One or more plies of Glas Base, all Weather/Empire, Flex-I-Glas or Flex-I-Glas FR mechanically attached to the deck using Simplex Base-Lok fasteners spaced at 9" o.c. in the 4" side lap and 9" o.c. in two evenly divided, staggered rows in the center of the sheet.

(Optional #2) One or more plies of All Weather/empire mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 12" o.c. in two evenly divided, staggered rows in the center of the sheet.

(Option #3) One or more plies of All Weather/Empire or Glas Base mechanically attached to the deck using Olympic CR Base Ply Fasteners, or ES Products FM-90 Base Ply Fasteners space 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flex-I-Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type VI) adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: Flintlastic STA, Flintlastic STA Plus 5.0, Flintlastic Diamond GTA, Flintlastic GTA or GTA-FR torch adhered to base or ply sheet.

Surfacing: (Optional) Install one of the following:

1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum, Henry 520 Aluminum or Grundy AL MB at an application rate of 1½ gal./sq., or APOC Sunbrite at an application rate of 3 gal./sq

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



Membrane Type: SBS Modified

Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Mearlcrete or Elastizell Cellular Lightweight Concrete

System Type E(4): Base sheet mechanically fastened.

Deck: Structural concrete or min. 22ga., type BW slotted steel deck attached to steel supports spaced maximum 5ft. o.c. with 5/8" puddle welds or with 3/8" welding washers spaced maximum 6" o.c. (at each flute). Steel deck side laps are attached 18" o.c. with Traxx/1 fasteners or #10 self-tapping screws. Mearlcrete cast at 40 pcf wet density or Range II Elastizell is applied with an 1/8" slurry coat followed by optional min. 2" thick Star-R-Foam Gripper EPS board or min. 1" thick Apache Corrugated Holey Board or Mearl Corrugated EPS Insulation. A min. 2" thick cap of Mearlcrete or Elastizell is placed over the insulation.

All General and System limitations apply.

Base Sheet: (Option #1) One or more plies of Glas Base, All Weather/Empire, Flex-I- Glas, or Flex-I-Glas FR mechanically attached to the deck using Simplex Base-Lok fasteners spaced 9" o.c. in the 4" side lap and 9" o.c. in two evenly divided, staggered rows in the center of the sheet.

(Option #2) One or more plies of All Weather/Empire mechanically attached to deck using Simplex Base-Lok fastener spaced 9" o.c. in the 4" side lap and 12" o.c. in two evenly divided, staggered rows in the center of the sheet.

(Option #3) One or more plies of All weather/Empire or Glas Base mechanically attached to the deck using Olympic CR Base Ply Fasteners, or ES Products FM-90 Base Ply fasteners spaced 7" o.c. in the 4" side lap and 7" o.c. in two evenly divided, staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flex-I Glas Base, Flex-I-Glas FR Base, PolySMS Base, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply Sheet (Type V) adhered in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40lbs./sq.

Membrane: One or more plies Flintlastic GMS, Flintlastic Premium GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic FR Cap Sheet, Flexiglas Premium Cap 960 or Ultra Poly SMS adhered to ply sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or Flintlastic GTS torch adhered to ply sheet.

Surfacing: (Optional) Install one of the following:

1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1½ gal. /sq., or APOC Sunbrite at an application rate of 3 gal./sq.

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



NOA No.: 08-0227.08
Expiration Date: 05/22/13
Approval Date: 05/08/08
Page 16 of 19

Membrane Type: APP Modified

Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Strong Seal Roof Fill Lightweight

System Type E(5): Base sheet mechanically fastened.

Deck: Structural concrete or min. 22ga. Steel, galvanized, type B 0.75% slotted steel deck welded 6" o.c. to steel supported spaced 5 ft.o.c. Steel is coated with concrete bonding agent prior to application of LWC. Strong Seal Roof Fill (65 pcf wet density for a target 300-350 psi compressive strength) preblended cementitious lightweight concrete applied to steel deck flutes to a thickness of ¼" above top flute min. 2" thick Apache Holey Board, pressed into the slurry coat. The slurry and EPS are allowed to sit approximately 24 hours prior to application of the topcoat. The EPS insulation is covered with a 3" thick application of the Strong Seal Roof Fill. Roof System installation commences when the top surface becomes walkable (2-3days).

All General and System limitations apply.

Base Sheet: Flexiglas, Flexiglas FR or Poly SMS Base Sheet fastened to the deck as described below:

Fastening: Fasten base sheet to deck with ES Products FM-90 fasteners spaced 7" o.c. in a 4" lap and 10" o.c. in two staggered rows in the field of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flexiglas, Flexiglas FR, Poly SMS, Ultra Poly SBS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply (Type VI) adhered to the base sheet in a full mopping of hot asphalt or one ply of Black Diamond Base Sheet, self-adhered to the base sheet.

Membrane: Flintlastic STA, Flintlastic STA Plus 5.0, Flintlastic Diamond GTA, Flintlastic GTA or GTA-FR torch adhered to base o ply sheet.

Surfacing: (Optional) Install one of the following:

1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. ± 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum, Henry 520 Aluminum or Grundy AL MB at an application rate of 1½ gal./sq., or APOC Sunbrite at an application rate of 3 gal./sq

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



Membrane Type: SBS Modified

Deck Type 4: Lightweight Concrete, Non-insulated

Deck Description: Strong Seal Roof Fill Lightweight Concrete

System Type E(6): Base sheet mechanically fastened.

Deck: Structural concrete or min. 22ga. Steel, galvanized, type B 0.75% slotted steel deck welded 6" o.c. to steel supported spaced 5 ft.o.c. Steel is coated with concrete bonding agent prior to application of LWC. Strong Seal Roof Fill (65 pcf wet density for a target 300-350 psi compressive strength) preblended cementitious lightweight concrete applied to steel deck flutes to a thickness of 1/4" above top flute min. 2" thick Apache Holey Board, pressed into the slurry coat. The slurry and EPS are allowed to sit approximately 24 hours prior to application of the top coat. The EPS insulation is covered with a 3" thick application of the Strong Seal Roof Fill. Roof System installation commences when the top surface becomes walkable (2-3days).

All General and System limitations apply.

Base Sheet: (Flexiglas, Flexiglas FR or Poly SMS Base Sheet fastened to the deck as described below:

Fastening: Fasten base sheet to deck with ES Products FM-90 fasteners spaced 7" o.c. in a 4" lap and 10" o.c. in two staggered rows in the field of the sheet.

Ply Sheet: (Optional) One or more plies of Glas Base, Flexiglas, Flexiglas FR, Poly SMS, Ultra Poly SBS, Flintglas Ply Sheet (Type IV) or Flintglas Premium Ply (Type VI) adhered to the base sheet in a full mopping of hot asphalt or one ply of Black Diamond Base Sheet, self-adhered to the base sheet.

Membrane: One or more plies of Flintlastic GMS, Flintlastic Premium GMS, Flintlastic FR-P, Flintlastic FR Cap Sheet, Flexiglas Premium Cap 960 or Ultra Poly SMS adhered to ply sheet with approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or Flintlastic GTS torch adhered to the ply sheet.

Surfacing: (Optional) Install one of the following:

1. Flood coat of hot asphalt with an application rate of 60 lbs./sq. \pm 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Karnak 97, APOC 212 Fibrated Aluminum or Grundy AL MB at 1 1/2 gal. /sq., or APOC Sunbrite at an application rate of 3 gal./sq.

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



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, 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 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 Professional Engineer, Registered 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 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.)**

END OF THIS ACCEPTANCE



NOA No.: 08-0227.08
Expiration Date: 05/22/13
Approval Date: 05/08/08
Page 19 of 19