MIAMI-DADE

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)

Carlisle Syntec, Inc.
1285 Ritner Highway
Carlisle, PA 17013

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: Carlisle Sure-Weld Single Ply TPO 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 revises NOA # 05-1123.01 and consists of pages 1 through 17.
The submitted documentation was reviewed by Alex Tigera.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	TPO
Deck Type:	Steel
Maximum Design Pressure	-90 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product Name	Dimensions	Test Specifications	Product Description
Sure-Weld Fleece Back	various	TAS 131	Reinforced white or colored TPO membrane with fleece backing.
Sure-Weld FleeceBACK AFX	various	TAS 131	Reinforced white or colored TPO membrane with fleece backing.
Sure-Weld FleeceBACK AFX Plus	various	TAS 131	Reinforced white or colored TPO membrane with fleece backing.
Sure-Weld, Sure-Weld EXTRA	various	TAS 131	Reinforced white or colored TPO membrane.
Sure-Weld GSD, Sure-Weld HS	various	TAS 131	Reinforced white or colored FR TPO membrane.
Sure-Weld Pressure Sensitive RUSS	various	TAS 131	Reinforced Securement Strip.
Carlisle Foamular Durapink Insulation	various	TAS 110	Extruded Polystyrene for white or black mechanically fastened roof systems.
Carlisle Foamular ½" Board	various	TAS 110	Extruded Polystyrene recovery board.
Carlisle Foamular 150, 250, 400, 404, 600	various	TAS 110	Extruded Polystyrene insulation
CCW 702 Primer	various	TAS 110	Solvent-Based Primer
CCW 702LT Primer	various	TAS 110	Low-Temperature Solvent-Based Primer
CCW 714 Primer	various	TAS 110	Water-Based Primer
CCW 725 Vapor Barrier	various	TAS 110	40 mil Vapor Barrier
Fast 100 Adhesive	various	TAS 110	Spray Polyurethane Adhesive
Fast 100-P Adhesive	various	TAS 110	Spray Polyurethane Adhesive
Fast 102 Adhesive	various	TAS 110	Spray Polyurethane Adhesive
Carlilsle One Step	Various	TAS 110	Polyurethane Adhesive
Carlisle Olybond 500BA	Various	TAS 110	Polyurethane Adhesive
Carlisle Versigrip	Various	TAS 110	Polyurethane Adhesive

Product Name	Dimensions	Test Specifications	Product Description
Sure-Weld Bonding Adhesive	various	TAS 110	Solvent-based bonding adhesive.
Aqua Base 120 Bonding Adhesive	Various	TAS 110	Water-based bonding adhesive
Cold Applied Adhesive	Various	TAS 110	Asphalt-Modified Polyether Adhesive

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Pyrox, White Line	Isocyanurate Insulation	Apache Products Co.
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
Polyisocyanurate HP, HP-N, HP-H, HP-W	Polyisocyanurate roof insulation.	Carlisle Syntec, Inc.
Sure-Seal HP Recovery Board	High Density Wood Fiberboard.	Carlisle Syntec, Inc.
Sure-Seal EPS/Fiberboard	High Density Wood Fiberboard bonded to EPS.	Carlisle Syntec, Inc.
Sure Seal EPS Insulation	Expanded Polystyrene.	Carlisle Syntec, Inc.
Styrofoam	Extruded polystyrene insulation	Dow
ISO 95+ GL, 95+ GW	Polyisocyanurate foam insulation	Firestone
Dens Deck, Dens Deck Prime	Silicon treated gypsum	G-P Products
Sturdi-Top	Wood fiber insulation board.	G-P Products
Ultra/M-II	Isocyanurate Insulation	Homasote Co.
ENRGY 2, ENERGY 3, PSI-25	Isocyanurate Insulation	Johns Manville
Fesco Foam	Isocyanurate Insulation with perlite facer	Johns Manville
Retro-Fit	High-density perlite roof insulation.	Johns Manville
Wood Fiberboard	Regular wood fiber insulation	Generic
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Oriented Strand Board	Oriented Strand Board	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Type X Gypsum	Gypsum Wallboard	Generic
XPS	Extruded polystyrene	Generic
Multi-Max, FA	Polyisocyanurate foam insulation	Rmax, Inc.
Fiber Base	Asphalt coated wood fiber insulation	Temple Inland Forest Products Corp.
Structodeck	High Density Wood Fiber insulation board.	Wood Fiber Industries
Insulfoam I and VIII	Expanded Polystyrene	Insulfoam, LLC

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Sure-Seal HP, HP-X, HP-Xtra Fasteners	Insulation and membrane fastener	Various	Carlisle Syntec, Inc.
2.	Sure-Seal Insulation Plates	Metal plates used for insulation securement with Sure-Seal HP fasteners.	3" dia	Carlisle Syntec, Inc.
3.	Piranha, Piranha Xtra Plates	Metal plates used for membrane securement with HP-X & HP-Xtra fasteners.	2-3/8" dia	Carlisle Syntec, Inc.
4.	Dekfast Fasteners #12, #14, #15	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
5.	Dekfast Hex Plate	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
6.	#12 & #14 Roofgrip	Insulation and membrane fastener	Various	ITW Buildex
7.	Metal Plate	Galvalume AZ50 stress plate	3" square	ITW Buildex
8.	Plastic Plate	Polyethylene stress plate	3.2" round	ITW Buildex
9.	Olympic Fasteners #12, #14	Insulation and membrane fastener	Various	Olympic Mfg. Group
10.	Olympic Stainless Fasteners #12, #14	Stainless steel insulation and membrane fastener	Various	Olympic Mfg. Group
11.	Olympic Standard	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
12.	Olympic Plastic	Plastic plates for fasteners.	3" round	Olympic Mfg. Group
13.	Rawl Fasteners #12, #14	Insulation fastener for steel and wood decks	Various	Powers Fasteners Inc.
14.	Rawl Insulation Plate	3" round Galvalume AZ55 stress plate	3" round	Powers Fasteners Inc.
15.	Insul-Fixx Fastener	Insulation fastener for steel and wood decks	Various	SFS Stadler, Inc.
16.	Isofast Fasteners	Insulation fastener for steel and wood decks	Various	SFS Stadler, Inc.
17.	Insul-Fixx S	3" round Galvalume AZ55 stress plate	3" round	SFS Stadler, Inc.
18.	Insul-Fixx P	3" round polyethylene stress plate	3" round	SFS Stadler, Inc.
19.	Isofast Plate	Square or oblong Galvalume steel plates for use with Isofast fasteners		SFS Stadler, Inc.

APPROVED INSULATIONS:

TABLE 2

	Product Name	Product Description		Manufacturer (With Current NOA)
20.	Tru-Fast Fasteners	Insulation and membrane fastener	Various	The Tru-Fast Corp.
21.	Tru-Fast Ultra Stainless Fasteners	Stainless steel insulation and membrane fastener	Various	The Tru-Fast Corp.
22.	Tru-Fast MP-3	3.23" round Galvalume AZ50 steel plate	3.23" round	The Tru-Fast Corp.
23.	Tru-Fast Plastic Plate	Polyethylene stress plate	3" round	The Tru-Fast Corp.
24.	Insta-Lock Screw	Insulation and membrane fastener	Various	Versico, Inc.
25.	Insta-Lock Plate	Galvalume AZ55 stress plate	3" round	Versico, Inc.

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Architectural Testing Inc.	ATI-37050.01	Wind Uplift Classification	3/13/00
Architectural Testing Inc.	ATI-37490.01	ASTM D 2137	7/7/00
Factory Mutual Research Corp.	3003393	Class 4470	3/30/99
Factory Mutual Research Corp.	3003393 (Letter Report)	Wind Uplift Classification	3/26/99
Factory Mutual Research Corp.	3001522	Wind Uplift Classification	3/26/99
Factory Mutual Research Corp.	3001522 (Letter Report)	Wind Uplift Classification	11/3/98
Factory Mutual Research Corp.	3Z9A1.AM	Wind Uplift Classification	10/15/97
Factory Mutual Research Corp.	Approval Guide Excerpt	Wind Uplift Classification Listings	5/00
Factory Mutual Research Corp.	3013584	Class 4470	06/27/03
Factory Mutual Research Corp.	3011220	Class 4470	08/16/01
Factory Mutual Research Corp.	3006110	Class 4470	06/13/01
Factory Mutual Research Corp.	3012879	Class 4470	04/04/03
Factory Mutual Research Corp.	3017662	Class 4470	06/07/05
Factory Mutual Research Corp.	3013584	Class 4470	06/27/03
Factory Mutual Research Corp.	3020845	Class 4470	01/25/06
Factory Mutual Research Corp.	3019897	Class 4470	10/07/05
Factory Mutual Research Corp.	3022187	Class 4470	09/15/05
Factory Mutual Research Corp.	3022181	Class 4470	09/01/05
Factory Mutual Research Corp.	3023032	Class 4470	07/20/05
Celotex Corporation Testing Services	520257	Membrane Physical Property Testing	4/19/00
SGS U.S Testing Company Incorporated	131248-R2	Ozone Resistance	1/6/00

APPROVED ASSEMBLIES

Membrane Type: Single Ply, Thermoplastic, TPO, Reinforced, Fleecebacked

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type A(1): All layers of insulation adhered to deck, membrane fully adhered.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Extruded or Expanded Polystyrene, Energy-Lok, ACFoam-II, ACFoam-III, Multi-Max FA, Hytherm AP, H-Shield, Ultra/M-II Iso/glas, ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, HP-W, HP-H, HP-N, ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1" thick	**N/A**	**N/A**
ACFoam Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**N/A**	**N/A**
Dens Deck, Dens Deck Prime Strataguard		
Minimum ¼" thick	**N/A**	**N/A**
Structodeck, Fiber Base. High Density Fiberboard, Perlite, HP Recovery Board, Wood Fiber		
Minimum ½" thick	**N/A**	**N/A**

Note: All insulation shall be fully adhered to the deck with FAST Adhesive at a rate of 1 gal./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Vapor Retarder: None.

Barrier: None.

Membrane #1: Sure-Weld, Sure-Weld HS or Sure-Weld GSD, Reinforced, 45 or 60 mil membrane or Sure-Weld EXTRA, 72 or 80 mil membrane fully adhered to the insulation using Sure-Weld Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.^{2} or Aqua Base 120 Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.^{2}

Membrane #2: Sure-Weld FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST Adhesive applied to the substrate at a rate of 1 gal/sq or Aqua Base 120 Bonding Adhesive applied to the substrate at a rate of 1 gal/120 ft.^{2}

Membrane #3: Sure-Weld FleeceBACK AFX or Sure-Weld FleeceBACK AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. or Cold Applied Adhesive applied to the substrate at a rate of 1 gal/67 ft.^{2}

Maximum Design Pressure: –90 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, TPO, Reinforced, Fleecebacked

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or expanded Polystyrene, Energy-Lok, ACFoam-II, Insulfoam I and VIII		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. 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. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST Adhesive, Carlisle OlyBond 500BA, Carlisle Versigrip, or Carlisle One Step Adhesive.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 1.5" thick	**1, 2, 9, 10, 13 or 16**	**1:2 ft^2**
Minimum 2" thick	**1, 2, 15, 20, 21 or 24**	**1:4 ft^2**
HP Recovery		
Minimum 1" thick	**1, 2, 4, 6, 9, 10, 13, 17, 20 or 21**	**1:2 ft^2**
Multi-Max FA, WHITELINE, PYROX, AP, Ultra/M-II Iso/glas		
Minimum 1.2" thick	**1, 2, 4, 6, 15, 9, 10, 13, 20 or 21**	**1:2 ft^2**
ACFoam Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**1, 2, 4, 6, 15, 9, 10, 13, 20 or 21**	**1:3 ft^2**
High Density Fiberboard		
Minimum ¾" thick	**4, 6, 9, 10, 13, 20 or 21**	**1:2.67 ft^2**
ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1.2" thick	**4, 6 or 15**	**1:2 ft^2**
Minimum 1.4" thick	**6, 9, 10, 13, 16, 20 or 21**	**1:3 ft^2**
Structodeck		
Minimum ½" thick	**4, 9, 10 or 13**	**1:2 ft^2**

Wood Fiber **Minimum 1" thick**	**1, 4, 6, 9, 10, 13, 15, 20 or 21**	**1:2 ft²**
Oriented Strand Board **Minimum $^{7}/_{16}$" thick**	**1, 2, 4, 6, 9, 10, 13, 15, 20 or 21**	**1:2 ft²**
Fiber Base, Retro-Fit **Minimum ½" thick**	**1, 2**	**1:2 ft²**
Dens Deck, Dens Deck Prime or Strataguard **Minimum ¼" thick**	**1, 2, 4, 6, 9, 10, 13, 20 or 21**	**1:2 ft²**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**

Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:

HP Recovery (for use over all insulation. types) **Fiber Base** (for use over Polyisocyanurate, gypsum or perlite)

Minimum ½" thick	**1, 2**	**1:2 ft²**

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 Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane #1: Sure-Weld, Sure-Weld HS or Sure-Weld GSD, Reinforced, 45 or 60 mil membrane or Sure-Weld EXTRA, 72 or 80 mil membrane fully adhered to the insulation using Sure-Weld Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.² or Aqua Base 120 Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.²

Maximum Design Pressure –45 psf (See General Limitation #7)

Membrane #2: Sure-Weld FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using Aqua Base 120 Bonding Adhesive applied to the substrate at a rate of 1 gal/120 ft.²

Maximum Design Pressure –45 psf. (See General Limitation #9)

Sure-Weld FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST Adhesive applied to the substrate at a rate of 1 gal/sq.

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

Membrane #3: Sure-Weld FleeceBACK AFX or Sure-Weld FleeceBACK AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. or Cold Applied Adhesive applied to the substrate at a rate of 1 gal/67 ft.²

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

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, TPO, Reinforced, Fleecebacked

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(2): All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or expanded Polystyrene, Energy-Lok, ACFoam-II, Insulfoam I and VIII		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. 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. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST Adhesive, Carlisle OlyBond 500BA, Carlisle Versigrip, or Carlisle One Step Adhesive.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 1.5" thick	**1, 2, 9, 10, 13 or 16**	**1:2 ft^2**
Minimum 2" thick	**1, 2, 15, 20, 21 or 24**	**1:4 ft^2**
HP Recovery		
Minimum 1" thick	**1, 2, 4, 6, 9, 10, 13, 17, 20 or 21**	**1:2 ft^2**
Multi-Max FA, WHITELINE, PYROX, AP, Ultra/M-II Iso/glas		
Minimum 1.2" thick	**1, 2, 4, 6, 15, 9, 10, 13, 20 or 21**	**1:2 ft^2**
ACFoam Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**1, 2, 4, 6, 15, 9, 10, 13, 20 or 21**	**1:3 ft^2**
High Density Fiberboard		
Minimum ¾" thick	**4, 6, 9, 10, 13, 20 or 21**	**1:2.67 ft^2**
ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1.2" thick	**4, 6 or 15**	**1:2 ft^2**
Minimum 1.4" thick	**6, 9, 10, 13, 16, 20 or 21**	**1:3 ft^2**
Structodeck		
Minimum ½" thick	**4, 9, 10 or 13**	**1:2 ft^2**

Wood Fiber **Minimum 1" thick**	**1, 4, 6, 9, 10, 13, 15, 20 or 21**	**1:2 ft²**
Oriented Strand Board **Minimum $^{7}/_{16}$" thick**	**1, 2, 4, 6, 9, 10, 13, 15, 20 or 21**	**1:2 ft²**
Fiber Base, Retro-Fit **Minimum ½" thick**	**1, 2**	**1:2 ft²**
Dens Deck, Dens Deck Prime or Strataguard **Minimum ¼" thick**	**1, 2, 4, 6, 9, 10, 13, 20 or 21**	**1:2 ft²**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft²**
Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:		
Oriented Strand Board **Minimum $^{7}/_{16}$" thick**	**1, 2**	**1:1.88 ft²**

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 Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane #1: Sure-Weld, Sure-Weld HS or Sure-Weld GSD, Reinforced, 45 or 60 mil membrane or Sure-Weld EXTRA, 72 or 80 mil membrane fully adhered to the insulation using Sure-Weld Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.²
Maximum Design Pressure –75 psf (See General Limitation #7)

Membrane #2: Sure-Weld FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using Aqua Base 120 Bonding Adhesive applied to the substrate at a rate of 1 gal/120 ft.²
Maximum Design Pressure –75 psf. (See General Limitation #7)

Membrane #3: Sure-Weld FleeceBACK AFX or Sure-Weld FleeceBACK AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. or Cold Applied Adhesive applied to the substrate at a rate of 1 gal/67 ft.²
Maximum Design Pressure –75 psf. (See General Limitation #7)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, TPO, Reinforced, Fleecebacked

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(3): All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 2" thick	**1, 2, 15, 20, 21 or 24**	**1:1.6 ft^2**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. 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. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST Adhesive.

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 Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane #1: Sure-Weld, Sure-Weld HS or Sure-Weld GSD, Reinforced, 45 or 60 mil membrane or Sure-Weld EXTRA, 72 or 80 mil membrane fully adhered to the insulation using Sure-Weld Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.^{2}
Maximum Design Pressure –75 psf (See General Limitation #7)

Membrane #2: Sure-Weld FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST Adhesive applied to the substrate at a rate of 1 gal/sq.
Maximum Design Pressure –75 psf. (See General Limitation #7)

Membrane #3: Sure-Weld FleeceBACK AFX or Sure-Weld FleeceBACK AFX Plus membrane adhered to the insulation using Cold Applied Adhesive applied to the substrate at a rate of 1 gal/67 ft.^{2}
Maximum Design Pressure –60 psf. (See General Limitation #7)

Maximum Design Pressure: See Membrane Options Above

Membrane Type: Single Ply, Thermoplastic, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 gage ASTM A 446 Grade E Steel deck fastened to steel support at a maximum span of 6 feet o.c. Steel deck shall be fastened with minimum ITW Buildex Traxx/4 at a maximum spacing of 6 inches o.c. Side laps shall be fastened with ITW Buildex Traxx/1 at a maximum spacing of 30 inches o.c.

System Type C(4): All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
One of the following covered with the boards listed in Top Layer.		
Extruded or expanded Polystyrene, Energy-Lok, ACFoam-II, Insulfoam I and VIII		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 1.5" thick	**N/A**	**N/A**
Minimum 2" thick	**N/A**	**N/A**
HP Recovery		
Minimum 1" thick	**N/A**	**N/A**
Multi-Max FA, WHITELINE, PYROX, AP, Ultra/M-II Iso/glas		
Minimum 1.2" thick	**N/A**	**N/A**
ACFoam Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**N/A**	**N/A**
High Density Fiberboard		
Minimum ¾" thick	**N/A**	**N/A**
ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1.2" thick	**N/A**	**N/A**
Minimum 1.4" thick	**N/A**	**N/A**
Structodeck		
Minimum ½" thick	**N/A**	**N/A**
Wood Fiber		
Minimum 1" thick	**N/A**	**N/A**
Fiber Base, Retro-Fit		
Minimum ½" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. 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. Single and multiple layers of insulation can be attached to base layer with Carlisle Syntec FAST Adhesive.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Required over the insulations listed in Base Layer.		
Dens Deck Prime (For use over all insulation types.) Minimum ⅝" thick	**1, 10, 11 or 12**	**1:1.33 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 Retarder:	(Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.
Barrier:	None.
Membrane:	Sure-Weld or Sure-Weld HS Reinforced, 45 or 60 mil membrane or Sure-Weld EXTRA, 72 or 80 mil membrane fully adhered to the insulation using Sure-Weld Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.^{2}.
Maximum Design Pressure:	–90 psf (See General Limitation #7)

Membrane Type:	Single Ply, Thermoplastic, TPO, Reinforced
Deck Type 2I:	Steel, Insulated
Deck Description:	Minimum 22 gage ASTM A 446 Grade E Steel deck fastened to steel support at a maximum span of 6 feet o.c. Steel deck shall be fastened with minimum ITW Buildex Traxx/4 at a maximum spacing of 6 inches o.c. Side laps shall be fastened with ITW Buildex Traxx/1 at a maximum spacing of 30 inches o.c.
System Type D(1):	Membrane mechanically attached over preliminarily fastened insulation.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or expanded Polystyrene, Energy-Lok, ACFoam-II, Insulfoam I and VIII		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 1.2" thick	**N/A**	**N/A**
HP Recovery		
Minimum ½" thick	**N/A**	**N/A**
Multi-Max FA, WHITELINE, PYROX, AP, Ultra/M-II Iso/glas, ISO 95+ HF, Rhoflex HF		
Minimum 1.2" thick	**N/A**	**N/A**
ACFoam Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**N/A**	**N/A**
UltraGard Gold, Isolite E		
Minimum 1.3" thick	**N/A**	**N/A**
ISO 95+GL, GW, Rhoflex GL, GW		
Minimum 1.4" thick	**N/A**	**N/A**
Structodeck		
Minimum ½" thick	**N/A**	**N/A**
Wood Fiber, Fiber Base,		
Minimum ½" thick	**N/A**	**N/A**
High Density Fiberboard		
Minimum ¾" thick	**N/A**	**N/A**
Dens Deck, Dens Deck Prime or Strataguard		
Minimum ¼" thick	**N/A**	**N/A**

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:		
HP Recovery (for use over all insulation. types) **Fiber Base** (for use over Polyisocyanurate, gypsum or perlite)		
Minimum ½" thick	**N/A**	**N/A**

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. Single and multiple layers of insulation can be attached to the deck with FAST Adhesive, Carlisle Olybond 500BA, Carlisle Versigrip, Carlisle One Step Bonding Adhesive.

Vapor Retarder: (Optional) Any UL or FMRC approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane: Sure-Weld, Sure-Weld HS, Sure-Weld EXTRA or Sure-Weld GSD, Reinforced, secured through the preliminarily attached insulation as specified below.

Fastening #1: HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap in rows spaced 7'-7" o.c.
Maximum Design Pressure -68 psf. (See General Limitation #7)

Fastening #2: HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 9'-7" o.c.
Maximum Design Pressure -60 psf. (See General Limitation #7)

Fastening #3: HP-X Fasteners with Piranha Plates 9" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 9'-6" o.c.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #4: HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld GSD or HS Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 9'-7" o.c.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #5: HP-X Fasteners with Piranha Plates 9" o.c. through the Sure-Weld GSD or HS Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 9'-7" o.c.
Maximum Design Pressure -45 psf. (See General Limitation #7)

Fastening #6:	HP-X Fasteners with Piranha Plates 12" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 9'-7" o.c. ***Maximum Design Pressure -45 psf. (See General Limitation #7)***
Fastening #7:	HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld HS Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 7'-7" o.c. ***Maximum Design Pressure -60 psf. (See General Limitation #7)***
Fastening #8:	**Minimum Grade C steel deck:** HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 11'-7" o.c. ***Maximum Design Pressure –52.5 psf. (See General Limitation #7)***
Fastening #9:	**Minimum Grade C steel deck:** HP-Xtra Fasteners with Piranha Xtra Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 11'-7" o.c. ***Maximum Design Pressure –60 psf. (See General Limitation #7)***
Fastening #10:	HP-X Fasteners with Piranha Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 11'-7" o.c. ***Maximum Design Pressure -60 psf. (See General Limitation #7)***
Fastening #11:	**Minimum Grade C steel deck:** HP-Xtra Fasteners with Piranha Xtra Plates 6" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap in rows spaced 3'-6" o.c. ***Maximum Design Pressure –82.5 psf. (See General Limitation #7)***
Fastening #12:	**Minimum Grade C steel deck:** HP-Xtra Fasteners with Piranha Xtra Plates 12" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 3'-6" o.c. ***Maximum Design Pressure –52.5 psf. (See General Limitation #7)***
Fastening #13:	**Minimum Grade C steel deck:** HP-Xtra Fasteners with Piranha Xtra Plates 12" o.c. through the Sure-Weld or Sure-Weld EXTRA Membrane in the lap or through a Sure-Weld Pressure-Sensitive RUSS Strip in rows spaced 7'-7" o.c. ***Maximum Design Pressure –45 psf. (See General Limitation #7)***
Maximum Design Pressure:	–See Fastening Options Above

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 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, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered 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.

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. **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE