



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION

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Miami, Florida 33175-2474
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www.miamidade.gov/economy

Holcim Solutions and Products US, LLC
26 Century Boulevard, Suite 205
Nashville, TN 37214

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: Firestone TPO Single Ply Roof Systems over Steel Decks.

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

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

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

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

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

This NOA revises NOA No. 22-0920.04 and consists of pages 1 through 103.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA-No.: 23-0613.41
Expiration Date: 11/27/27
Approval Date: 09/07/23
Page 1 of 103

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply Roofing
Material:	TPO
Deck Type:	Steel
Maximum Design Pressure:	-150 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specifications	Product Description
UltraPly TPO	Various	TAS 131-95	Reinforced TPO .045" to .080" thick membrane.
UltraPly TPO XR 100	Various	TAS 131-95	Reinforced TPO 0.045" membrane with 8 oz. fleece backing)
UltraPly TPO XR 115	Various	TAS 131-95	Reinforced TPO 0.060" membrane with 8 oz. fleece backing
UltraPly TPO XR 135	Various	TAS 131-95	Reinforced TPO .080" membrane with 8 oz. fleece backing.
UltraPly TPO Reinforced Curb Corner	Various	TAS 131-95	TPO curb flashing.
UltraPly 18" Curb Flashing	Various	TAS 131-95	TPO curb flashing.
UltraPly TPO Inside/Outside Corner	Various	TAS 131-95	Molded TPO for corner flashing.
UltraPly TPO Large Pipe Flashing	Various	TAS 131-95	TPO flashing for large round penetrations.
UltraPly TPO T-Joint Cover	Various	TAS 131-95	TPO flashing for T-joints.
UltraPly TPO Walkway Pad	Various	TAS 131-95	TPO walkway pad.
UltraPly TPO Coated Metal	Various	TAS 131-95	TPO laminated to hot-dipped galvanized steel for flashing.
UltraPly TPO Reinforced Split Pipe Boot	Various	TAS 131-95	TPO flashing for round penetrations 1" to 9" in diameter.
UltraPly TPO 8" Reinforced Cover Strip	Various	TAS 131-95	8" wide 60 mil TPO cover strip.
UltraPly TPO Universal Pipe Boot	Various	TAS 131-95	TPO flashing for round penetrations 1" to 6" in diameter.
UltraPly TPO Unsupported Flashing	Various	TAS 131-95	Unreinforced TPO used for flashing.
UltraPly QuickSeam R.M.A. Strip	10" x 100'	TAS 131-95	Strip of UltraPly TPO with QuickSeam Tape for anchoring membrane to substrate.
V-Force	45" x 134'	Proprietary	A vapor retarder made of SBS modified bitumen adhesive laminated to a woven high density polyethylene top surface
Single-Ply QuickPrime Primer	1 gallon & 3 gallons	Proprietary	Primer for TPO Flashing.

Product	Dimensions	Test Specifications	Product Description
XR Stick Membrane Adhesive	5 gal. & 1500 ml	Proprietary	A low-rise polyurethane, low VOC, membrane adhesive.
UltraPly Bonding Adhesive	5 gal. pail	Proprietary	Solvent based adhesive.
I.S.O. Stick	Bag-in-Box: 5 gal Drum: 15 gal & 55 gal	Proprietary	A two-part polyurethane adhesive.
I.S.O. Twin Pack Insulation Adhesive	SpotShot Cartridge: 1500 ml	Proprietary	A two-part polyurethane adhesive.
I.S.O. Spray R	15gal pail & 55gal drum	Proprietary	A two-part polyurethane adhesive
Single-Ply LVOC Bonding Adhesive	5 gal. pail	Proprietary	Solvent based bonding adhesive.
Single-Ply LVOC Bonding Adhesive 1168	5 gal. pail	Proprietary	Solvent based bonding adhesive.
Water Based Bonding Adhesive P	5 gal. pail	Proprietary	Water based bonding adhesive.
XR Bonding Adhesive	5 gal. pail	Proprietary	Solvent based adhesive.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ISO 95+ GL, ISO 95+ GL Tapered	Polyisocyanurate foam insulation	Holcim Solutions and Products US, LLC
ISOGARD HD	Polyisocyanurate with a coated fiberglass facer	Holcim Solutions and Products US, LLC
ISOGARD HD Composite	Polyisocyanurate with a coated fiberglass facer composite insulation.	Holcim Solutions and Products US, LLC
DensDeck, DensDeck Prime	Silicon treated gypsum	Georgia Pacific Gypsum LLC
RESISTA and tapered	Polyisocyanurate foam core laminated to a coated fiberglass facer	Holcim Solutions and Products US, LLC
SECUROCK Ultralight Glass-Mat Roof Board	Gypsum fiber roof board with fiberglass facer	USG Corporation
SECUROCK Gypsum-Fiber Roof Board	Gypsum fiber roof board	USG Corporation



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Firestone Heavy-Duty	#15 Fastener for steel, Wood, concrete decks	N/A	Holcim Solutions and Products US, LLC
2.	Firestone All-Purpose	#14 Fastener for steel and Wood decks	N/A	Holcim Solutions and Products US, LLC
3.	Firestone Pre-Assembled Fastener & Plate	#12 w/insulation plate for steel and wood decks	N/A	Holcim Solutions and Products US, LLC
4.	Firestone Heavy Duty Plus	Insulation and membrane fastener	Various	Holcim Solutions and Products US, LLC
5.	Insulation Fastening Plate	Galvalume insulation plate	3" diameter	Holcim Solutions and Products US, LLC
6.	Firestone HD Seam Plates	AZ55 or AZ50 galvalume insulation plate.	2-3/8" diameter	Holcim Solutions and Products US, LLC
7.	Firestone HD Plus Seam Plate	Galvalume insulation plate	2 3/4" diameter	Holcim Solutions and Products US, LLC
8.	Metal Batten Bar	Galvalume AZ55 batten strip	10' long, 1" wide	Holcim Solutions and Products US, LLC
9.	Coiled Metal Batten Bar	Galvalume AZ55 batten strip	220' long, 1" wide	Holcim Solutions and Products US, LLC
10.	Firestone Polymer Batten Strip	Polymer, corrosion –free, batten strip.	250' long, 3/4" or 1" wide	Holcim Solutions and Products US, LLC
11.	UltraPly TPO InvisiWeld Plate	Induction welding plate	3" diameter	Holcim Solutions and Products US, LLC
12.	InvisiWeld-S	Induction welding plate	3" diameter	Holcim Solutions and Products US, LLC
13.	PermaMop	ASTM D 312 Type IV Asphalt	Various	Owens Corning Roofing and Asphalt LLC

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
UL LLC FM Approvals	R9516	UL 790	05/13/22
	3006983	4470	02/08/00
	3004249	4470	11/03/99
	3003830	4470	05/26/99
	3001925	4470	05/24/99
	3014031	4470	07/22/02
	3014918	4470	12/17/03
	3012931	4470	04/04/04
	3016670	4470	04/29/04
	3017120	4470	04/30/04
	3020394	4470	09/03/04
	3022988	4470	01/28/05
	3029384	4470	06/07/10
	3027508	4470	02/07/07
	3026519	4470	12/14/06
	3026520	4470	12/14/06
	3030650	4470	08/30/10
	3019991	4470	09/20/05
	3033218	4470	08/12/08
	3030227	4470	09/30/10
	3033921	4470	01/12/09
	3035560	4470	01/11/10
	3039133	4470	04/07/11
	3035017	4470	04/15/09
	3036747	4470	02/12/10
	3040535	4470	10/05/10
	3038546	4470	12/17/10
	3038191	4470	08/04/11
	3036256	4470	04/27/09
	3038770	4470	08/04/11
	3047398	4470	01/09/15
	3041939	4470	08/14/12
	3042666	4470	08/14/12
	3047700	4470	08/16/13
	3043824	4470	01/09/15
	3040205	4470	06/08/10
	3051348	4470	01/13/14
	3054114	4470	4/15/15
	3060274	4470	12/29/16
Trinity ERD	F8960.04.08-R1	TAS 114-F	06/23/08
	F8300.11.08-R3	TAS 131/ASTM D6878	02/25/11
	F45600.09.13-R1	TAS 131/ASTM D6878	12/30/13
PRI Construction Materials Technologies, LLC	FBP-085-02-01, R1	TAS 114-J	10/04/12
	FBP-086-02-01	TAS 114-J	10/04/12
	FBP-044-02-01.9	TAS 114-D, H, J/TAS 117-B	06/01/17
	FBP-120-02-01.1	TAS 114-J	02/04/14
	FBP-145-02-01	ASTM D6878	06/26/14
	FBP-148-02-01	TAS 114-J	12/18/13

EVIDENCE SUBMITTED: (CONTINUED)

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
PRI Construction Materials Technologies, LLC	FBP-149-02-01	TAS 114-J	12/18/13
	FBP-153-02-01	TAS 114-J	12/18/13
	FBP-154-02-02	TAS 114-J	12/18/13
	FBP-158-02-01	TAS 114-J	04/28/14
	FBP-162-02-01.1	Physical Properties	05/15/14
	FBP-175-02-01	TAS 114-J	04/28/14
	FBP-178-02-01	TAS 114-J	04/28/14
	FBP-165-02-01	TAS 114-J	07/27/14
	FBP-184-02-01	TAS 114-J	07/27/14
	FBP-206-02-01	TAS 114-J	10/16/14
	FBP-222-02-03	TAS 114-C	04/01/15
	FBP-225-02-01	TAS 114-J	03/19/15
	FBP-230-02-01	TAS 114-J	04/02/15
	FBP-233-02-03	TAS 114-D	06/01/15
	FBP-038-02-02	ASTM D6164	12/28/10
	FBP-053-02-01 Rev 1	ASTM D6163	10/08/12
	FBP-063-02-01	TAS 114-E	07/10/12
	FBP-094-02-01	ASTM D6878	11/20/13
	FBP-166-02-01	ASTM D6163	05/15/14
	FBP-324-02-01	TAS 117-B	03/21/17
	FBP-324-02-02	TAS 114-J	10/13/16
	FBP-331-02-01	TAS 114-J	12/15/16
	FBP-338-02-01	TAS 114-J	02/03/17
	FPB-355-02-01	TAS 114-J	04/19/17
	FBP-363-02-01	TAS 114-J	08/17/17
	FBP-367-02-01	TAS 114-J	09/22/17

DECK STRESS ANALYSIS CALCULATIONS/REPORTS

<u>Engineer/Agency</u>	<u>Identifier</u>	<u>Assemblies</u>	<u>Date</u>
FM Approval Deck Limitations	N/A	B(2), B(3), B(4), B(7), B(10), C(2), C(4), C(5), C(6), C(7), C(8), C(9), C(10), C(11), C(12), C(13), C(14), C(15), C(16), C(17), C(18), C(25), D(1), D(2), D(3), D(4), D(5), D(6), D(7), D(8), D(9), D(27), D(28)	01/01/13
Zachary R. Priest, P.E.	Signed/Sealed Calculations	B(11) C(28)	06/01/15 07/02/15
Zachary R. Priest, P.E.	Signed/Sealed Calculations	C(31) C(32), C(33)	03/19/15 12/09/16
Zachary R. Priest, P.E.	Signed/Sealed Calculations	B(8), B(9), C(19), C(21), C(22), C(23), C(24),	10/03/16
Zachary R. Priest, P.E.	Signed/Sealed Calculations	C(20), C(26), C(27), C(30), D(10), D(11), D(12), D(13), D(14), D(15), D(16), D(18)	09/20/17 09/20/17
Zachary R. Priest, P.E.	Signed/Sealed Calculations	C(34), D(19), D(20) C(37)	02/16/17 09/07/17
Zachary R. Priest, P.E.	Signed/Sealed Calculations	C(35), C(36), D(21) D(22), D(23), D(24)	04/06/17 09/13/17
Zachary R. Priest, P.E.	Signed/Sealed Calculations	D(17) D(29), D(30), D(31), D(32), D(33)	04/02/15 09/26/17

APPROVED ASSEMBLIES:

Membrane Type:	Single Ply, TPO, Reinforced
Deck Type 2I:	Steel, Insulated
Deck Description:	Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type B(1):	Membrane adhered over mechanically fastened insulation. Side laps are sealed with a min 1.5" heat weld.

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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	1 or 2 with 5	1:2 ft ²
DensDeck Prime Minimum ½" thick	1 or 2 with 5	1:2 ft ²
<u>Middle Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A
<u>Additional Middle Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A
Tapered ISO 95+ GL Minimum ½" thick with a ¼" per ft. taper	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime, SECUROCK Gypsum Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. All other layers of insulation shall be adhered to base insulations with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide beads spaced 12" o.c. or I.S.O. Spray R, or I.S.O. Stick applied in continuous ¾" to 1" wide ribbons spaced 12" o.c. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered to the top insulation layer with XR Stick Membrane Adhesive, or I.S.O. Spray R applied in continuous $\frac{3}{4}$ " to 1" wide ribbons spaced a maximum 12" o.c. or TPO XR is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

**Maximum Design
Pressure:**

-45 psf. (See General Limitation #9)



Membrane Type:	Single Ply, TPO, Reinforced
Deck Type 2I:	Steel, Insulated
Deck Description:	Minimum 22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. (one fastener installed at each bearing attachment point) and Traxx 1 fasteners 24" o.c. at the side laps. This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.
System Type B(2):	Membrane adhered over mechanically fastened insulation. Side laps are sealed with a min 1.5" heat weld.

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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	1 or 2 with 5	1:1.6 ft ²
DensDeck Prime Minimum ½" thick	1 or 2 with 5	1:1.6 ft ²
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A
DensDeck Prime Minimum ½" thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. Top layer of insulation shall be adhered to base insulations with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide beads spaced 6" o.c., I.S.O. Spray R or I.S.O. Stick applied in continuous ¾" to 1" wide ribbons spaced 6" o.c. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered to the top insulation layer with XR Stick Membrane Adhesive or I.S.O. Spray R applied in continuous $\frac{3}{4}$ " to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

**Maximum Design
Pressure:**

-75 psf. (See General Limitation #7)

- Membrane Type:** Single Ply, TPO, Reinforced
- Deck Type 2I:** Steel, Insulated
- Deck Description:**
1. Minimum 18 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c.
 2. Minimum 18 to 22 ga. Grade 80 steel deck is secured to supports spaced 6 ft. o.c.
- Deck secured with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
- This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.**
- System Type B(3):** Membrane adhered over mechanically fastened insulation. Side laps are sealed with a min 1.5" heat weld.

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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	1 or 2 with 5	1:1 ft²
DensDeck Prime Minimum ½" thick	1 or 2 with 5	1:1 ft²
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime, SECUROCK Gypsum Fiber Roof Board, ISOGARD HD Minimum ½" thick	N/A	N/A
ISO 95+ GL Minimum 1" thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. Top layer of insulation shall be adhered to base insulations with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide beads spaced 4" o.c., I.S.O. Spray R, or I.S.O. Stick applied in continuous ¾" to 1" wide ribbons spaced 4" o.c. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR roof cover membrane adhered to the top insulation layer with I.S.O. Spray R applied in continuous ¾" to 1" wide ribbons spaced a maximum 12" o.c. or TPO XR is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

**Maximum Design
Pressure:**

-127.5 psf. (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 80, Type B steel deck is secured to supports spaced max. 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. (two fasteners installed at each bearing attachment point) and Traxx 1 fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type B(4): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
RESISTA Minimum 1.5" thick	1 or 2 with 5	1:1 ft ²
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
RESISTA Minimum 1.5" thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. Top layer of insulation shall be adhered to base insulations with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide beads spaced 12" o.c. or I.S.O. Stick or I.S.O. Spray R applied in continuous ¾" to 1" wide ribbons spaced 12" o.c. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure: -120 psf. (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type B(5): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A
Tapered ISO 95+ GL Minimum ½" thick with a ¼" per ft. taper	N/A	N/A
<u>Middle Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2¼" thick	1 or 2 with 5	1:4 ft ²

Note: Optional Base layer shall be loose laid. Middle layer shall be simultaneously fastened with fasteners and density described. 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.

<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
DensDeck Prime, ISOGARD HD Minimum ½" thick	N/A	N/A

Note: Optional top layer shall be adhered to top insulation with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide beads spaced 12" o.c. I.S.O. Spray R or I.S.O. Stick applied in continuous ¾" to 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.



Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate), Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure:

-45 psf. (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type B(6): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum ½” thick	N/A	N/A
<u>Middle Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5” thick	1 or 2 with 5	1:2 ft ²
DensDeck Prime Minimum ½” thick	1 or 2 with 5	1:2 ft ²

Note: Optional Base layer shall be loose laid. Middle layer shall be simultaneously fastened with fasteners and density described. 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.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum ½” thick	N/A	N/A
Tapered ISO 95+ GL Minimum ½” thick with a ¼” per ft. taper	N/A	N/A

Note: Top layer shall be adhered to top insulation with I.S.O. Twin Pack Insulation Adhesive in continuous ½” to ¾” wide beads spaced 12” o.c. or I.S.O. Spray R, or I.S.O. Stick (ISOGARD HD only) applied in continuous ¾” to 1” wide ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate), Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.
Or
UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾” to 1” wide ribbons spaced a maximum 12” o.c. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Min. 18 to 22 ga., Type B, Grade 80 steel deck is secured to supports spaced 6 ft. o.c. with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type B(7): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A

<u>Middle Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	1 or 2 with 5	1:1 ft ²
DensDeck Prime Minimum ½" thick	1 or 2 with 5	1:1 ft ²

Note: Base layer shall be loose laid. Middle layer shall be simultaneously fastened with fasteners and density described. 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.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum ½" thick	N/A	N/A

Note: Top layer shall be adhered to top insulation with I.S.O. Twin Pack Insulation Adhesive in continuous ½" to ¾" wide ribbons spaced 4" o.c. or I.S.O. Spray R, or I.S.O. Stick applied in continuous ¾" to 1" wide ribbons spaced 4" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure: -135 psf. (See General Limitation #7)



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type B(8): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	1 or 2 with 5	1:1.78 ft ²

Note: Base layer shall be fastened with fasteners and density described. 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.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	N/A	N/A

Note: Top layer shall be adhered to top insulation with I.S.O. Stick or I.S.O. Spray R applied in continuous 3/4" to 1" wide ribbons spaced 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered to the top insulation layer with I.S.O. Spray R applied in continuous 3/4" to 1" wide ribbons spaced a maximum 12" o.c. or fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with #12-24 x 1¼" HWH SD Screws spaced 6" o.c. (at the bottom flute), and with side laps attached using ¼" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type B(9): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	1 or 2 with 5	1:1.78 ft ²

Note: Base layer shall be fastened with fasteners and density described. 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.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Composite Minimum 1.5" thick	N/A	N/A

Note: Top layer shall be adhered to top insulation with I.S.O. Stick or I.S.O. Spray R applied in continuous ¾" to 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18 to 22 ga., Grade 33, steel deck is secured to supports spaced 6 ft. o.c. with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type B(10): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	1 or 2 with 5	1:1.6 ft²

Note: Base layer shall be fastened with fasteners and density described. 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.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
DensDeck Prime Minimum 1/4" thick	N/A	N/A

Note: Top layer shall be adhered to top insulation with I.S.O. Twin Pack Insulation Adhesive applied in continuous 1/2" to 3/4" wide ribbons spaced 12" o.c. or I.S.O. Stick (DensDeck Prime ONLY) or I.S.O. Spray R applied in continuous 3/4" to 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.



Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure:

-75 psf. with I.S.O. Twin Pack Insulation Adhesive or I.S.O. Spray R
(See General Limitation #7)

-60 psf. with I.S.O. Stick (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds at each flute and side laps stitched 24" o.c. with 1/4" – 14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type B(11): Membrane adhered over mechanically fastened insulation. Side laps are sealed with a min 1.5" heat weld.

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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	2 with 5	1:78 ft ²
<u>Middle Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, DensDeck Prime Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Composite Minimum 1/2" thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. All other layers of insulation shall be adhered to base insulations with I.S.O. Twin Pack Insulation Adhesive in continuous 1/2" to 3/4" wide beads spaced 6" o.c. or I.S.O. Spray R, or I.S.O. Stick applied in continuous 3/4" to 1" wide ribbons spaced 6" o.c. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered to the top insulation layer with XR Stick Membrane Adhesive Membrane Adhesive or I.S.O. Spray R applied in continuous 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.

System Type C(1): Membrane bonded over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	1 with 11 or 12	1:5.3 ft ²
ISOGARD HD Minimum ½" thick	1 with 11 or 12	1:5.3 ft ²
DensDeck, DensDeck Prime Minimum ¼" thick	1 with 11 or 12	1:5.3 ft ²
SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 with 11 or 12	1:5.3 ft ²
Plywood Minimum 19/32" thick	1 with 11 or 12	1:5.3 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 16-22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with (one fastener installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(2): Membrane bonded over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	See Design Pressure
ISOGARD HD Minimum ½" thick	1 with 11 or 12	See Design Pressure
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	See Design Pressure
Plywood Minimum 19/32" thick	1 with 11 or 12	See Design Pressure
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	See Design Pressure

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure:	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
	-45 psf. (See General Limitation #7)	12 in.	5 ft.
	-82.5 psf. (See General Limitation #7)	6 in.	5 ft.

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.

System Type C(3): Membrane fully adhered over mechanically fastened insulation.

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

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum ½" thick	1 or 2 with 5	1:2.7ft ²
ISO 95+ GL, RESISTA Minimum 1" thick	1 or 2 with 5	1:2.7 ft ²
DensDeck Prime, SECUROCK Gypsum Fiber Roof Board Minimum ¼" thick	1 or 2 with 5	1:2.7 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:2.7 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK and DensDeck only) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with (one fastener installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(4): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum ½" thick	1 or 2 with 5	1:1.33 ft ²
ISO 95 + GL, RESISTA Minimum 1" thick	1 or 2 with 5	1:1.33 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Boards Minimum ¼" thick	1 or 2 with 5	1:1.33 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.33 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK and DensDeck only) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

**Maximum Design
Pressure:**

-60 psf. (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with (one fastener installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(5): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1: 1.33 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga. Grade 33 steel deck secured to supports space a maximum 6' o.c. with ITW Buildex Traxx 5 fasteners spaced 6" o.c. Side laps fastened with ITW Buildex Traxx 1 fasteners spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(6): All layers of insulation simultaneously attached, membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA, ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1: 1.78 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Minimum ½" thick	1 or 2 with 5	1: 1.78 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR roof cover is adhered with XR Stick Membrane Adhesive, or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga. Grade 33 steel deck secured to supports space a maximum 6' o.c. with ITW Buildex Traxx/5 spaced 6" o.c. Side laps fastened with ITW Buildex Traxx/1 spaced max. 30" o.c. or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 30" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(7): All layers of insulation simultaneously attached, membrane fully adhered.

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

One or more layers of any of the following insulations.

Base Insulation Layer

ISO 95+ GL, RESISTA
Minimum 1.5" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

Top Insulation Layer

Plywood
Minimum 19/32" thick

Insulation Fasteners
(Table 3)

1 or 2 with 5

Fastener
Density/ft²

1:2 ft²

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO membrane fully adhered to the cover board with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 roller at a rate of 60 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design

Pressure: -75 psf. (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. (one fastener installed at each bearing attachment point) and Traxx 1 fasteners 30" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(8): Membrane bonded over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 with 11 or 12	See Below
DensDeck, DensDeck Prime Minimum ¼" thick	1 with 11 or 12	See Below
Plywood Minimum 19/32" thick	1 with 11 or 12	See Below

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -75 psf. For 1:2.7 ft² fastener density (See General Limitation #7)
-60 psf. For 1:4 ft² fastener density (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners and ¾" washers spaced 6" o.c and Traxx 1 fasteners 12" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 12" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(9): All layers of insulation simultaneously attached; membrane fully adhered.
All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 or 4 or 2 with 5	1:1.33 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 4 or 2 with 5	1:1.33 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga., Type B, Grade 33 steel deck attached to ¼” steel structural supports spaced a maximum 6 ft. o.c. secured with ITW Buildex Traxx 5 fasteners spaced maximum 6” o.c. at supports. Side laps, secured 24” o.c. with ITW Buildex TRAXX 1 fasteners or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6” o.c. and Hilti S-SLC 01 M HWH fasteners 24” o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(10): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum ½” thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 2” thick	1 or 2 with 5	1:1.6 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ½” thick	1 or 2 with 5	1:1.6 ft ²
ISOGARD HD Composite Minimum 1.5” thick	1 or 2 with 5	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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.
Or
UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.
Or
UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾” to 1” wide ribbons spaced a maximum 12” o.c. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.

Maximum Design Pressure: -82.5 psf. Insulation fasteners 1 or 2 with 6 (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18-22 ga., Type B, Grade 80 steel deck secured to supports spaced max 6 ft. o.c.
2. Minimum 18-20 ga. Grade 33 steel deck secured to ¼" steel structural supports spaced a maximum 6 ft. o.c.

Deck secured with ITW Buildex Traxx 5 fasteners spaced maximum 6" o.c. at supports. Side laps, secured 24" o.c. with ITW Buildex TRAXX 1 fasteners or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(11): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ISO 95+ GL, RESISTA

Minimum ½" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

Top Insulation Layer

ISO 95+ GL, RESISTA, ISOGARD HD Composite

Minimum 1.5" thick

Insulation Fasteners
(Table 3)

1 or 2 with 5

Fastener
Density/ft²

1:1.33 ft²

DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board

Minimum ½" thick

1 or 2 with 5

1:1.33 ft²

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design

Pressure: -90 psf. (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description:

1. Minimum 22 ga., Type B, Grade 33 steel deck is secured to supports spaced 64" o.c.
2. Minimum 18 to 20 ga. Grade 33, Type B, steel deck secured to supports spaced 6 ft. o.c.,
3. Minimum 18 to 22 ga. Grade 80, Type B steel deck secured to supports spaced 6 ft. o.c.

Deck attached with Traxx 5 fasteners spaced 6" o.c. (two fasteners installed at each bearing attachment point) and Traxx 1 fasteners 12" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(12): Membrane bonded over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	1:2 ft ²
ISOGARD HD Minimum ½" thick	1 with 11 or 12	1:2 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	1:2 ft ²
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	1:2 ft ²
Plywood Minimum 19/32" thick	1 with 11 or 12	1:2 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.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18-22 ga., Type B, Grade 80 steel deck is secured to supports spaced 6 ft. o.c.
2. Minimum 18 ga. Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c.
3. Minimum 20 ga. Type B, Grade 33 steel deck is secured to supports spaced 67" o.c.
4. Minimum 22 ga. Type B, Grade 33 steel deck is secured to supports spaced 5 ft. o.c.

Deck secured with Traxx 5 fasteners spaced 6" o.c. (one fastener installed at each bearing attachment point) and Traxx 1 fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(13): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ISO 95+ GL, RESISTA

Minimum ½" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

Top Insulation Layer

ISOGARD HD Composite

Minimum 2" thick

Insulation Fasteners
(Table 3)

1 or 2 with 5

Fastener
Density/ft²

1: 1.33 ft²

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

Minimum UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered with XR Stick Membrane Adhesive or ISO Spray R applied in ¾" to 1" wide ribbons spaced 12" o.c. The side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design

Pressure: -120 psf. (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18-22 ga., Type B, Grade 80 steel deck is secured to supports spaced 6 ft. o.c.
2. Minimum 18 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c.

Deck secured with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 12" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 12" o.c. at the side laps.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(14): Membrane adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ISO 95+ GL, RESISTA
Minimum ½" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

Top Insulation Layer

ISO 95+ GL, RESISTA
Minimum 2" thick

Insulation Fasteners
(Table 3)

1 or 2 with 5

Fastener
Density/ft²

1:1 ft²

DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board
Minimum ½" thick

1 or 2 with 5

1:1 ft²

ISOGARD HD Composite
Minimum 1.5" thick

1 or 2 with 5

1:1 ft²

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered to the top insulation layer with XR Stick Membrane Adhesive or I.S.O. Spray R applied in continuous ¾" to 1" wide ribbons spaced 4" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure: -142.5 psf. (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18-22 ga. Type B, Grade 80 steel deck is secured to supports spaced 6 ft. o.c. with (two fasteners installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 12" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 12" o.c. at the side laps.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(15): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Plywood Minimum 19/32" thick	1 or 4 with 5	1:1 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO membrane fully adhered to the cover board with UltraPly Bonding Adhesive, Water Based Bonding Adhesive P, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding LVOC Adhesive 1168 applied at a rate of 60 ft²/gal. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure:

- 135 psf. with Single-Ply LVOC Bonding Adhesive or Water Based Bonding Adhesive P (See General Limitation #7)
- 150 psf. with UltraPly Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168. (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22ga. Grade 33/80 (See MDP rating) Steel Deck secured to ¼” thick supports spaced maximum 6 ft. o.c. with (two fasteners at each bearing attachment point) Traxx/5 fasteners spaced 6” o.c. at supports and side laps secured with Traxx/1 fasteners at 24” o.c. or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6” o.c. and Hilti S-SLC 01 M HWH fasteners 24” o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(16): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum ½” thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 2” thick	1 or 2 with 5	1:1 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ½” thick	1 or 2 with 5	1:1 ft ²
ISOGARD HD Composite Minimum 1.5” thick	1 or 2 with 5	1:1 ft ²

Note: Insulation layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

Minimum UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered with XR Stick Membrane Adhesive or ISO Spray R applied in 3/4" to 1" wide ribbons spaced 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressures:

-112.5 psf. with Grade 33 steel deck (See General Limitation #7)

-150 psf. with Grade 80 steel deck (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18 to 22 ga. (0295") Grade 80 steel deck is secured to supports spaced 6 ft. o.c.
2. Minimum 18 to 20 ga. Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c.

Deck secured with (one fastener installed at each bearing attachment point) Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps or with Hilti X-ENP-19 L15 or Hilti X-HSN 24 fasteners spaced 6" o.c. and Hilti S-SLC 01 M HWH fasteners 24" o.c. at the side laps.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(17): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations:

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum ½" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
RESISTA Minimum 2" thick	1 or 2 with 5	1:1.33 ft ²
SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 or 2 with 5	1:1.33 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.33 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. (0295") Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. (one fastener installed at each bearing attachment point) and Traxx 1 fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(18): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations:

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum ½" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
RESISTA, ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.6 ft ²
ISO 95 + GL Minimum 2" thick	1 or 2 with 5	1:1.6 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 or 2 with 5	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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga., Type B, Grade 33 steel deck is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 12" o.c. with 1/4" – 14 x 7/8" HWH screws with 1/2" washer

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(19): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations:

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA, ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.78 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	1 or 2 with 5	1:1.78 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See evidence submitted table.

System Type C(20): Membrane bonded over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ISO 95+ GL, RESISTA

Minimum 1/2" thick

**Insulation Fasteners
(Table 3)**

N/A

**Fastener
Density/ft²**

N/A

Top Insulation Layer

ISO 95+ GL

Minimum 1/2 thick

**Insulation Fasteners
(Table 3)**

1 with 11 or 12

**Fastener
Density/ft²**

1:4 ft²

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.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The roof cover side laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 12" o.c. with ¼" – 14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(21): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 or 2 with 5	1:1.78 ft ²
RESISTA Minimum 1" thick	1 or 2 with 5	1:1.78 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga., Grade 33, Type B steel deck is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 12" o.c. with 1/4" – 14 x 7/8" HWH screws.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(22): All layers of insulation simultaneously attached; membrane fully adhered.
All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

One or more layers of any of the following insulations:

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 2" thick	1 or 2 with 5	1:2.67 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	1 or 2 with 5	1:2.67 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:2.67 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with #12-24 x 1-1/4" HWH SD Screws spaced 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(23): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	1 or 2 with 5	1:1.78 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.78 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with #12-24 x 1-1/4" HWH SD Screws spaced 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(24): All layers of insulation simultaneously attached; membrane fully adhered.
All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
RESISTA Minimum 1" thick	1 or 2 with 5	1:1.6 ft ²
ISO 95 + GL, ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:1.6 ft ²
SECUROCK Gypsum-Fiber Roof Board, DensDeck Prime Minimum 1/2" thick	1 or 2 with 5	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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
Or
UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18 to 22 ga. Grade 33 steel deck secured to supports space at maximum 6 ft. o.c. with ITW Buildex Traxx/5 spaced at 6" o.c. (one fastener installed at each bearing attachment point). Side lap fastened with ITW Buildex Traxx/1 spaced at 30" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(25): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	1 with 11 or 12	1:2 ft ²
ISO 95+ GL tapered Minimum ½" thick with minimum ¼" taper	1 with 11 or 12	1:2 ft ²
ISOGARD HD Minimum ½" thick	1 with 11 or 12	1:2 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	1:2 ft ²

Note: All insulation plates are secured to the deck with Insulation Fastener listed above (1). Insulation plates are placed in four rows. The first row of plates is placed 6" from the 8 ft. long edges of the board with subsequent rows of plates placed 12" o.c. The first plate of each row is placed 12in. from the 4 ft. long edges of the board with subsequent plates placed 24" o.c. The rows of plates securing the insulations boards shall consist of alternating rows of Insulation Plates listed above (6 and 12).

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Grade 33 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 x 1-1/4" HWH SD screws and with panel laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(26): All layers of insulation simultaneously attached; membrane bonded.

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

Fire Barrier (Optional) 1/4" minimum thick SECUROCK Gypsum-Fiber Roof Board loose laid

Vapor Barrier V-Force self-adhered to top of fire barrier with 3" wide side laps

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA, ISOGARD HD Composite Minimum 2.5" thick	1 with 11 or 12	1:4 ft ²

Note: Insulation boards installed with length perpendicular to deck ribs. Board ends offset 6" from preceding row. 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The roof cover side laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 33, Type B steel deck secured to supports space at maximum 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and panel laps stitched 24" o.c. with 1/4" – 14 x 7/8" HWH screws.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(27): All layers of insulation simultaneously attached; membrane bonded.

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.

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	1:2.67 ft ²
ISOGARD HD Minimum 1/2" thick	1 with 11 or 12	1:2.67 ft ²
DensDeck, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	1 with 11 or 12	1:2.67 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	1:2.67 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: UltraPly TPO is bonded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates using a Portable Bonding Tool and weighted Cooling Clamps. The side laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga., Grade 33, Type B steel is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 24" o.c. with 1/4" – 14 x 7/8" HWH screws.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type C(28): Membrane fully adhered over mechanically fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	1 or 2 with 5	See Below
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	See Below

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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane:

UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate), or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure:

–67.5 psf. for 1:1.6 ft² fastener density (See General Limitation #7)

–60 psf. for 1:2.13 ft² fastener density (See General Limitation #7)

–82.5 psf. for 1:1.78 ft² fastener density (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type C(29): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 or 2 with 5	1:2.7 ft ²
RESISTA Minimum 1" thick	1 or 2 with 5	1:2.7 ft ²
ISO 95+ GL, ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:2.7 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board and DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type C(30): All layers of insulation simultaneously attached; membrane fully adhered.

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

Vapor Retarder: Polyethylene Sheet 4-6 mil thick with Min. 2" wide laps sealed with duct tape.
(Optional)

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
ISO 95 + GL Tapered, RESISTA Tapered Minimum ¼" thick with ½" thick per taper	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 or 2 and 5	1:4 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 or 2 with 5	1:4 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR (over SECUROCK Gypsum-Fiber Roof Board ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.
 Or
 UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in ¾" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Maximum Design Pressure: -45 psf. with Vapor Barrier (See General Limitation #9)
 -62.5 psf. without Vapor Barrier (See General Limitation #9)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" puddle welds spaced 6" o.c. at each flute and with side laps attached using 1/4" -14 x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(31): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime Minimum 1/2" thick	1 or 2 with 5	1:1.78 ft ²
RESISTA Minimum 2" thick	1 or 2 with 5	1:1.78 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 using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: UltraPly TPO roof cover is fully adhered with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 60 ft²/gallon (120 ft²/gallon to both the underside of membrane and the substrate) or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gallon. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR (over DensDeck Prime ONLY) roof cover is fully adhered to with hot asphalt or Owens Corning PermaMop applied in the EVT range at a rate of 25-30 lbs./sq. or XR Bonding Adhesive at a rate of 70-90 ft²/gal to the substrate only. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

Or

UltraPly TPO XR is adhered with XR Stick Membrane Adhesive or I.S.O. Spray R applied in 3/4" to 1" wide ribbons spaced a maximum 12" o.c. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 80, Type B steel decking attached to steel supports spaced 7 ft. o.c. with 2 #12-24 HWH fasteners at every flute and with side laps attached using ¼" x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(32): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	1:4 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	1:4 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	1:4 ft ²

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 60 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 80, Type B steel decking attached to steel supports spaced 7 ft. o.c. with 2 #12-24 HWH fasteners at every flute and with side laps attached using ¼" x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(33): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	See Below
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	See Below
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	See Below

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 60 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The minimum 3" wide roof cover side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Maximum Design Pressure:	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
	-45 psf. (See General Limitation #7)	12 in.	6 ft.



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-ENP 19 L15 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(34): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	See Below
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	See Below
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	See Below

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 45 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The minimum 3" wide roof cover side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Maximum Design Pressure:	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
	-60 psf. (See General Limitation #7)	6 in.	144 in.
	-82.5 psf. (See General Limitation #7)	6 in.	72 in.



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-ENP 19 L15 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(35): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	1:2.67 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	1:2.67 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	1:2.67 ft ²

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 45 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-HSN 24 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(36): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 11 or 12	1:4 ft ²
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 11 or 12	1:4 ft ²
ISOGARD HD Composite Minimum 1.5" thick	1 with 11 or 12	1:4 ft ²

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 45 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld Plates or InvisiWeld-S Plates and fastened with Firestone Heavy-Duty. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Grade 80, Type N steel decking conforming to ASTM A653 installed over structural supports spaced 12 ft. o.c. with Hilti X-HSN 24 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type C(37): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	1 with 12	See Below
DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	1 with 12	See Below
ISOGARD HD Composite Minimum 1.5" thick	1 with 12	See Below

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

InvisiWeld Plate Note: When using InvisiWeld Plates over steel decks, ensure that the combined thickness of the insulation is minimum 1". This thickness shall be measured from the top rib of the steel deck.

Membrane: Min. 60 mil UltraPly TPO is induction welded to the UltraPly TPO InvisiWeld-S Plates and fastened with 2" Firestone Heavy-Duty. The roof cover side and end laps are sealed with a minimum 1.5" wide heat weld.

Maximum Design Pressure: -52.5 psf. For fastener density of 1:4 ft² (See General Limitation #7)
-75 psf. For fastener density of 1:2.67 ft² (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type C(38): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum ¼” thick	2 with 5	1:3.2 ft²
DensDeck Prime Minimum ½” thick	2 with 5	1:3.2 ft²
RESISTA Minimum 1” thick	2 with 5	1:3.2 ft²
ISO 95+ GL, ISOGARD HD Composite Minimum 1.5” thick	2 with 5	1:3.2 ft²

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Min. 45 mil UltraPly TPO membrane fully adhered to the top insulation layer with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 45 – 60 ft²/gal. or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gal. The side and end laps are sealed with a minimum 1.5” heat weld.
 Or
 Minimum UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered with XR Stick Membrane Adhesive or ISO Spray R applied in ¾” to 1” wide ribbons spaced 12” o.c. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.
 Or
 (DensDeck Prime and SECUROCK Gypsum-Fiber Roof Board ONLY)
 Minimum UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane fully adhered with XR Bonding Adhesive applied at a rate of 70 – 90 ft²/gallon. Or fully adhered with PermaMop or hot asphalt applied at a rate of 20-25 lbs./sq. The roof cover side and end laps are sealed with a minimum 1.5” heat weld.

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



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Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 22 ga. Steel. Grade 33, structural supports maximum 5 ft. o.c.
System Type C(39): All layers of insulation simultaneously attached; membrane fully adhered.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum 3/8" thick	2 with 5	1:4 ft²

Note: All layers shall be simultaneously fastened. Insulation panels listed are minimum sizes and dimensions. If larger panels are used, the number of fasteners shall be increased using the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Min. 45 mil UltraPly TPO membrane fully adhered to the top insulation layer with UltraPly Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 applied at a rate of 45 – 60 ft²/gal. or Water Based Bonding Adhesive P applied at a rate of 100-120 ft²/gal. The side and end laps are sealed with a minimum 1.5" heat weld.
Or
Minimum UltraPly TPO XR 100, UltraPly TPO XR 115, or UltraPly TPO XR 135 membrane adhered with XR Stick Membrane Adhesive or ISO Spray R applied in ¾" to 1" wide ribbons spaced 12" o.c. fully adhered with XR Bonding Adhesive applied at a rate of 70 – 90 ft²/gallon, or fully adhered with PermaMop or hot asphalt applied at a rate of 20-25 lbs./sq. The roof cover side and end laps are sealed with a minimum 1.5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., Grade 80 steel deck is secured to supports spaced 6 ft. o.c. with Traxx 5 fasteners spaced 6" o.c. (one fastener installed at each bearing attachment point) and Traxx 1 fasteners 24" o.c. at the side laps.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(1): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95 +GL Minimum 1.5" thick	N/A	N/A
RESISTA Minimum 4" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation as described below:

Fastening #1: Membrane mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 12" o.c. along the seam within minimum 6" wide roof laps. Fastener rows are spaced at maximum 90" o.c. and sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.
Maximum Design Pressure: -45 psf. (See General Limitation #7)

Fastening #2: Membrane mechanically fastened to the deck through the insulation using Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 12" o.c. along the seam within minimum 6" wide roof laps. Fastener rows are spaced at maximum 114" o.c. and sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.
Maximum Design Pressure: -45 psf. (See General Limitation #7)

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Fastening #3: Membrane is mechanically attached using Firestone Heavy Duty Plus and ¾" or 1" Firestone Polymer Batten Strips with fasteners spaced 6" o.c. along the batten bar in rows spaced 142" o.c. and along one intermediate field row centered in the field of the sheet. Side laps are sealed with a minimum 5" heat weld and the intermediate field row is covered with a minimum 5" wide strip of UltraPly TPO and sealed with a minimum 1.5" heat weld on either side of the batten.
Maximum Design Pressure: -135 psf. (See General Limitation #7)

Fastening #4: Membrane is mechanically attached using Firestone Heavy-Duty and ¾" or 1" Firestone Polymer Batten Strips with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 68" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.
Maximum Design Pressure: -82.5 psf. (See General Limitation #7)

Maximum Design Pressure: See Fastenings above.

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18 ga. Grade 33, steel deck is secured to supports spaced maximum 5 ft. o.c.
2. Minimum 20 ga. Grade 33 steel deck is secured to supports spaced maximum 4 ft. o.c.
3. Minimum 20 ga. Grade 80 steel deck is secured to supports spaced maximum 6 ft. o.c.
4. Minimum 22 ga. Grade 80 steel deck is secured to supports spaced maximum 66" o.c.

Deck is secured to structure with Traxx 5 fasteners spaced 6" o.c. and Traxx 1 fasteners 24" o.c. at the side laps.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(2): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Mechanically attach UltraPly QuickSeam R.M.A. Strips with Firestone Heavy-Duty 6" o.c. in Coiled Metal Batten Strip centered within the 4" wide center section of the UltraPly QuickSeam R.M.A Strips in rows 10 ft. o.c. UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer and placing the primed portion of the roof cover onto the strips. Minimum 2" wide side laps are sealed with a minimum 1.5" wide heat weld.

Or

Mechanically attach UltraPly TPO membrane with Firestone Heavy Duty Plus 12" o.c. in ¾" or 1" Firestone Polymer Batten Strips centered within the 6" wide side laps in rows 9.5 ft. o.c. The roof cover laps are sealed with a minimum 5" heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

- Deck Description:**
1. Minimum 18 ga., Grade 33, Type B steel decking attached to steel supports spaced maximum 4 ft. o.c.
 2. Minimum 18 ga., Grade 80, Type B steel decking attached to steel supports spaced maximum 6 ft. o.c.
 3. Minimum 20 ga., Grade 80, Type B steel decking attached to steel supports spaced maximum 5 ft. o.c.
 4. Minimum 22 ga., Grade 80, Type B steel decking attached to steel supports spaced maximum 4 ft. o.c.

Deck is secured to structure with Traxx 5 fasteners spaced 6" o.c. (at the bottom flute), and with side laps attached using Traxx 1 fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

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

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

One or more layers of any of the following insulations.

Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

ISO 95+ GL, RESISTA

Minimum 1.5" thick

N/A

N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation as described below:

Fastening #1: Membrane is mechanically attached using Firestone Heavy Duty Plus and Firestone HD Plus Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with a minimum 1.5" heat weld.
Or

Membrane is mechanically attached using Firestone Heavy Duty Plus and 1" wide Coiled Metal Batten Strip with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.

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

Fastening #2: Membrane is mechanically attached using Firestone Heavy Duty and Firestone HD Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 1.5" heat weld.

Or

Membrane is mechanically attached using Firestone Heavy Duty and 1" wide Coiled Metal Batten Strip with fasteners spaced 6" o.c. along the batten bar within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 5" wide heat weld that encapsulates the fasteners and batten strip.

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

**Maximum Design
Pressure:**

See Fastening Options above

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 22 ga. Grade 80 steel deck secured to supports space at maximum 4 ft. o.c.
2. Minimum 20 ga., Grade 80 steel deck secured to supports spaced maximum 6 ft. o.c.

Deck secured to structure with ITW Buildex Traxx/5 spaced 6" o.c. Side laps fastened with ITW Buildex Traxx/1 spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(4): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four (4) fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: UltraPly TPO (45-80 mils) Reinforced Membrane attached through the preliminary attached insulation as described below.

Fastening #1: Membrane is mechanically attached using Firestone Heavy Duty Plus and 1" Metal Batten Bars centered within minimum 6" wide laps. Fasteners are spaced 6" o.c. along the batten bar. Batten bar rows are spaced 90" o.c. and sealed with a minimum 5" heat weld.

Fastening #2: Membrane is mechanically attached using Firestone Heavy Duty Plus and Firestone HD Plus Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 90" o.c. and sealed with a minimum 5" heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 22 ga. Grade 80 steel deck secured to supports space at maximum 6 ft. o.c.,
2. Minimum 20 ga., Grade 33 steel deck secured to supports spaced maximum 6 ft. o.c.,
3. Minimum 22 ga. Grade 33 steel deck secured to supports spaced maximum 4 ft. o.c.

Deck secured to structure with ITW Buildex Traxx/5 spaced 6" o.c. Side laps fastened with ITW Buildex Traxx/1 spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(5): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four (4) fasteners for any insulation board having no dimension greater than 8 ft.

Membrane: UltraPly TPO (45-80 mils) Reinforced Membrane attached through the preliminary attached insulation as described below.

Fastening #1: Membrane is mechanically attached using Firestone Heavy Duty Plus and Firestone HD Plus Seam Plates or Firestone Heavy Duty and Firestone HD Seam Plates spaced 12" o.c. within minimum 6" wide laps. Laps are spaced at maximum 90" o.c. and sealed with a minimum 1.5" heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced
Deck Type 2I: Steel, Insulated
Deck Description: 1. Min. 18 ga. Grade 80 steel deck secured to supports space at max. 6 ft. o.c.,
 2. Min. 20 ga. Grade 80 steel deck secured to supports spaced at max. 54" o.c.
 Deck secured to structure with ITW Buildex Traxx/5 spaced at 6" o.c. Side lap fastened with ITW Buildex Traxx/1 spaced at 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(6): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum 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.

Membrane: UltraPly TPO Reinforced Membrane attached to deck through the preliminary attached insulation as specified below.

Fastening #1: Membrane is mechanically attached using Firestone Heavy-Duty and 1" wide Metal Batten Bars centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 114" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure: -75 psf.; See General Limitation #7.)

Fastening #2: Membrane is mechanically attached using Firestone Heavy Duty Plus and ¾" wide Firestone Polymer Batten Strips centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 114" o.c. Laps sealed with a minimum 5" wide hot air heat weld.
(Maximum Design Pressure: -75 psf.; See General Limitation #7.)

Fastening #3: Membrane is mechanically attached using Firestone Heavy Duty Plus and 1" Metal Batten Bars centered with the minimum 6" wide laps. Fasteners are spaced 6" o.c. along the batten bars. Batten rows are spaced at maximum 90" o.c. and sealed with minimum 5" heat weld.
(Maximum Design Pressure: -97.5 psf.; See General Limitation #7.)

Fastening #4: Membrane is attached to the deck with Firestone Heavy Duty Plus and Firestone HD Plus Seam Plates or Firestone Coiled Metal Batten Strip spaced 6" o.c. within the 6" wide side laps. Fastener rows are spaced 142" o.c. The roof cover side laps are sealed with a 1.5" wide heat weld placed along the outside edge of the lap.
(Maximum Design Pressure: -60 psf.; See General Limitation #7.)

Maximum Design Pressure: See Fastening Options Above



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Min. 20 ga. Grade 80 steel deck secured to supports space at max. 6 ft. o.c.
2. Min. 22 ga. Grade 80 steel deck secured to supports spaced at max. 54" o.c.

Deck secured to structure with ITW Buildex Traxx/5 spaced at 6" o.c. Side lap fastened with ITW Buildex Traxx/1 spaced at 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(7): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum 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.

Membrane: UltraPly TPO Reinforced Membrane attached to deck through the preliminary attached insulation as specified below.

Fastening: Membrane is mechanically attached using Firestone Heavy-Duty and ¾" wide Firestone Polymer Batten Strips centered within the 6" wide side laps. Fasteners spaced 6" o.c. along the batten bar. Batten bar rows were spaced 114" o.c. Laps sealed with a minimum 5" wide hot air heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 1. Min. 18 ga. Grade 80 steel deck secured to supports space at max. 6 ft. o.c.,
2. Min. 20 ga. Grade 80 steel deck secured to supports spaced at max. 66" o.c.
Deck secured to structure with ITW Buildex Traxx/5 spaced at 6" o.c. Side lap fastened with ITW Buildex Traxx/1 spaced at 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(8): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum 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.

Membrane: UltraPly TPO Reinforced Membrane attached to deck through the preliminary attached insulation as specified below.

Fastening: Membrane is mechanically attached using Firestone Heavy Duty Plus and Firestone HD Plus Seam Plates spaced 6" o.c. within minimum 6" wide laps. Laps are spaced at maximum 90" o.c. and sealed with minimum 5" heat weld.

Maximum Design Pressure: -90 psf. (See General Limitation #7.)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description:

1. Minimum 18 ga., Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c.
2. Minimum 20 ga., Grade 33, Type B steel decking attached to steel supports spaced 69" o.c.
3. Minimum 22 ga., Grade 33, Type B steel decking attached to supports spaced max. 62" o.c.
4. Minimum 22 ga. Grade 80, Type B steel decking attached to steel supports spaced max. 6 ft. o.c.

Deck secured to structure with Traxx 5 fasteners spaced 6" o.c. (at the bottom flute) two fasteners at each bearing attachment point, and with side laps attached using Traxx 1 fasteners spaced 14" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(9): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

Base Insulation Layer

**ISO 95+ GL, RESISTA
Minimum 1.5" thick**

**Insulation Fasteners
(Table 3)**

N/A

**Fastener
Density/ft²**

N/A

Top Insulation Layer

**DensDeck Prime
Minimum ½" thick**

**Insulation Fasteners
(Table 3)**

N/A

**Fastener
Density/ft²**

N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation as described below:

Fastening: Heavy-Duty Plus fasteners spaced 6" o.c. along 1" wide Coiled Metal Batten Strip centered within the 6" wide laps spaced 54" o.c. The roof cover side laps are sealed with a minimum 5" wide heat weld.

**Maximum Design
Pressure:** -112.5 psf. (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 20 ga. min. Grade 80, Type B steel deck is secured to supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 12" o.c. with 1/4" – 14 x 7/8" HWH screws with 1/2" washer.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(10): Membrane mechanically attached over preliminary fastened insulation.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL		
Minimum 1/2" thick	N/A	N/A
RESISTA		
Minimum 1" thick	N/A	N/A
ISOGARD HD Composite		
Minimum 2" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD		
Minimum 1/2" thick	N/A	N/A
DensDeck, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board		
Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min. 60 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with minimum 1.5" wide heat welds.

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 20 ga., min. Grade 80, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(11): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Composite Minimum 2" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Minimum 1/2" thick	N/A	N/A
DensDeck, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Glass-Mat Roof Board Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min. 60 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with minimum 1.5" wide heat welds.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 80, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds 6" o.c. (at the bottom flute), and with side laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(12): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
ISOGARD HD Composite Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum 1/2" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A
DensDeck, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Glass-Mat Roof Board Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 7" wide laps. Laps are spaced at maximum 89" o.c. and sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18 ga., min. Grade 50, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds. Deck attached at each flute along intermediate supports. No stitching at panel laps or optional 24" panel lap stitching with #1/4-14 x 7/8" HWH self-drilling screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(13): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ISO 95+ GL, RESISTA

Minimum 1/2" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

Top Insulation Layer

ISOGARD HD

Minimum 1/2" thick

Insulation Fasteners
(Table 3)

N/A

Fastener
Density/ft²

N/A

ISO 95+ GL, RESISTA

Minimum 1" thick

N/A

N/A

ISOGARD HD Composite

Minimum 1.5" thick

N/A

N/A

DensDeck, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Glass-Mat Roof Board

Minimum 1/4" thick

N/A

N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Plus Fasteners and Firestone HD Plus Seam Plates spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 114" o.c. and sealed with a minimum 1.5" wide heat weld.

Maximum Design

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 40, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds. Deck attached at each flute along intermediate supports. No stitching at panel laps.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(14): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISOGARD HD Minimum ½" thick	N/A	N/A
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 1.5" thick	N/A	N/A
DensDeck, SECUROCK Gypsum-Fiber Roof Board, SECUROCK Ultralight Glass-Mat Roof Board Minimum ¼" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Plus Fasteners and Firestone HD Plus Seam Plates spaced 12" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 90" o.c. and sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 18 ga. Grade 50 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 x 1-1/4" HWH SD screws and with panel laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(15): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

Vapor Barrier V-Force self-adhered to the top of each rib with 3" wide side laps

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum 1/2" thick	1 and 5	1:5.33 ft ²
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	1 and 5	1:5.33 ft ²
RESISTA Minimum 1" thick	1 and 5	1:5.33 ft ²
ISOGARD HD Composite Minimum 2" thick	1 and 5	1:5.33 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty fasteners and Firestone HD Seam Plates spaced 12" o.c. along the seam within minimum 6" wide laps. Laps are spaced at a maximum 142" and sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. min. Grade 80 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 x 1-1/4" HWH SD screws and with panel laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(16): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

Vapor Barrier V-Force self-adhered to the top of each deck rib with 3" wide side laps

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1/2" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum 1/2" thick	1 with 5	1:8.0 ft ²
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	1 with 5	1:8.0 ft ²
RESISTA Minimum 1" thick	1 with 5	1:8.0 ft ²
ISOGARD HD Composite Minimum 2" thick	1 with 5	1:8.0 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty fasteners and Firestone HD Seam Plates spaced 12" o.c. along the seam within minimum 6" wide laps. Laps are spaced at a maximum 114" and sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 33 steel deck secured to supports space at maximum 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. at each flute and side laps stitched 24" o.c. with ¼" – 14 x 7/8" HWH screws with ½" washer

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(17): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

Thermal Barrier: ¼" thick DensDeck Prime loose-laid

Vapor Barrier: V-Force self-adhered to the thermal barrier with 3" wide side laps

One or more layers of any of the following insulations.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 2" thick	1 or 2 with 5	1:4.0 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty fasteners and Firestone HD Seam Plates spaced 12" o.c. along the seam within minimum 6" wide laps. Laps are spaced at a maximum 114" and sealed with a minimum 1.5" wide heat weld at the 6" wide side lap.

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. min. Grade 33/80 (See MDP below) steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 x 1-1/4" HWH SD screws and with panel laps attached using 1/4" -14 x 7/8" HWH SD fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(18): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

Fire Barrier (Optional) 1/4" minimum thick SECUROCK Gypsum-Fiber Roof Board loose-l aid

Vapor Barrier V-Force self-adhered to top of fire barrier with 3" wide side laps

One or more layers of any of the following insulations.

<u>Base Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, RESISTA, ISOGARD HD Composite Minimum 3" thick	1 with 5	1:4.00 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 12" o.c. along the seam within minimum 6" wide roof laps. Fastener rows are spaced at maximum 114" o.c. and sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Maximum Design Pressure:
 -45 psf. with Grade 80 steel deck, no fire barrier (See General Limitation #7)
 -52.5 psf. with Grade 33 steel deck, with fire barrier (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-HSN 24 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(19): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum ½" thick	N/A	N/A
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 60 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. in-lap with rows spaced max. 142" o.c. the 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 80, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-HSN 24 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(20): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum ½" thick	N/A	N/A
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 60 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. in-lap with rows spaced max. 114" o.c. the 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with Hilti X-ENP 19 L15 power-driven fasteners at every flute along the supports and with side laps stitched 24" o.c. with Hilti S-SLC 01 M HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(21): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 60 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 6" o.c. in-lap with rows spaced max. 141" o.c. The 7" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.
Or
Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. in-lap with rows spaced max. 90" o.c. The 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., min. Grade 50, Type B steel decking conforming to ASTM A653, installed over structural supports spaced 6 ft. o.c. with #12-24 HWH screws fastened to structural supports at each flute; Deck side laps stitched 24" o.c. with ¼'-14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(22): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum ½" thick	N/A	N/A
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 6" o.c. in-lap with rows spaced max. 114" o.c. The 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., min. Grade 80, Type B steel decking conforming to ASTM A653, installed over structural supports spaced 6 ft. o.c. with #12-24 HWH screws fastened to structural supports at each flute; Deck side laps stitched 24" o.c. with ¼'-14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(23): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum ½" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Polymer Batten Strips or Coiled Metal Batten Bar spaced 6" o.c. in-lap or HD Plus Seam Plates spaced 12" o.c. in-lap with rows spaced max. 114" o.c. The 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Maximum Design Pressure:
-72 psf. with Polymer Batten Strips (See General Limitation #7)
-45 psf. with HD Plus Seam Plates (See General Limitation #7)
-73 psf. with Coiled Metal Batten Bar (See General Limitation #7)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga., min. Grade 50, Type B steel decking conforming to ASTM A653, installed over structural supports spaced 6 ft. o.c. with 5/8" diameter puddle welds spaced 6" o.c. welded to structural supports at each flute; Deck side laps stitched 24" o.c. with 1/4'-14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(24): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1/2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates or Firestone Heavy-Duty Plus and HD Plus Seam Plates (min. 60 mil UltraPly TPO only) spaced 6" o.c. in-lap with rows spaced max. 114" o.c. The 6" wide side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Maximum Design Pressure: -52.5 psf. with min. 45 mil UltraPly TPO (See General Limitation #7)
-60 psf with min. 60 mil UltraPly TPO (See General Limitation #7)

Membrane Type:	Single Ply, TPO, Reinforced
Deck Type 2I:	Steel, Insulated
Deck Description:	Minimum 22 ga. Steel, Grade 80
System Type D(25):	All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 24" o.c. in-lap with rows spaced max. 42" o.c. The min. 6" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.
Or
Mechanically attach UltraPly QuickSeam R.M.A. Strips spaced 4 ft. o.c. over the insulation and secured to the deck with Firestone HD Seam Plates and Firestone Heavy-Duty spaced 24" o.c. or with Firestone Batten Strip, Firestone Coiled Metal Batten Strip, or Firestone Polymer Batten Strip and Firestone Heavy-Duty spaced max. 24" o.c. min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer, UltraPly TPO QuickPrime, or Single-Ply LVOC Primer applied at 0.4 to 0.5 gal/sq. and placing the primed portion of the roof cover onto the strips. The min. 2" side laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type:	Single Ply, TPO, Reinforced
Deck Type 2I:	Steel, Insulated
Deck Description:	Minimum 22 ga. Steel, Grade 33
System Type D(26):	All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane:	<p>Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 24" o.c. in-lap with rows spaced max. 42" o.c. The min. 6" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.</p> <p>Or</p> <p>Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 24" o.c. in-lap with rows spaced max. 41" o.c. The min. 7" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.</p> <p>Or</p> <p>Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates spaced 18" o.c. in-lap with rows spaced max. 42" o.c. The min. 6" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.</p> <p>Or</p> <p>Mechanically attach UltraPly QuickSeam R.M.A. Strips spaced 4 ft. o.c. over the insulation and secured to the deck with Firestone HD Plus Seam Plates and Firestone Heavy-Duty Plus spaced 24" o.c. or with Firestone Batten Strip, Firestone Coiled Metal Batten Strip, or Firestone Polymer Batten Strip and Firestone Heavy-Duty Plus spaced max. 24" o.c. min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer, UltraPly TPO QuickPrime, or Single-Ply LVOC Primer applied at 0.4 to 0.5 gal/sq. and placing the primed portion of the roof cover onto the strips. The min. 2" side laps are sealed with a minimum 1.5" wide heat weld.</p> <p>Or</p>
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**Membrane:
(Continued)**

Mechanically attach UltraPly QuickSeam R.M.A. Strips spaced 4 ft. o.c. over the insulation and secured to the deck with Firestone HD Seam Plates and Firestone Heavy-Duty spaced 18" o.c. or with Firestone Batten Strip, Firestone Coiled Metal Batten Strip, or Firestone Polymer Batten Strip and Firestone Heavy-Duty spaced max. 18" o.c. min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer, UltraPly TPO QuickPrime, or Single-Ply LVOC Primer applied at 0.4 to 0.5 gal/sq. and placing the primed portion of the roof cover onto the strips. The min. 2" side laps are sealed with a minimum 1.5" wide heat weld.

**Maximum Design
Pressure:**

-45 psf. (See General Limitation #9)



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga. Grade 33, Type B steel decking installed over structural supports spaced 6 ft. o.c. with #12 HWH Tek 5 fasteners spaced 6" o.c. Side laps secured with #10 HWH Tek 1 fasteners in rows spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(27): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min 60 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates or Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 12" o.c. in-lap with rows spaced max. 54" o.c. The 2" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

Or

Mechanically attach UltraPly QuickSeam R.M.A. Strips spaced 6 ft. o.c. over the insulation and secured to the deck with Firestone HD Seam Plates or Polymer Batten Strip and Firestone Heavy-Duty or with Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 12" o.c. Min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer and placing the primed portion of the roof cover onto the strips. The 2" side laps are sealed with a minimum 1.5" wide heat weld.

Or

**Membrane:
(Continued)**

Mechanically attach UltraPly QuickSeam R.M.A. Strips evenly spaced between the roof cover laps and secured to the deck with Polymer Batten Strip, Firestone Batten Strip, or Firestone Coiled Metal Batten with Firestone Heavy-Duty spaced 12" o.c. Min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with Single-Ply QuickPrime Primer and placing the primed portion of the roof cover onto the strips. The min. 6" side laps are sealed with a minimum 1.5" wide heat weld.

Or

Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty and Firestone HD Seam Plates or Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 12" o.c. in-lap with rows spaced max. 114" o.c. The 2" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

**Maximum Design
Pressure:**

-52.5 psf. with min. 60 mil UltraPly TPO (See General Limitation #7)
-45 psf. with min. 45 mil UltraPly TPO or with UltraPly QuickSeam R.M.A. Strips (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: 22 ga. Grade 80/33 (See membrane options below) steel decking installed over structural supports spaced 6 ft. o.c. with #12 HWH Tek's 5 fasteners spaced 6" o.c. Side laps secured with #10 HWH Tek's 1 fasteners in rows spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(28): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: (Grade 80 steel deck ONLY) Min 45 mil UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy-Duty Plus and Firestone HD Plus Seam Plates spaced 12" o.c. in-lap with rows spaced max. 54" o.c. The min. 6" side laps are sealed with a minimum 1.5" wide heat weld on the outside edge of the lap.

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

Or

(Grade 33 steel deck ONLY) Mechanically attach UltraPly QuickSeam R.M.A. Strips spaced max. 114" o.c. over the insulation and secured to the deck with Firestone HD Plus Seam Plates and Firestone Heavy-Duty Plus spaced 12" o.c. Min. 45 mil UltraPly TPO roof cover is adhered to the UltraPly QuickSeam R.M.A. Strips by first priming the underside of the roof cover, at the strip locations, with UltraPly TPO QuickPrime, Single-Ply QuickPrime Primer, or Single-Ply LVOC Primer and placing the primed portion of the roof cover onto the strips. The min. 2" side laps are sealed with a minimum 1.5" wide heat weld.

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

Maximum Design Pressure: See Membrane options above.

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 80 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 HWH screws and with panel laps attached using ¼" -14 x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(29): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: Min. 45 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Plus fasteners and Firestone HD Plus Seam Plates or Coiled Metal Batten Bar spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at a maximum 90" and sealed with a minimum 5" wide heat weld.

Maximum Design Pressure: -112.5 psf. with Firestone HD Plus Seam Plates (See General Limitation #7)
-97.5 psf. with Coiled Metal Batten Bar (See General Limitation #7)

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 33 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 HWH screws and with panel laps attached using ¼" -14 x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(30): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum ½" thick	N/A	N/A
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: Min. 45 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty fasteners and Firestone HD Seam Plates spaced 6" o.c. 2" from the edge of the sheet in rows spaced 90" o.c. The 6" wide laps are sealed with a minimum 1.5" wide heat weld.

Or

(min. 1" thick ISO 95+ GL only) Min. 60 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty fasteners and Firestone HD Seam Plates spaced 6" o.c. in rows spaced 142" o.c. The 6" wide laps are sealed with a minimum 1.5" wide heat weld.

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



Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 50 steel deck secured to supports space at maximum 6 ft. o.c. with #12-24 HWH screws and with panel laps attached using ¼" -14 x 7/8" HWH fasteners spaced 24" o.c.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(31): All layers of insulation simultaneously attached; membrane mechanically fastened.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL 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 per board shall be increased maintaining the same fastener density. See Roofing Application Standard RAS 117 for fastening details.

Membrane: Min. 60 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Plus fasteners and Firestone HD Plus Seam Plates spaced 6" o.c. in rows spaced 114" o.c. The 6" wide laps are sealed with a minimum 1.5" wide heat weld.

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

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds. Deck attached at each flute along intermediate supports. 24" panel lap stitching with #1/4-14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(32): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL Minimum 1" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min. 45 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Fasteners and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure: -45 psf. (See General Limitation #7)

Min. 60 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Fasteners and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 6" wide laps. Laps are spaced at maximum 142" o.c. and sealed with a minimum 1.5" wide heat weld.
Maximum Design Pressure: -52.5 psf. (See General Limitation #7)

Maximum Design Pressure: See Membrane Above.

Membrane Type: Single Ply, TPO, Reinforced

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga., min. Grade 33, Type B steel decking attached to steel supports spaced 6 ft. o.c. with 5/8" diameter puddle welds. Deck attached at each flute along intermediate supports. 24" panel lap stitching with #1/4-14 x 7/8" HWH screws.

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type D(33): All layers of insulation and base sheet simultaneously attached.

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

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ISO 95+ GL, ISOGARD HD Minimum ½" thick	N/A	N/A
DensDeck Prime, SECUROCK Ultralight Glass-Mat Roof Board, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A
RESISTA Minimum 1" thick	N/A	N/A
ISOGARD HD Composite Minimum 2" thick	N/A	N/A

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane 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.

Membrane: Min. 60 mil. UltraPly TPO mechanically fastened to the deck through the insulation using Firestone Heavy Duty Fasteners and Firestone HD Seam Plates spaced 6" o.c. along the seam within minimum 7" wide laps. Laps are spaced at maximum 89" o.c. and sealed with a minimum 1.5" wide heat weld.

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



STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or 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 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 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



NOA-No.: 23-0613.41
Expiration Date: 11/27/27
Approval Date: 09/07/23
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