



MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
 11805 SW 26 Street, Room 208
 Miami, Florida 33175-2474
 T (786)315-2590 F (786) 31525-99
www.miamidade.gov/economy

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

Johns Manville Corporation
 717 17th Street
 Denver, CO 80202

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: Johns Manville Modified Bitumen Roofing Systems over Steel Deck.

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

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

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

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

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

This NOA renews and revises NOA No. 13-0129.19 and consists of pages 1 through 70.
 The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 13-0529.18
 Expiration Date: 07/19/16
 Approval Date: 10/22/15
 Page 1 of 70

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Materials:	SBS
Deck Type:	Steel
Maximum Design Pressure:	-195 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
DynaBase	39-3/8" x 49'2"	ASTM D 6163 Type I Grade S	A glass reinforced SBS modified bitumen base sheet.
DynaBase PR	39-3/8" x 49'2"	ASTM D6164 Type I Grade S	A polyester reinforced SBS modified bitumen base sheet.
DynaBase HW	39-3/8" x 49'2"	ASTM D 6163, Type 1 Grade S	A glass reinforced SBS modified bitumen base sheet for heat welded applications.
DynaFast 180 S	39-3/8" x 49'2"	ASTM D6164	A polyester reinforced SBS modified bitumen base or inner ply sheet.
DynaFast 180 HW	39-3/8" x 49'2"	ASTM D6164	A polyester reinforced SBS modified bitumen base or inner ply sheet for use in heat weld applications.
DynaFast 250 HW	39-3/8" x 32'10"	ASTM D6164	A polyester reinforced SBS modified bitumen base or inner ply sheet for use in heat weld applications.
DynaWeld Base	39'-3/8" x 32'-10"	ASTM D6163 Type I Grade S	A glass reinforced SBS modified bitumen base sheet for heat welded applications.
DynaWeld Cap FR CR	39'-3/8" x 32'-10"	ASTM D6163 Type I Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules and a reflective white coating for use in heat weld applications.
DynaGlas FR CR	39-3/8" x 32'-10";	ASTM D6163 Type I Grade G	A fire resistant, glass reinforced SBS modified bitumen membrane surfaced with granules and a reflective white coating for use in heat weld applications.
DynaGlas	39-3/8" x 32'-10"	ASTM D6163 Type I Grade G	A glass reinforced SBS modified bitumen membrane surfaced with granules.
DynaWeld Cap FR	39'-3/8" x 32'-10"	ASTM D6163 Type I Grade G	A fire resistant, glass reinforced SBS modified bitumen membrane surfaced with granules for use in heat weld applications.
DynaWeld Cap 180 FR	39-3/8" x 32'-10"	ASTM D6164 Type I Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules for use in heat weld applications.
DynaWeld Cap 250 FR	39-3/8" x 32'-10"	ASTM D6164 Type II Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules for use in heat weld applications.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
DynaWeld Cap 250 FR CR	39-3/8" x 32'-10"	ASTM D6164 Type II Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules and a reflective white coating for use in heat weld applications.
DynaWeld Cap 250	39-3/8" x 32'-10"	ASTM D6164 Type II Grade G	A polyester reinforced SBS modified bitumen membrane surfaced with granules for use in heat weld applications.
DynaWeld 250 S	39-3/8" x 32'-10"	ASTM D6164 Type II Grade S	A polyester reinforced SBS modified bitumen base or inner ply sheet for use in heat weld applications.
DynaGlas 30 FR	39-3/8" x 32'-10"	ASTM D6163 Type I Grade G	A fire resistant, glass reinforced SBS modified bitumen membrane surfaced with granules.
DynaGlas FR	39-3/8" x 32'-10"	ASTM D6163 Type I Grade G	A fire resistant, glass reinforced SBS modified bitumen membrane surfaced with granules.
DynaKap T1	39-3/8" x 32'-10"	ASTM D6162 Type I Grade G	A composite reinforced SBS modified bitumen membrane surfaced with granules.
DynaKap FR T1	39-3/8" x 32'-10"	ASTM D6162 Type I Grade G	A fire resistant, composite reinforced SBS modified bitumen membrane surfaced with granules.
DynaLastic 180	39-3/8" x 32'-10"	ASTM D6164 Type I Grade G	A polyester reinforced SBS modified bitumen membrane surfaced with granules.
DynaLastic 180 FR	39-3/8" x 32'-10"	ASTM D6164 Type I Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules.
DynaLastic 180 S	39-3/8" x 32'-10"	ASTM D6164 Type I Grade S	A polyester reinforced SBS modified bitumen base or inner ply sheet.
DynaWeld 180 S	39-3/8" x 32'-10"	ASTM D6162 Type I Grade S	A polyester reinforced SBS modified bitumen base or inner ply sheet for use in heat weld applications.
DynaPly T1	39-3/8" x 32'-10"	ASTM D6162 Type II Grade S	A composite reinforced SBS modified bitumen base or inner ply sheet.
DynaLastic 250 FR	39-3/8" x 32'-10"	ASTM D6164 Type II Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules.
DynaLastic 250 FR CR	39-3/8" x 32'-10"	ASTM D6164 Type II Grade G	A fire resistant, polyester reinforced SBS modified bitumen membrane surfaced with granules and a reflective white coating.
DynaLastic 250 S	39-3/8" x 32'-10"	ASTM D 6164 Type II Grade S	A polyester reinforced SBS modified bitumen base or inner ply sheet.
DynaMax FR	39-3/8" x 32'-10"	ASTM D6162 Type III Grade G	A fire resistant, composite reinforced SBS modified bitumen membrane surfaced with granules.
DynaMax S	39-3/8" x 32'-10"	ASTM D6162 Type III Grade S	A composite reinforced SBS modified bitumen base or inner ply sheet.

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
DynaClad	39-3/8" x 33'10"	ASTM D6298	A glass reinforced base sheet SBS modified bitumen membrane surfaced with foil.
DynaBase XT	39-3/8" x 49'-2"	ASTM D 6163 Type I Grade S	A glass reinforced SBS modified bitumen base or inner ply sheet.
DynaGlas FR XT	39-3/8" x 32'-10"	ASTM D6163 Type I Grade S	A fire resistant, glass reinforced SBS modified bitumen membrane surfaced with granules.
GlasKap	36" x 36'	ASTM D3909	A mineral surfaced, asphalt coated, fiberglass cap sheet.
GlasKap CR	36" x 36'	ASTM D3909	A white mineral surfaced, white acrylic coated, fiberglass cap sheet.
Ventsulation Felt	36" x 36'	ASTM D4897 Type II	Heavy duty fiber glass base sheet impregnated and coated on both sides with asphalt with or without fine mineral stabilizer. Surfaced on the bottom side with coarse mineral granules embedded in asphaltic coating.
GlasBase Plus	36" x 108'	ASTM D4601	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
GlasPly IV	36" x 180'	ASTM D2178 Type IV	Type IV asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
GlasPly Premier	36" x 180'	ASTM D2178 Type VI	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
PermaPly 28	36" x 106'	ASTM D4601 Type II	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
FesCant Plus Cant Strips, and Taper Edge	various	ASTM C728	Factory pre-fabricated cant strips and taper edge, manufactured from expanded perlite insulation.
MBR Flashing Cement Base and Activator	N/A	Proprietary	A two component elastomeric, cold application adhesive, consisting of a modified proprietary compound with an asphalt base.
MBR Bonding Adhesive	N/A	proprietary	A two component urethane cold application adhesive.
MBR Cold Application Adhesive	5, 55, and 350 gal.	ASTM D3019 Type III	One part, elastomeric cold application adhesive
MBR Low VOC Membrane Adhesive	5 gal	Proprietary	One part, asphalt modified urethane adhesive



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
MBR RA Membrane Adhesive	1.5L Cartridge	Proprietary	Two part, cold process membrane adhesive
JM Two Part Urethane Insulation Adhesive	N/A	Proprietary	A two-part urethane insulation adhesive
Bestile Industrial Roof Cement	various	ASTM D4586 Type I	A trowel grade, cutback bitumen flashing grade cement mixture including inorganic fibers and mineral stabilizers.
Flex-I-Drain	various	BOCA 76-61 SBCCI 89204 UBC 3236	Two piece flexible drain system composed of a Noryl deck flange, a flexible neoprene bellows and no hub connection. Available in various sizes and styles for most retro-fit applications.
PC/PET RetroDrain	various	N/A	Engineered resin copolymer fabricated drain for retrofit applications.
USII RetroDrain	various	N/A	One piece, aluminum fabricated drain for retrofit applications.
SuperDome RetroDrain	various	N/A	Cast aluminum, heavy-duty drain for retrofit applications.
FP-10 Vents	10" deck flange, base diameter of 4" and a height of 6"	N/A	One-way roof vent, designed for use in various roof systems, for the release of pressure created by gases or moisture vapor trapped within the roofing system.
Expand-O-Guard	various	N/A	Elastomeric expansion joint cover for vertical expansion and seismic joints. Manufactured from non-reinforced, form-supported elastomeric bellows with a bifurcated waterproof attachment to metal flanges.
Expand-O-Flash	various	N/A	Expansion joint covers manufactured from non-reinforced, form-supported elastomeric bellows with a bifurcated waterproof attachment to metal flanges.
Presto-Lok Fascia and Flashing System	various	TAS 114	A multi-piece fascia and flashing system for built-up and modified bitumen roofing systems manufactured from aluminum or steel.
DynaTred & DynaTred Plus Roof Walkway	various	N/A	Preformed, skid-resistant boards.



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI	Polyisocyanurate Insulation.	Johns Manville
ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI	Polyisocyanurate Insulation with glass reinforced facers	Johns Manville
ENRGY 3 FR	Polyisocyanurate Insulation with inorganic coated glass reinforced facers; bottom face is premium coated for combustible decks.	Johns Manville
Fesco Foam, DuraFoam	Polyisocyanurate Insulation with perlite facer	Johns Manville
Retro-Fit Board, DuraBoard	High-density perlite roof insulation.	Johns Manville
Fesco Board	Rigid perlite roof insulation board.	Johns Manville
Invinsa Roof Board	High density polyisocyanurate board	Johns Manville
JM SECUROCK Gypsum-Fiber Roof Board	Rigid, gypsum-based board stock	Johns Manville
DensDeck, DensDeck Prime	Silicon treated gypsum	Georgia Pacific Gypsum, LLC



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	UltraFast Fastener	Insulation fastener for wood and steel.	#12 x 8" Max. Length, #3 Phillips head	Johns Manville
2.	UltraFast ASAP	Pre-assembled Insulation fastener and plate	Various	Johns Manville
3.	UltraFast 3” Round Metal Plate or UltraFast Square Recessed Metal Plate	Galvalume AZ55 steel plate	3” round & 3” square	Johns Manville
4.	UltraFast Plastic Plate	High Density Polyolefin round plate	3” round	Johns Manville
5.	All Purpose Fastener	Insulation fastener	#14 x 16” Max. Length; #3 Phillips head	Johns Manville
6.	High Load Fasteners	Insulation and membrane fastener for steel, wood or concrete	#15 x 14" Max. Length #3 Phillips head	Johns Manville
7.	High Load Plate	Steel Seam plate with reinforcing ribs and eyehooks	2-3/8” round	Johns Manville
8.	High Load LH	#15 Large Head fastener for steel, wood, or concrete	#15 x 14" Max. Length	Johns Manville
9.	Polymer Membrane Batten	Membrane anchors plastic strips	1” x 250’ coil	Johns Manville
10.	APB Plates	Steel Seam plate with reinforcing ribs and barbs	2” round	Johns Manville
11.	Deep Well Batten Bar	galvalume coated steel membrane batten	1” x 100’ coil	Altenloh, Brink & Co. U.S., Inc.



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>	
Factory Mutual Research	3007148	FM 4450	04/19/00	
	3009499	FM 4470	04/04/01	
	3001482	FM 4470	08/11/98	
	3002823	FM 4470	04/01/99	
	3011248	FM 4470	11/01/02	
	3001457	FM 4470	04/04/02	
	3014090	FM 4470	09/05/02	
	3012974	FM 4450	06/03/02	
	3020600	FM 4470	01/21/05	
	3026130	FM 4470	04/26/06	
	3026151	FM 4470	08/15/06	
	3026728	FM 4470	11/22/06	
	3037222	FM 4470	10/02/09	
	3026130	FM 4470	04/26/09	
	3036559	FM 4470	10/02/09	
	3037540	FM 4470	10/20/10	
	3043824	FM 4470	06/28/06	
	Dynatech Engineering,	4360.03.95-1	TAS 114	03/95
		4360.03.95-2	TAS 114	03/95
		4361.5.95-1	TAS 114	05/95
Underwriters Laboratories, Inc.	R10167	UL 790	05/27/13	
Exterior Research & Design, LLC.	#4361-2.04.97-1	TAS 114	04/28/97	
	10391.01.03	TAS 114	01/29/03	
	02843.02.05-10	TAS 114	02/10/05	
	00257.03.05-1	ASTM D6162/D6163 ASTM D6164/D6298	03/17/05	
Trinity ERD	02843.02.07	TAS 114	02/07/07	
	J7670.06.08	ASTM D3909	06/16/08	
	J6990.12.07	ASTM D6162/D6164	12/03/07	
	J17040.11.09	ASTM D6164	11/16/09	
	J13700.05.10-1-R1	ASTM D5147/D6163	01/25/11	
	J13700.05.10-2	ASTM D5147/D6164	05/11/10	
	J45020.07.13	FM 4474 (D)/TAS 114 (J)	07/12/13	
Independent Roof Testing & Consultants of South Florida	IRT 99010	TAS 114	01/20/99	
	IRT 99011	TAS 114	01/20/99	
IRT-ARCON Inc.	02-026	TAS 114	07/26/02	
	02-011	TAS 114	02/06/02	
Atlantic & Caribbean Roof Consulting, LLC.	ACRC 06-003	TAS 114	03/27/06	
PRI Construction Materials Technologies, LLC	JMC-066-02-01	ASTM D6163	06/04/12	
	JMC-065-02-01	ASTM D6163	05/29/12	
	JMC-070-02-01	ASTM D2178 Type IV	04/17/12	
	JMC-071-02-01	ASTM D2178 Type VI	04/17/12	
	JMC-072-02-01	ASTM D4601 Type II	06/14/12	



EVIDENCE SUBMITTED: (CONTINUED)

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
PRI Construction Materials Technologies, LLC	JMC-074-02-01	ASTM D4897 Type II	04/17/12
	JMC-075-02-04.2	ASTM D5147/D6164 Type II	12/27/13
	JMC-078-02-01	ASTM D5147/D6298	07/17/12
	JMC-081-02-01.02	TAS 117 B & C	06/11/12
	JMC-091-02-01	ASTM D4601 Type I	06/04/12
	JMC-093-02-01	ASTM D4601 Type II	08/02/12
	JMC-105-02-01	ASTM D5147/D6162	05/22/13
	JMC-106-02-01	ASTM D6164	04/15/13
	JMC-107-02-01 Rev 6	ASTM D903/D1876/D5147 TAS 117(B)/TAS 117(A) TAS 114(C)	08/14/15
	JMC-108-02-01	FM 4474 (D)/TAS 114 (J)	04/16/13
	JMC-114-02-01	FM 4474 (D)/TAS 114 (J)	05/13/13
	JMC-113-02-01	ASTM D6164	04/19/13
	JMC-118-02-02	FM 4474 (C)/TAS 114 (C)	04/16/13
	JMC-141-02-01	FM 4474 (D)/TAS 114 (J)	04/18/13
	JMC-168-02-01	FM 4474 (D)/TAS 114 (J)	08/20/13
	JMC-171-02-01	ASTM D6163	01/10/14
	JMC-171-02-02	ASTM D6163	01/10/14
	JMC-171-02-10	ASTM D6162	01/10/14
	JMC-171-02-03	ASTM D6164	01/10/14
	JMC-171-02-04	ASTM D6163/TAS 110	03/03/14
JMC-171-02-07	ASTM D6164/TAS 110	02/24/14	
JMC-171-02-11	ASTM D6164	03/14/14	



APPROVED ASSEMBLIES

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., min. 33 ksi steel deck placed over 0.25 in. thick structural steel supports spaced max. 6 ft o.c. attached with Buildex Traxx/5 fasteners spaced max. 6 in. o.c. at the supports. Side laps are secured with Buildex Traxx/1 fasteners spaced max. 30 in o.c.

System Type B(1): Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, Fesco Foam, DuraFoam Minimum 2" thick	1 with 3, 5 with 3, or 2	1:1.45 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Fesco Foam, DuraFoam Minimum 2" thick	N/A	N/A
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional if base sheet used) One ply of PermaPly 28, DynaBase, DynaBase XT, GlasBase, or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional if ply sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -75 psf. (See general limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. type B, Grade 33 steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. at each bearing using Traxx/5 fasteners. Deck side laps are attached 24” o.c. using Traxx/1 fasteners.

System Type B(2): Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, Fesco Foam, DuraFoam Minimum 1.5” thick	1 with 3, 5 with 3, or 2	1:1.78 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Foam, DuraFoam Minimum 1.5” thick	N/A	N/A
Retro-Fit Board, DuraBoard Minimum ½” thick	N/A	N/A

Note: Top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs./100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly 28, DynaBase, DynaBase XT, GlasBase, or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional if base sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -60 psf. (See general limitation #7).

- Membrane Type:** SBS
- Deck Type 2I:** Steel, Insulated
- Deck Description:** 18-22 ga.(MSG) (0.0474, 0.0358 or 0.0295 in.) 33 or 80 ksi, steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. using Traxx/5 fasteners. Deck side laps are attached 24” o.c. using Traxx/1 fasteners.
- System Type B(3):** Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5” thick	1 with 3 or 4	1:1 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½” thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:

1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure:

- 82.5 psf. with minimum 33 ksi steel deck (See general limitation #7).
- 90 psf. with minimum 80 ksi steel deck (See general limitation #7).



- Membrane Type:** SBS
- Deck Type 2I:** Steel, Insulated
- Deck Description:** 22 ga. (min. 0.0295 in.) Type B (ASTM A1008M-01a Grade 80 or ASTM A653 SS Grade 80) steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. using Teks 4 or Teks 5 fasteners. Deck side laps are attached 30” o.c. using Teks 1 fasteners.
- System Type B(4):** Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5” thick	1 with 3	1:1.33 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½” thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

- Base Sheet:** One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.



Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:
1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure: -67.5 psf. (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., min 33 ksi steel decking over 1/4" thick steel supports spaced maximum of 6 ft. o.c. attached 6" o.c. using two ICH Traxx/5 fasteners and 3/4" washers. Deck side laps are attached 24" o.c. using ICH Traxx/1 fasteners.

System Type B(5): Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5" thick	1 with 3	1:1.78 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum 1/2" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.



- Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.
- Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
- Surfacing: (Optional with FR membranes) Install one of the following:
1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.
- Maximum Design Pressure: -52.5 psf. (See general limitation #7).

- Membrane Type:** SBS
- Deck Type 2I:** Steel, Insulated
- Deck Description:** 18-22 ga., min 33 ksi steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached max. 6” o.c. using Teks 4 or Teks 5 fasteners at the supports. Deck side laps are attached max. 30” o.c. using Teks 1 fasteners.
- System Type B(6):** Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5” thick	1 with 3	1:1.78 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½” thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Or,

One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:

1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure:

-60 psf. (See general limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel deck

System Type B(7): Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5" thick	1 with 3	1:4.0 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Or,

One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:

1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure:

-45 psf. (See general limitation #9).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel deck

System Type B(8): Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 2.0" thick	1 with 3	1:5.33 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Or,

One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:

1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure:

-45 psf. (See general limitation #9).

- Membrane Type:** SBS
- Deck Type 2I:** Steel, Insulated
- Deck Description:** 18-22 ga., min. 80 ksi steel decking over 1/4" thick steel supports spaced maximum of 6 ft. o.c. attached max. 6" o.c. using Traxx/5 fasteners. Deck side laps are attached max. 24" o.c. using Traxx/1 fasteners.
- System Type B(9):** Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 2.0" thick	1 with 3	1:1.45 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum 1/2" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Or,

One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Surfacing: (Optional with FR membranes) Install one of the following:

1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure:

-90 psf. (See general limitation #7).



- Membrane Type:** SBS
- Deck Type 2I:** Steel, Insulated
- Deck Description:** 18-22 ga.(MSG) (0.0474, 0.0358 or 0.0295 in.) 33 or 80 ksi steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. using Traxx/5 fasteners. Deck side laps are attached 24” o.c. using Traxx/1 fasteners.
- System Type B(10):** Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, Minimum 1.5” thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum ½” thick	1 with 3	1:1.0 ft²

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in ¾” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

- Base Sheet:** One ply of DynaWeld Base heat welded to the insulated substrate.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.
- Ply Sheet:** (Optional) One or more plies of DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.
Or
One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered to the base sheet with MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or approved mopping asphalt at an application rate of 20-40 lbs./sq.



Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered to the base sheet with MBR Bonding Adhesive fully adhered at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure: -82.5 psf. with minimum 33 ksi steel deck (See general limitation #7).
-135 psf. with minimum 80 ksi steel deck (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel deck.

System Type B(11): Base layer of insulation mechanically fastened, top layer fully adhered with adhesive.

All General and System Limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI Minimum 1.5” thick	N/A	N/A

Note: Base layer shall be mechanically attached with fasteners and density described. 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).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Minimum 0.375” thick	1 with 3	1:2.67 ft²

Note: Top layer of insulation shall be adhered with JM Two-Part Urethane Insulation Adhesive applied in 3/4” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of DynaWeld Base heat welded to the insulated substrate.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: (Optional) One or more plies of DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.
Or
One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered to the base sheet with MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or approved mopping asphalt at an application rate of 20-40 lbs./sq.



Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered to the base sheet with MBR Bonding Adhesive fully adhered at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Surfacing: (Optional with FR membranes) Install one of the following:
1. Henry 280 in two coats applied at a rate of 1.0 gal./sq./coat.

Maximum Design Pressure: -45 psf. (See general limitation #9).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel, ASTM A653 Grade 80 steel deck placed over 0.25 in. thick structural steel supports spaced max. 6 ft o.c. attached with Buildex Traxx/4 or Traxx/5 fasteners spaced max. 6 in. o.c. at the supports. Side laps are secured with Buildex Traxx/1 fasteners spaced max. 30 in o.c.

System Type C(1): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5” thick	N/A	N/A

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DuraBoard Minimum ¾” thick	1 with 3 or 4, or 2	1:1.33 ft²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Base Sheet: One or more plies of DynaWeld Base heat welded.

Ply sheet: (Optional) One or more plies of DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: One ply of DynaWeld Cap FR CR, DynaWeld FR, DynaWeld Cap 180 FR, DynaWeld 250 FR, or DynaWeld 250 FR CR heat welded.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. ASTM A 1008 Grade 80 Type B steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. using Traxx/5 fasteners. Deck side laps are attached 24” o.c. using Traxx/1 fasteners.

System Type C(2): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Fesco Board, DuraBoard Minimum ¾” thick	N/A	N/A

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5” thick	1 with 3	1:1.33 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Base Sheet: One ply of DynaBase, DynaBase XT or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel. See Steel Deck System Limitation #2. (On last page of NOA)

System Type C(3): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.3" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Fesco Board, DuraBoard Minimum 3/4" thick	N/A	N/A

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Foam, DuraFoam Minimum 1.5" thick	1 with 3 or 4, or 2	1:2 ft ²
Fesco Board, DuraBoard Minimum 3/4" thick	1 with 3 or 4, or 2	1:2 ft ²
Retro-Fit Board, DuraBoard Minimum 1/2" thick	1 with 3 or 4, or 2	1:2 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly 28, DynaBase, DynaBase XT, GlasBase, or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional if base sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -45 psf. (See general limitation #9)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel. See Steel Deck System Limitation #2. (On last page of NOA)

System Type C(4): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, , ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI, Fesco Foam, DuraFoam Minimum 1.5” thick	N/A	N/A
Fesco Board, DuraBoard Minimum ¾” thick	N/A	N/A

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Foam, DuraFoam Minimum 1.5” thick	1 with 3 or 4, or 2	1:2 ft ²
Fesco Board Minimum ¾” thick	1 with 3 or 4, or 2	1:2 ft ²
Retro-Fit Board, DuraBoard Minimum ½” thick	1 with 3 or 4, or 2	1:2 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly 28, DynaBase, DynaBase XT, GlasBase, or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional if base sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -45 psf. (See general limitation #9).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(5): All layers of insulation simultaneously mechanically fastened.

Deck: 18-22 ga., type B, Grade 80 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 6 ft. on centers with Traxx/5 screws. Deck side laps attached 30" o.c. using Traxx/1 screws.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI, Fesco Foam, DuraFoam Minimum 2.0" thick	N/A	N/A

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	1 with 3 or 4, or 2	1:1.78 ft²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Base Sheet: (Optional if Ply Sheet used) One ply of PermaPly 28, DynaBase, DynaBase XT, GlasBase or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional if Base Sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -75 psf. (See general limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18, 20 or 22 ga. min. 33 ksi Steel deck fastened to ¼” supports spaced maximum 6 ft. o.c. with two ICH Traxx/5 fasteners spaced 6” o.c. maximum and with side laps fastened with ICH Traxx/1 fasteners spaced 24” o.c.

System Type C(6): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5” thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See top layer below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
JM SECUROCK Gypsum-Fiber Roof Board Minimum ½” thick	1 with 3	1:1.45 ft²

Note: 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.

Base Sheet: One ply of GlasBase Plus, DynaBase, PermaPly 28, GlasPly IV, GlasPly Premier, DynaLastic 180 S or DynaLastic 250 S adhered to the insulated substrate with MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq.
Or
One ply of GlasBase Plus, DynaBase, DynaBase XT, PermaPly 28, or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive applied at an application rate of 1.5 gal./sq. or approved mopping asphalt at an application rate of 20-40 lb./sq.

Ply Sheet: One or more plies of DynaPly T1, DynaBase, DynaBase PR, DynaBase XT, DynaMax S, DynaLastic 180 S, DynaFast 180 S, GlasPly IV, GlasPly Premier or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive applied at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One or more plies of DynaWeld 180 S, DynaWeld Base, DynaBase HW, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One ply of DynaKap FR T1, DynaClad, DynaGlas FR, DynaGlas FR CR, DynaGlas 30 FR, DynaLastic 180 FR, DynaLastic 250 FR, DynaLastic 250 FR CR, DynaMax FR, DynaGlas, DynaPly T1, DynaLastic 180 S or DynaLastic 250 S fully adhered with MBR Cold Application Adhesive or MBR Bonding Adhesive at an application rate of 1.5 – 2.0 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
Or,
One ply of DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

Maximum Design Pressure: -82.5 psf. (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel. See Steel Deck System Limitation #2. (On last page of NOA)

System Type D(1): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.3" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Fesco Board Minimum 3/4" thick	N/A	N/A
Retro-Fit Board Minimum 1/2" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck, DensDeck Prime, JM SECUROCK Gypsum-Fiber Roof Board, InvinSA Roof Board Minimum 1/4" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One or two plies of PermaPly 28, GlasBase, GlasBase Plus, DynaBase, DynaBase XT or Ventsulation fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with JM UltraFast screws and Plates at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 18" o.c.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -45 psf. (See general limitation #9).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with Tek 5 screws. Side laps attached with Tek 1 screws, 24" o.c.

System Type D(2): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base and/or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional if using 2" base layer)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Retro-Fit Board Minimum ½" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S or DynaLastic 250 S fastened to the deck as described below:

Fastening: Fasten base sheet within the 5-inch wide laps using JM High Load Fasteners and Plates spaced 12" o.c. The lap is heat welded.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT or DynaPly T1 adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

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

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B WR, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with Tek/5 screws. Side laps attached with Tek/1 screws, 12" o.c.

System Type D(3): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Fesco Board, Fiber Glass Minimum ¾" thick	N/A	N/A
Retro-Fit Board Minimum ½" thick	N/A	N/A
Top Insulation Layer (Optional):	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck, DensDeck Prime, JM SECUROCK Gypsum-Fiber Roof Board, Invinsa Roof Board Minimum ¼" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: PermaPly 28 fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with JM UltraFast screws and UltraFast Metal Plates at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 12" o.c.

Ply Sheet: One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaFast 180 S, DynaLastic 250 S, DynaBase, DynaBase PR, DynaBase XT, DynaMax S or DynaPly T1 adhered to the base sheet with approved mopping of asphalt or OC Trumbull PermaMop applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.



Membrane: One or more plies of DynaGlas FR CR, DynaKap T1, DynaKap FR T1, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250 FR, DynaLastic 250 FR CR or DynaPly T1 adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Or

(Only with a modified Base or Ply sheet) GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

1. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
2. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(4): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RetroFit Board Minimum 1/2" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet over the 4-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c.

Ply Sheet: DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(5): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RetroFit Board		
Minimum 1/2" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet within the 5-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.

Ply Sheet: (Optional) DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld 250, DynaWeld 250 FR or DynaWeld 250 FR CR heat welded.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(6): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Board Minimum 3/4" thick	N/A	N/A
Middle Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENERGY 3, ENERGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENERGY 3 AGF, ENERGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENERGY 3 CGF, ENERGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENERGY 3 FR, ENERGY 3 FR 25 PSI Minimum 1" thick		
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 5/8" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet within the 5-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.

Ply Sheet: (Optional) DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(7): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RetroFit Board		
Minimum 1/2" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet within the 5-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.

Ply Sheet: (Optional) DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld 250, DynaWeld 250 FR or DynaWeld 250 FR CR heat welded.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(8): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Board Minimum 3/4" thick	N/A	N/A
Middle Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 5/8" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet over the 4-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c.

Ply Sheet: DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld 250, DynaWeld 250 FR or DynaWeld 250 FR CR heat welded.

Maximum Design Pressure: -150 psf. (See General Limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(9): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RetroFit Board		
Minimum 1/2" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet over the 4-inch wide laps using JM High Load Fasteners and Plates spaced 6" o.c.

Ply Sheet: DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld 250, DynaWeld 250 FR or DynaWeld 250 FR CR heat welded.

Maximum Design Pressure: -150 psf. (See General Limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and 3/4" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

System Type D(10): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Fesco Board Minimum 3/4" thick	N/A	N/A
DensDeck, DensDeck Prime, JM SECUROCK Gypsum-Fiber Roof Board Minimum 1/2" thick	N/A	N/A
Middle Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1" thick		
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 5/8" thick	N/A	N/A

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft. board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet over the 4-inch wide laps using JM High Load Fasteners and Plates spaced 12" o.c. and in three, equally spaced, staggered rows in the field of the sheet at 12" o.c.

Ply Sheet: DynaWeld Base, DynaBase HW, DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Membrane: DynaWeld Cap FR CR, DynaWeld Cap FR, DynaWeld Cap 180 FR, DynaWeld 250, DynaWeld 250 FR or DynaWeld 250 FR CR heat welded.

Maximum Design Pressure: -195 psf. (See General Limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with Traxx/5 screws. Side laps attached with Traxx/1 screws, 24" o.c.

System Type D(11): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RetroFit Roof Board Minimum 0.5" 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. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Base Sheet: One ply of DynaLastic 180 S fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load fasteners and APB Plates, High Load Plates, minimum 4" side lap at 12" o.c. Side laps are heat welded.

Ply Sheet: DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining 4" side lap

Cap Sheet: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR torch adhered with minimum 4" wide laps.

Maximum Design Pressure: -67.5 psf. (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Grade 33 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with Traxx/5 screws. Side laps attached with Traxx/1 screws, 24" o.c.

System Type D(12): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 2.0" thick	N/A	N/A

Note: Insulation shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of five fasteners for any insulation board having no dimension greater than 8 ft. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of DynaLastic 180 S fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load fasteners and APB Plates, High Load Plates, minimum 4" side lap at 12" o.c. Side laps are heat welded.

Ply Sheet: DynaWeld 180 S, DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining 4" side lap

Cap Sheet: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR torch adhered with minimum 4" wide laps.

Maximum Design Pressure: -67.5 psf. (See general limitation #7).



Membrane Type: SBS
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel. See Steel Deck System Limitation #2. (On last page of NOA)
System Type D(13): All layers of insulation simultaneously mechanically fastened with base sheet.
All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 2" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load fasteners and APB Plates or High Load Plates, minimum 4" side lap at 18" o.c. Side laps are heat welded.

Ply Sheet: (Optional) One or more plies of DynaFast 180S, DynaLastic 250 S or DynaPly T1 adhered to the base sheet with MBR Low VOC Membrane Adhesive applied at an application rate of 2 – 2.5 gal./sq. or MBR Cold Application Adhesive applied at an application rate of 1.5 – 2.0 gal./sq., or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
 Or,
 One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Cap Sheet: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR fully adhered with MBR Low VOC Membrane Adhesive adhered at an application rate of 2 – 2.5 gal./sq., or MBR Cold Application Adhesive adhered at an application rate of 1.5 – 2 gal./sq. or with approved mopping asphalt at an application rate of 20-40 lbs./sq.
 Or,
 One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

Maximum Design Pressure: -45 psf. (See general limitation #9).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel. See Steel Deck System Limitation #2. (On last page of NOA)

System Type D(14): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 2” thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S, DynaFast 180 HW or DynaFast 250 HW fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load fasteners and APB Plates or High Load Plates minimum 4” side lap at 18” o.c. Side laps are heat welded.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded.

Cap Sheet: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4” side laps and 6” end laps.

Maximum Design Pressure: -45 psf. (See general limitation #9).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Minimum 22 ga. Type B, Grade 80 steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with two (2) Tek/5 screws with 5/8" washers. Side laps attached with Tek/1 screws, 24" o.c.

System Type D(15): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load fasteners and High Load Plates at a minimum 4" side lap at 6" o.c. Side laps are heat welded.

Ply Sheet: (Optional) One or more plies of DynaFast 180 S, DynaPly T1 or DynaLastic 250 S adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq.

Cap Sheet: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq. while maintaining 4" side laps and 6" end laps.

Maximum Design Pressure: -105 psf. (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8" diameter puddle welds 6" o.c. along each intermediate support.

System Type D(16): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 HW, DynaFast 180 S, or DynaFast 250 HW mechanically fastened through the insulation with High Load Fastener and APB Plate or High Load Plate, spaced 6" o.c. in the center of the minimum 4" torch welded side laps.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8" diameter puddle welds 6" o.c. along each intermediate support.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with High Load Fasteners and APB Plates or High Load Plates at a minimum 4" side lap at 6" o.c. Side laps are heat welded.

Ply Sheet: (Optional) One or more plies of DynaFast 180 S, DynaPly T1 or DynaLastic 250 S adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq

Membrane: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq. while maintaining 4" side laps and 6" end laps.

Maximum Design Pressure: -105 psf. (See general limitation #7).



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., min. 80 ksi EF steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with #12-24 x 1-1/4" DP5, HWH SD screws with 3/4" washers.

System Type D(18): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 250 HW mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 6" o.c. in the center of the minimum 4" torch welded side laps.

Ply Sheet: (Optional) One or more plies of DynaFast 250 HW a heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

Maximum Design Pressure: - 165 psf. (See General Limitation #7.)



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8" diameter puddle welds 6" o.c. along each intermediate support.

System Type D(19): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 HW, DynaFast 180 S, or DynaFast 250 HW mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 12" o.c. in the center of the minimum 4" torch welded side laps.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8” diameter puddle welds 6” o.c. along each intermediate support.

System Type D(20): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.5” thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 12" o.c. in the center of the minimum 4" torch welded side laps.

Ply Sheet: (Optional) One or more plies of DynaFast 180 S, DynaPly T1 or DynaLastic 250 S adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq

Membrane: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq. while maintaining 4” side laps and 6” end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8" diameter puddle welds 6" o.c. along each intermediate support.

System Type D(21): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.0" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 HW, DynaFast 180 S, or DynaFast 250 HW mechanically fastened through the insulation with High Load LH Fastener and JM Polymer Membrane Batten, or High Load Fastener and Metal Membrane Batten or Deep Well Batten Bar spaced 6" o.c. in the center of the minimum 4" torch welded side laps in rows maximum 71" o.c.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck with supports having a max.6 ft. span, attached with 5/8" diameter puddle welds 6" o.c. along each intermediate support.

System Type D(22): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.0" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S mechanically fastened through the insulation with High Load LH Fastener and JM Polymer Membrane Batten, or High Load Fastener and Metal Membrane Batten or Deep Well Batten Bar spaced 6" o.c. in the center of the 4" torch welded side laps in rows maximum 71" o.c.

Ply Sheet: (Optional) One or more plies of DynaFast 180 S, DynaPly T1 or DynaLastic 250 S adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq

Membrane: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq. while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., EF-Deck (min. 80 ksi) steel deck with maximum 6 ft. spans. Deck secured to structure at every rib (6" o.c.) with #12-24 x 1-1/4" DP5, HWH SD screws with 3/4" washers.

System Type D(23): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.0" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 HW, DynaFast 180 S, or DynaFast 250 HW mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 6" o.c. in the center of the minimum 4" torch welded side laps.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck attached to with maximum 6ft spans. Deck secured to structure at every rib (6" o.c.) with #12-24 x 1-1/4" DP5, HWH SD screws with 3/4" washers. Side laps are secured with 1/4" – 14 x 7/8" HWH SD screws every 24" o.c.

System Type D(24): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI Minimum 1.0" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S or DynaFast 250 HW mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 6" o.c. in every other lap of the minimum 4" torch welded side laps in rows maximum 70" o.c.

Ply Sheet: (Optional) One or more plies of DynaFast 180 HW, DynaWeld 250 S or DynaFast 250 HW heat welded while maintaining minimum 4" side laps and 6" end laps.

Membrane: One ply of DynaWeld Cap FR, DynaWeld Cap FR CR, DynaWeld Cap 180 FR, DynaWeld Cap 250, DynaWeld Cap 250 FR or DynaWeld Cap 250 FR CR heat welded while maintaining 4" side laps and 6" end laps.

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



Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: Min. 22 ga., Type B (min. 33 ksi) steel deck attached maximum 6ft spans. Deck secured to structure at every rib (6" o.c.) with #12-24 x 1-1/4" DP5, HWH SD screws with 3/4" washers. Side laps are secured with 1/4" - 14 x 7/8" HWH SD screws every 24" o.c.

System Type D(25): All layers of insulation simultaneously mechanically fastened with base sheet

All General and System Limitations apply.

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, ENRGY 3 25 PSI, ValuTherm, ValuTherm 25 PSI, R-Panel, R-Panel 25 PSI, ENRGY 3 AGF, ENRGY 3 AGF 25 PSI, ValuTherm AGF, ValuTherm AGF 25 PSI, ENRGY 3 CGF, ENRGY 3 CGF 25 PSI, ValuTherm CGF, ValuTherm CGF 25 PSI, ENRGY 3 FR, ENRGY 3 FR 25 PSI		
Minimum 1.0" thick	N/A	N/A

Note: Insulation shall be loose-laid and membrane mechanically fastened. See base sheet attachment below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Base Sheet: One ply of DynaFast 180 S mechanically fastened through the insulation with High Load Fastener and High Load Plate spaced 6" o.c. in every other lap of the minimum 4" torch welded side laps in rows maximum 70" o.c.

Ply Sheet: (Optional) One or more plies of DynaFast 180 S, DynaPly T1 or DynaLastic 250 S adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq

Membrane: One ply of DynaGlas FR, DynaLastic 180, DynaLastic 180 FR, DynaGlas FR XT, DynaKap FR T1, DynaMax FR, DynaLastic 250 FR or DynaLastic 250 FR CR adhered in MBR Cold Application Adhesive at a rate of 1.5-2 gal./sq. or approved asphalt with the EVT range at a rate of 20-40 lbs./sq. while maintaining 4" side laps and 6" end laps.

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



STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS117; calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. 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.: 13-0529.18
Expiration Date: 07/19/16
Approval Date: 10/22/15
Page 70 of 70