



MIAMI-DADE
BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

W.P. Hickman Systems, Inc.
30700 Solon Industrial Parkway
Solon, OH 44139

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by the BCCO and accepted by the Building Code and Product Review Committee 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 BCCO (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. BCCO reserves the right to revoke this acceptance, if it is determined by BCCO 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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: W.P. Hickman Conventional Built-Up-Roof Systems Over Concrete Decks

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

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

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

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

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

This NOA revises NOA No. 03-0611.12 and consists of pages 1 through 44.
 The submitted documentation was reviewed by Jorge L. Acebo



NOA No.: 05-0921.19
Expiration Date: 08/01/08
Approval Date: 03/02/06
Page 1 of 44

ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Built-Up Roofing
Material: Fiberglass
Deck Type: Concrete
Maximum Design Pressure -237 psf
Fire Classification: See General Limitation #1

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>
ElastoShield	5, 55 gallons	ASTM D 1227 Type III	A polymer modified, asbestos free asphalt roofing emulsion.
HK Aluminum Shield	5, 55 gallons	ASTM D 1227 Type I	Asphalt based, asbestos free non-fibered aluminum coating.
HK Aluminum Shield Fibrated	5, 55 gallons	ASTM D 2824 Type III	Asphalt based, asbestos free aluminized coating.
HK ReCoat	5, 55 gallons	ASTM D 1227 Type III	An asphalt clay, asbestos free roofing emulsion.
BUR Plus™ 101	100 lb. kegs	ASTM D 312	Approved, Type III asphalt.
BUR Plus™ 102	100 lb. kegs	ASTM D 312	Approved, Type III asphalt.
BUR Plus™ 202	40 lb. boxes	ASTM D 412	Approved polymer modified asphalt.
BUR Plus™ 202A	42 lb. boxes	ASTM D 412	Approved polymer modified asphalt.
BUR Plus™ 303	40 lb. boxes	ASTM D 412	Approved modified SEBS asphalt.
BUR Plus™ 505	50 lb. boxes	ASTM D 450	Approved, modified coal tar pitch adhesive.
BUR Plus™ 606	42 lb. boxes	Proprietary	Approved polymer modified asphalt.
HK Tar Plus	200 lb. kegs	ASTM D 450	Approved coal tar pitch.
Multi-Ply Adhesive	5, 55 gallon	Proprietary	Asphalt based, asbestos free SEBS adhesive.



Pika Ply Adhesive	5, 55 gallon	Proprietary	Asphalt based, asbestos free SBS adhesive.
Hickman Base Sheet Adhesive	5, 55 gallon	Proprietary	Asphalt/Urethane moisture-cure adhesive.
HK Tarred Felt	39.5" x 333'	ASTM D 2626	Organic roofing felt saturated with coal tar.
HK Tarred Glass	39.5" x 333'	ASTM D 4990	Fiberglass sheet impregnated with coal tar.
BUR Plus™ Polyester Ply	39.5" x 333'	Proprietary	A 170 gram/m ² uncoated polyester ply sheet.
BUR Plus™ Polyester Ply 200	39.5" x 333'	Proprietary	A 200 gram/m ² uncoated polyester ply sheet.
BUR Plus™ Polyester Ply 250	39.5" x 333'	Proprietary	A 250 gram/m ² uncoated polyester ply sheet.
Multi-Ply Glass CL	36" x 72';	ASTM D 4601	Tri-laminated polyester/glass/polyester mat coated with asphalt.
Multi-Ply Glass	36" x 108'	ASTM D 4601	Fiberglass sheet coated with asphalt.
HK Glass Ply	36" x 180'	ASTM D 2178 Type IV	Type IV fiberglass base and/or ply sheet.
Premium Ply	36" x 180'	ASTM D 2178 Type VI	Type VI fiberglass ply sheet.
Performance Ply	39.5" x 72'	Proprietary	Polyester reinforced asphalt saturated ply sheet.
Pika Ply Supreme FR	39" x 32.8'	ASTM D 5147	SBS/SIS/ES/SEBS, composite reinforced, granule surfaced cap sheet.
Pika Ply Supreme FR (HR)	39" x 32.8'	ASTM D 5147	SEB/SIS/ES/SEBS, composite reinforced, highly reflective granule surfaced cap sheet.
Pika Ply Supreme FR (TG)	39" x 32.8'	ASTM D 5147	SEB/SIS/ES/SEBS, composite reinforced, granule surfaced heat welded cap sheet.
Pika Ply Supreme FR Smooth	39" x 32.8'	ASTM D 5147	SBS/SIS/ES/SEBS, composite reinforced, smooth surfaced ply or cap sheet.
Pika Ply HI-TEC 60	39" x 67'	ASTM D 5147	Fiberglass/polyester reinforced asphalt saturated base/ply sheet.



Pika Ply HI-TEC 60 Type II	39" x 67'	ASTM D 5147	Fiberglass/polyester reinforced asphalt saturated base/ply sheet.
Pika Ply HI-TEC 80	39" x 49'	ASTM D5147	SBS, composite reinforced, smooth surface ply or cap sheet.
Pika Ply HI-TEC Granule	39" x 32.8'	ASTM D5147	SBS, composite reinforced, granule surfaced cap sheet.
Arrowglas IV	36" x 180'	ASTM D 2178 Type IV	Type IV fiberglass base and/or ply sheet.
Arrowbase	36" x 108'	ASTM D 4601	Fiberglass sheet coated with asphalt.
Modified Arrowbase	36" x 72'	ASTM D 4601	Tri-laminated polyester/glass/polyester mat coated with asphalt.
Pika Ply SS-3P	39" x 32.8'	ASTM D 5147	Polyester reinforced, smooth surface ply/cap sheet.
Pika Ply SS-4	39" x 32.8'	ASTM D 5147	Polyester reinforced, smooth surface ply/cap sheet.
Pika Ply 350S	39" x 25'	ASTM D 5147	Polyester reinforced, smooth surface cap sheet.
Pika Ply MS-3G	39" x 32.8'	ASTM D 5147	Fiberglass reinforced, fire retardant, granule cap sheet.
Pika Ply 250 GR	39" x 32.8'	ASTM D 5147	Polyester reinforced, fire retardant, granule cap sheet.
Pika Ply MS-4	39" x 32.8'	ASTM D 5147	Polyester reinforced, fire retardant, granule cap sheet.
Performance Ply MS FR	39" x 33'	ASTM D 5147	Polyester reinforced, fire retardant, granule cap sheet.
Performance Ply SS	39" x 35'	ASTM D 5147	Polyester reinforced, smooth surface ply/cap sheet.
Premium Cap Sheet	39" x 32.8'	ASTM D 5147	Fiberglass reinforced, granule cap sheet.



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Whiteline	Polyisocyanurate foam insulation	Apache Products Co.
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ConPearl	Expanded perlite mineral fiber	Conglas
Esgard Fiberboard	Wood fiber board	EMCO Ltd.
BP High Strength Fiberboard	High Density Wood fiber Board	EMCO Ltd.
ISO 95+, GL	Polyisocyanurate foam insulation	Firestone Building Products, Inc.
GAF Permalite	Expanded mineral fiber	GAF Mat'l. Corp.
GAF Fiberboard	Wood fiber board	GAF Mat'l. Corp.
GAFTEMP High Density Fiberboard	High density wood fiberboard insulation.	GAF Mat'l. Corp.
Wood Fiberboard	Regular wood fiber insulation	Generic
High Density Wood Fiberboard	High Density Wood fiber Board	generic
Perlite Insulation	Perlite insulation board	generic
Dens Deck	Silicon treated gypsum	G-P Products
Sturdi-Top	Wood fiber insulation board.	G-P Products
Hubert Fiberboard	Wood fiber board	Huebert Fiberboard, Inc.
ENRGY-2, ENRGY-2, Plus, UltraGard Gold, PSI-25	Polyisocyanurate foam insulation	Johns Manville
FiberGlass Roof Insulation	Glass fiber/Mineral fiber insulation	Johns Manville
Fesco Board	Expanded mineral fiber insulation	Johns Manville
Retro-Fit Board	A high-density perlite roof insulation.	Johns Manville
ISORoc	Polyisocyanurate foam / rockwool composite insulation	Johns Manville
Structodek, Structodek FS	High Density Wood Fiber insulation board.	Masonite
Paroc Cap Board	Rockwool insulation	Partek, Inc.
Multi-Max, FA	Polyisocyanurate foam insulation	Rmax, Inc.
Fiber Base	Asphalt coated wood fiber insulation	Temple Inland Forest Products Corp.



APPROVED FASTENERS:

TABLE 3

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1. #14 Dekfast Fastener	Insulation fastener		Construction Fasteners, Inc.
2. Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	Construction Fasteners, Inc.
3. Dekfast Lock Plate	Polypropylenel plate	3" x 3 1/4"	Construction Fasteners, Inc.
4. #14 Roofgrip Fasteners	Insulation fastener for wood and steel.		ITW Buildex Corp.
5. AccuTrac Hextra Fasteners	Insulation fastener for wood, steel and concrete.		ITW Buildex Corp.
6. Metal Plate	Galvalume stress plate.	3" round 3" square	ITW Buildex Corp.
7. Gearlok Plastic Plate	Polypropylene round plate	3.2"	ITW Buildex Corp.
8. UltraFast	Insulation fastener for wood, steel and concrete.		Johns Manville
9. UltraFast Metal Plate	Galvalume AZ55 steel plate	3" square & 3" round	Johns Manville
10. UltraFast Plastic Plate	High Density Polyolefin round plate	3" round	Johns Manville
11. Olympic Fastener #14	Insulation fastener		Olympic Mfg. Group, Inc.
12. Fluted Nail (Con-Tite)	Insulation fastener		Olympic Mfg. Group, Inc.
13. Olympic Standard	Galvalume AZ50 steel plate	3" round	Olympic Mfg. Group, Inc.
14. Olympic	Polypropylene round plate	3" round	Olympic Mfg. Group, Inc.
15. Olympic G-2	Galvalume AZ55steel plate	3.5" round	Olympic Mfg. Group, Inc.
16. Rawl Drive/Spike	Insulation fastener for concrete decks		Powers Fasteners, Inc.



APPROVED FASTENERS:**TABLE 3**

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
17. Rawl Plate	Galvalume AZ55 steel plate	3" round	Powers Fasteners, Inc.
18. Insul-Fixx Fastener	Insulation fastener for wood, steel and concrete.		SFS Stadler, Inc.
19. Insul-Fixx S Plate	Galvalume AZ50 steel plate	3" round	SFS Stadler, Inc.
20. Insul-Fixx P Plate	Polyethylene plastic plate	3" round	SFS Stadler, Inc.
21. Tru-Fast Fasteners	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
22. Tru-Fast MP-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
23. Tru-Fast Plates	Galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
24. Tru-Fast Plates	Polyethylene plastic plate	3" round	The Tru-Fast Corp.



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Factory Mutual	FMRC 4470	J.I. 1V9A3.AM	11/07/92
	FMRC 4470	J.I. 0W7A4.AM	02/09/93
	FMRC 4470	J.I. 0X2A0.AM	03/30/93
	FMRC 4470	J.I. 0P3A6.AM	01/15/88
	FMRC 4470	J.I. 1R4A2.AM	03/14/90
	FMRC 4470	J.I. 1R6A2.AM	04/21/91
	FMRC 4470	J.I. 1T7A2.AM	02/28/92
	FMRC 4470	J.I. 1T7A1.AM	01/10/92
	FMRC 4470	J.I. 0X0A9.AM	03/25/94
	FMRC 4470	J.I. 0W6A2.AM	02/05/93
	FMRC 4470	J.I. 0X7A4.AM	08/26/93
	FMRC 4470	J.I. 3Y4A1.AM	09/20/95
	FMRC 4470	J.I. 4D9A5.AM	01/15/99
	FMRC 4470	J.I. 1D7A4.AM	11/09/98
	FM 4470	3017068	03/24/05
	FM 4470	3020937	06/22/05
	Warnock Hersey	ASTM E 108	495-R-0344
ASTM E 108		495-R-0400	01/01/90
ASTM E 108		495-R-0430	01/01/90
ASTM E 108		495-R-0447	01/01/90
ASTM E 108		495-R-0526	01/01/90
ASTM E 108		495-R-0400A	01/01/90
Exterior Research & Design, LLC	TAS 114(J)	#4473.10.97-1	11/17/97



APPROVED ASSEMBLIES:

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved asphalt.

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
ACFoam II, ENRGY-2, ENRGY-2 Plus, ISOroc, Multi-Max Minimum 1" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, GAFTEMP High Density, High Density Wood Fiberboard, Sturdi-Top, Fiber Base HD1, HD6, Structodeck, Esgard, Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum 1/2" thick	N/A	N/A
ConPerl, GAFTEMP Permalite, FescoBoard, Perlite Minimum 3/4" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL, adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.



Ply Sheet: Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

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



Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(2): One or more layers of insulation adhered with Insta-Stick Roof Adhesive.

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**

ACFoam II, ENRGY-2, Iso+GL

Minimum 1.5" thick

N/A

N/A

Base of Top Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

Sturdi-Top, Structodek, GAFTEMP Recover Board, Retro-Fit Board

Minimum 1/2" thick

N/A

N/A

Note: All insulation shall be adhered to the primed or unprimed deck in Insta-Stick Roofing Adhesive applied in 3/4"-1" wide beads spaced 12" o.c. Insulation is immediately placed over adhesive and walked-in. Please refer to Roofing Application Standard RAS 117 and insulation adhesive manufacturer's Product Control Notice of Acceptance for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet:

(Optional) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL, adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Ply Sheet:

Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

Maximum Design
Pressure:

-90 psf; (See General Limitation #9.)



Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(3): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer (Optional)

ENRGY-2

Minimum 1.5" thick

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

N/A

N/A

Base or Top Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

High Density Wood Fiberboard

Minimum 1/2" thick

N/A

N/A

Dens Deck

Minimum 1/4" thick

N/A

N/A

GAFTEMP Permalite

Minimum 3/4" thick

N/A

N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Ply Sheet: Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

Maximum Design Pressure:

-227 psf; (for minimum ½” thick High Density Wood Fiberboard applied in hot asphalt with or without base insulation.) (See General Limitation #9.)

-237 psf; (for minimum ¼” thick Dens Deck applied in hot asphalt with or base insulation.) (See General Limitation #9.)

-212 psf; (for minimum ¾” thick GAFTEMP Permalite applied in hot asphalt with or without base insulation.) (See General Limitation #9.)



Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(4): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Isoroc Minimum 1.5" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL, adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Ply Sheet: Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

Maximum Design
Pressure:

-167 psf; (See General Limitation #9.)



Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(5): One or more layers of insulation adhered with approved adhesive or asphalt

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
ACFoam II, H-Shield Maximum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
(Optional) DensDeck Prime Maximum 0.25" thick	N/A	N/A

Note: Insulation shall be adhered with an approved asphalt or Hickman BUR Plus 101, 202, 202A or 303 modified asphalt within the EVT range and at a rate of 25 lbs/100 ft² or Olybond 500 Adhesive Fastener applied in 0.75" – 1" wide beads spaced 12" o.c. and walked in. 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 layer of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Hickman Base Sheet Adhesive at a rate of 1.5 gal/sq.

Ply Sheet: One to three plies of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.

Membrane: (Optional, required if system has less than three plies)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR, Pika Ply Supreme FR (HR), Pika Ply SS-3P, Pika Ply SS-4, Pika Ply 350S, Pika Ply MS-3G, Pika Ply 250 GR, Pika Ply MS-4, Performance Ply MS FR, Premium Cap Sheet or Performance Ply SS, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq., or Multi-Ply Adhesive or Pika Ply Adhesive at an application rate of 4-5 gal/sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
6. One coat of Hickman White Roof Coating Base Coat at an application rate of 1.5 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1.5 gal/sq.
7. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq., followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
8. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
9. One coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq., followed by one coat of HK Aluminum Shield at an application rate of 0.25 gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9.)



Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(6): One or more layers of insulation adhered with approved adhesive or asphalt

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
Expanded EPS Maximum 2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Maximum 0.25" thick	N/A	N/A

Note: Insulation shall be adhered with Olybond 500 Adhesive Fastener applied in 0.75" – 1" wide beads spaced 12" o.c. and walked in. 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 layer of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Hickman Base Sheet Adhesive at a rate of 1.5 gal/sq.

Ply Sheet: One to three plies of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.

Membrane: (Optional, required if system has less than three plies)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR, Pika Ply Supreme FR (HR), Pika Ply SS-3P, Pika Ply SS-4, Pika Ply 350S, Pika Ply MS-3G, Pika Ply 250 GR, Pika Ply MS-4, Performance Ply MS FR, Premium Cap Sheet or Performance Ply SS, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq., or Multi-Ply Adhesive or Pika Ply Adhesive at an application rate of 4-5 gal/sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
6. One coat of Hickman White Roof Coating Base Coat at an application rate of 1.5 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1.5 gal/sq.
7. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq., followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
8. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
9. One coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq., followed by one coat of HK Aluminum Shield at an application rate of 0.25 gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9.)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type B: Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

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
Whiteline, UltraGard Gold Minimum 1.3" thick	1, 8, 11, 12, 18 or 21	1:2.7 ft²
ENRGY-2, Iso 95+ Minimum 1.4" thick	1, 11, 12 or 16	1:4 ft²
Isoroc Minimum 1.5" thick	1, 11, 12 or 16	1:2.7 ft²
Multi-Max Minimum 1.5" thick	1, 11, 12, 18 or 21	1:2.9 ft²
ENRGY 2 Plus Minimum 1.5" thick	1, 9, 11, 12, 18 or 21	1:4 ft²
Fiberglas Minimum 1⁵/₁₆" thick	1, 5, 8, 11, 12, 18 or 21	1:2.67 ft²
ConPerl, GAFTEMP Permalite, FescoBoard Perlite Minimum 3/4" thick	1	1:2 ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, High Density Wood Fiberboard, Sturdi-Top, Fiber Base HD1, HD6, Structodeck, Esgard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum 1/2" thick	1, 5, 11, 12 or 21	1:4 ft²

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

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, High Density Wood Fiberboard, Sturdi-Top, Fiber Base HD1, HD6, Structodeck, Esgard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum 1/2" thick	N/A	N/A
ConPerl, GAFTEMP Permalite, FescoBoard Perlite, Paroc Cap Board Minimum 3/4" thick	N/A	N/A
Fiberglass Roof Insulation Minimum 1⁵/₁₆" thick	N/A	N/A



Note: Optional 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) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Ply Sheet: Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

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



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type B(1): Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt or adhesive.

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/ft ²
AC Foam II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation Minimum 1.5" thick	11, 21	1:2 ft ²
AC Foam II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation, ENRGY3 Minimum 2" thick	11,21	1:4 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements set forth in applicable Building Code. (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ConPerl,GAFTEMP Permalite, Permalite, Fesco Board Minimum 0.75" thick	N/A	N/A

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt or BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.



Ply Sheet: (Optional, required if no base sheet used)
One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Membrane: (Optional, required if less than three plies used)
One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.
Or
One ply of Pika Ply Supreme FR (TG), heat welded.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design Pressure: -45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(1): All layers of insulation simultaneously attached.

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
ACFoam II, H-Shield Minimum 1.0" thick (Maximum 1.0" thick for Steel Deck)	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Minimum 0.5" thick	1, 11, 21	1:1.6 ft²

Note: Top layer of insulation shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastener details). Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One layer of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Hickman Base Sheet Adhesive at a rate of 1.5 gal/sq.

Ply Sheet: One to three plies of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.

Membrane: (Optional, required if system has less than three plies)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR, Pika Ply Supreme FR (HR), Pika Ply SS-3P, Pika Ply SS-4, Pika Ply 350S, Pika Ply MS-3G, Pika Ply 250 GR, Pika Ply MS-4, Performance Ply MS FR, Premium Cap Sheet or Performance Ply SS, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq., or Multi-Ply Adhesive or Pika Ply Adhesive at an application rate of 4-5 gal/sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
6. One coat of Hickman White Roof Coating Base Coat at an application rate of 1.5 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1.5 gal/sq.
7. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq., followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
8. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
9. One coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq., followed by one coat of HK Aluminum Shield at an application rate of 0.25 gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #7.)



Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(2): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Thermal Barrier: Min. 0.5" thick DensDeck, loose laid.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Expanded or Extruded EPS (min. 1.0 pcf density) Minimum 1.0" thick – Maximum 4.0" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Minimum 0.5" thick	1, 11, 21	1:1.6 ft²

Note: Top layer of insulation shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastener details). Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One layer of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Hickman Base Sheet Adhesive at a rate of 1.5 gal/sq.

Ply Sheet: One to three plies of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.

Membrane: (Optional, required if system has less than three plies)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR, Pika Ply Supreme FR (HR), Pika Ply SS-3P, Pika Ply SS-4, Pika Ply 350S, Pika Ply MS-3G, Pika Ply 250 GR, Pika Ply MS-4, Performance Ply MS FR, Premium Cap Sheet or Performance Ply SS, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq., or Multi-Ply Adhesive or Pika Ply Adhesive at an application rate of 4-5 gal/sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
6. One coat of Hickman White Roof Coating Base Coat at an application rate of 1.5 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1.5 gal/sq.
7. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq., followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
8. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
9. One coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq., followed by one coat of HK Aluminum Shield at an application rate of 0.25 gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #7.)



Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(3): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Thermal Barrier: Min. 0.5" thick DensDeck, loose laid.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
(Optional) ACFoam II, H-Shield Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam II, H-Shield Minimum 1.5" thick	1, 11, 21	1:2.6 ft²
ACFoam II, H-Shield Minimum 2" thick	1, 11, 21	1:4 ft²

Note: Top layer of insulation shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastener details). Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One layer of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Hickman Base Sheet Adhesive at a rate of 1.5 gal/sq.

Ply Sheet: One to three plies of Multi Ply Glass, Multi Ply Glass CL, Performance Ply, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, Arrowbase or Modified Arrowbase, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.

Membrane: (Optional, required if system has less than three plies)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR, Pika Ply Supreme FR (HR), Pika Ply SS-3P, Pika Ply SS-4, Pika Ply 350S, Pika Ply MS-3G, Pika Ply 250 GR, Pika Ply MS-4, Performance Ply MS FR, Premium Cap Sheet or Performance Ply SS, adhered in Multi-Ply Adhesive at a rate of 2.5-3 gal/sq. or Pika Ply Adhesive at a rate of 1.5 gal/sq.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq., or Multi-Ply Adhesive or Pika Ply Adhesive at an application rate of 4-5 gal/sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
6. One coat of Hickman White Roof Coating Base Coat at an application rate of 1.5 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1.5 gal/sq.
7. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq., followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
8. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
9. One coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq., followed by one coat of HK Aluminum Shield at an application rate of 0.25 gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9.)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(4): All layers of insulation simultaneously attached.

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
AC Foam II		
Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ConPearl, GAFTEMP Permalite, Permalite, Fesco Board		
Minimum 1" thick	1, 11, 21	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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.



Membrane: (Optional, required if less than three plies used)
One ply of Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.
Or
One ply of Pika Ply Supreme FR (TG), heat welded.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design Pressure: -45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(5): All layers of insulation simultaneously attached.

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
AC Foam II Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Structodek High Density Fiberboard, GAFTEMP High Density Fiberboard Minimum 0.5" thick	11	1:3 ft ²
Structodek, Roof Insulating Board, Fiber Base HD1, HD6 Minimum 0.5" thick	1, 11, 21	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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.



Membrane: (Optional, required if less than three plies used)
One ply of Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.
Or
One ply of Pika Ply Supreme FR (TG), heat welded.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design Pressure: -45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(6): All layers of insulation simultaneously attached.

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
AC Foam II Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Standard Fiberglas Roof Insulation, FiberGlass Roof Insulation, Wide Flute Fiberglas Roof Insulation, Fiber Glass Roof Insulation (Wide Flute) Minimum 0.5" thick	1, 11, 21	1:3 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.



Membrane:

(Optional, required if less than three plies used)

One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Or

One ply of Pika Ply Supreme FR (TG), heat welded.

Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design

Pressure:

-45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(7): All layers of insulation simultaneously attached.

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
AC Foam II Minimum 2" thick	11, 21	1:4 ft²

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Structodeck High Density Fiberboard, GAFTEMP High Density Fiberboard Minimum 0.5" thick	11	1:3 ft²
Structodeck, Roof Insulating Board, Fber Base HD1, HD6 Minimum 0.5" thick	N/A	N/A

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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top layer of insulation may 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)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.



Membrane:

(Optional, required if less than three plies used)

One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Or

One ply of Pika Ply Supreme FR (TG), heat welded.

Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an application rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design

Pressure:

-45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(5): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ConPearl, GAFTEMP Permalite, Permalite, Fesco Board Minimum 1" thick	1, 11, 21	1:2 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Membrane: (Optional, required if less than three plies used)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.
 Or
 One ply of Pika Ply Supreme FR (TG), heat welded.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an appliciton rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

**Maximum Design
Pressure:**

-45.0 psf (See General Limitation #9)



Deck Type 3I: Concrete Decks, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(6): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Standard or Standard Fiberglas Roof Insulation, Wide Flute Fiberglas Roof Insulation, Fiber Glass Roof Insulation (Wide Flute), Fiber Glass Roof Insulation Minimum 15/16" thick	1, 11, 21	1:3 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional)
 One layer of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Ply Sheet: (Optional, required if no base sheet used)
 One or more plies of Pika Ply HI-TEC 80, Pika Ply HI-TEC 60, Pika Ply HI-TEC 60 Type II, HK Glass Ply IV, Arrowglas IV, Premium Ply, Arrowglas VI, Performance Ply, BUR Plus Polyester Ply, BUR Plus Polyester Ply 200, BUR Plus Polyester Ply 250, Multi-Ply Glass or Multi-Ply Glass CL, adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.

Membrane: (Optional, required if less than three plies used)
 One ply or Pika Ply HI-TEC Granule, Pika Ply HI-TEC 80, Pika Ply Supreme FR Smooth, Pika Ply Supreme FR or Pika Ply Supreme FR (HR), adhered in a full mopping of approved asphalt, BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 applied within the EVT range and at a rate of 25 lbs./sq.
 Or
 One ply of Pika Ply Supreme FR (TG), heat welded.



Surfacing:

(Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs./sq., adhered with Hickman Weatherizer KV at an application rate of 3-4 gal./sq.
3. Gravel at 400 lbs./sq., adhered with Tarshield WB at an application rate of 4-5 gal./sq.
4. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of Hickman White Roof Coating Base Coat at an application rate of 1 gal/sq. and one coat of Hickman White Roof Coating at an appliciton rate of 1 gal/sq.
5. One coat of Hickman Weatherizer KV at an application rate of 3 gal/sq, followed by one coat of HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
6. HK Aluminum Shield Fibrated at an application rate of 2-2.5 gal/sq.
7. Gravel at 400 lbs/sq., adhered in BUR Plus 101, BUR Plus 102, BUR Plus 202, BUR Plus 202A or BUR Plus 303 at a rate of 60 lbs/sq.
8. Gravel at 400 lbs/sq., adhered in Mul-Ply Adhesive at a rate of 4-5 gal/sq.
9. Gravel at 500 lbs/sq., adhered in BUR Plus 505 at a rate of 70 lbs/sq.
10. Gravel at 500 lbs/sq., adhered in HK Tarshield at a rate of 5-7 gal/sq.

Maximum Design
Pressure:

-45.0 psf (See General Limitation #9)



Deck Type 3: Concrete Decks, Non-Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type F: (Optional) Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of anchor sheet.

Base Sheet: (Optional) One ply of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 4601 base sheet adhered with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL adhered with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, one ply of Performance Ply, Multi-Ply Glass, Multi-Ply Glass CL adhered with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Ply Sheet: Two or more plies of Premium Ply, HK Glass Ply, BUR Plus Polyester Ply, Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, or an approved ASTM D 2178 ply sheet, in any combination, adhered to any of the base sheets noted above with approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, HK Tarred Felt or HK Tarred Glass, in any combination, adhered to Performance Ply, Multi-Ply Glass, or Multi-Ply Glass CL base sheets with BUR Plus 505 or HK Tar Plus at a rate of 20-40 lbs./sq.; or, two or more plies of Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply, in any combination, adhered to Multi-Ply Glass, Multi-Ply Glass CL, Performance Ply or base sheets with Multi-Ply Adhesive at a rate of 2.5 to 3 gal./sq.

Surfacing: (Optional) Install one of the following (review published fire classification listings for applicable installation requirements):

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at a rate of 40 lb./sq. or in a flood coat of BUR Plus 505 or HK Tar Plus at a rate of 75 lbs./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in Multi-Ply Adhesive or Multi-Ply Adhesive SEBS at a rate of 4-5 gal./sq.
3. 60 lbs. of roofing granules embedded in Multi-Ply Adhesive at a rate of 3-4 gal./sq.
4. ElastoShield or HK ReCoat at a rate of 5 gal./sq. followed by HK Aluminum Shield at a rate of 0.75gal./sq.
5. HK Aluminum Shield Fibrated at a rate of 1.5-2.0 gal./sq.

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



CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**

END OF THIS ACCEPTANCE



NOA No.: 05-0921.19
Expiration Date: 08/01/08
Approval Date: 03/02/06
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