

Product Evaluation

RC604 | 0821

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: RC-604

Effective Date: August 1, 2021

Re-evaluation Date: August 2025

Product Name: UltraPly TPO XR and GenFlex EZ Fleece Backed TPO with SBS Modified Roofing Systems

Manufacturer: Firestone Building Products Company, LLC
200 4th Ave. South
Nashville, TN 37201
317-575-7000

General Description:

Products	Specification	Description
Firestone UltraPly TPO XR 100 and GenFlex EZ Fleece Backed TPO (45 mil)	ASTM D 6878 TAS 131	45-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester weft-inserted reinforcement and 8 oz. non-woven polyester fabric backing
Firestone UltraPly TPO XR 115 and GenFlex EZ Fleece Backed TPO (60 mil)	ASTM D 6878 TAS 131	60-mil thick thermoplastic polyolefin, heat-weldable, single-ply roof membrane with polyester weft-inserted reinforcement and 8 oz. non-woven polyester fabric backing

General Description (continued):

Products	Specification	Description
Firestone UltraPly TPO XR 135 and GenFlex EZ Fleece Backed TPO (80 mil)	ASTM D 6878 TAS 131	80-mil thick thermoplastic polyolefin, heat-weldable, single ply roof membrane with polyester weft-inserted reinforcement and 8 oz. polyester fleece backing

Fastening Systems

Products	Description
Firestone All-Purpose Fasteners	Min.0.75" penetration through the top rib of the steel deck or wood deck
Firestone Concrete Drive	Min. 1.25" embedment into min. 3" thick structural concrete
Firestone 1.7" LWC Base-Ply Fastener	Full embedment of shank into substrate
Firestone Heavy Duty Fasteners	Min. 0.75" penetration through the top rib of the steel deck or wood deck. Min. penetration 1" into concrete deck.
Firestone Insulation Fastening Plates	Min. 3" diameter Galvalume® steel plate
Firestone Metal Batten Strip	Min. 1" wide, 0.0448" Galvalume® steel batten

Insulation Adhesives

Products	Description
ASTM D 312, Type IV Asphalt	Fully adhered within the EVT range at a rate of 20-40 lbs./100 ft ²
Firestone I.S.O. Fix II	Partially adhered in 0.75" to 1" wide ribbons
Firestone I.S.O. Stick	Partially adhered in 0.75" to 1" wide ribbons
Firestone I.S.O. Twin Pack Insulation Adhesive	Partially adhered in 0.5" to 0.75" wide ribbons
Firestone I.S.O. Spray R	Partially adhered in 0.75" to 1" wide ribbons
Firestone Twin Jet	Partially adhered in 1" to 1.25" wide ribbons

Membrane Adhesives

Products	Description
ASTM D 312, Type IV Asphalt	Fully adhered within the EVT range at a rate of 25-40 lbs./100 ft ²
Firestone I.S.O. Spray R	Partially adhered in 0.75" to 1" wide ribbons
Firestone XR Stick	Partially adhered in 0.75" to 1" wide ribbons
Owens Corning PermaMop Asphalt	Fully adhered within the EVT range at a rate of 25-40 lbs./100 ft ²
Twin Jet	Partially adhered in 0.75" to 1" wide ribbons

Insulation and Cover Boards:

Products	Description
Georgia-Pacific DensDeck	Min. 0.25" thick; Adhered boards shall be a maximum 4 ft x 4 ft
Georgia-Pacific DensDeck Prime	
Firestone ISO 95+ GL or GenFlex ISO Insulation	Min. 0.5" thick; Min. 20 psi; Adhered boards shall be a maximum 4 ft x 4 ft
Firestone Tapered ISO 95+ GL or GenFlex ISO Insulation tapered	0.5" to start with 0.25" per ft taper; Adhered boards shall be a maximum 4 ft x 4 ft
Firestone ISO GARD HD or GenFlex HD ISO	Min. 0.5" thick; Adhered boards shall be a maximum 4 ft x 4 ft

Insulation and Cover Boards (continued):

Products	Description
Firestone ISOGARD HD Composite or GenFlex HD ISO Composite	Min. 1.5" thick; Adhered boards shall be a maximum 4 ft x 4 ft
Firestone RESISTA or Coated Glass Facer	Min. 0.5" thick; Min. 20 psi; Adhered boards shall be a maximum 4 ft x 4 ft
Structodek High Density Fiberboard	Min. 0.5" thick; Adhered boards shall be a maximum 4 ft x 4 ft
USG SECUROCK Gypsum-Fiber Roof Board	Min. 0.25" thick; Adhered boards shall be a maximum 4 ft x 4 ft
USG SECUROCK Glass-Mat Roof Board	

Base/Ply Sheets

Products	Description
MB Base	Min. 2" wide side-laps; Side-laps shall be installed perpendicular to the direction of the steel deck ribs for mechanically attached systems
BASEGARD SA	Min. 3.4" wide side-laps; Min. 6" end laps; Side-laps shall be installed perpendicular to the direction of the steel deck ribs and parallel to the direction of the wood trusses for mechanically attached systems
Channel Venting Base	
SBS Base	
SBS Glass Torch Base	
SBS Glass Torch Base 1.5	
SBS Poly Base	
SBS Poly Torch Base	
SBS Premium Base	
SBS Premium Poly Base	

Vapor Barriers

Products	Descriptions
Firestone V-Force Vapor Barrier Membrane	Self-adhered; Min. 3" side laps; Min. 6" end laps; ; All substrates except metal decks must be primed; Prime surface with Firestone SA-Solvent Based (SB) Primer, Firestone SA-Water Based (WB) Primer or Firestone SA-LVOC Primer at a rate of 0.5 gal/100ft ² ;

Membranes:

Products	Description
UltraPly TPO XR 100 and GenFlex EZ Fleece Backed TPO (45 mil)	Min. 2" wide side-laps with min. 1.5" wide heat weld;
UltraPly TPO XR 115 and GenFlex EZ Fleece Backed TPO (60 mil)	
UltraPly TPO XR 135 and GenFlex EZ Fleece Backed TPO (80 mil)	

Cellular Lightweight Concrete

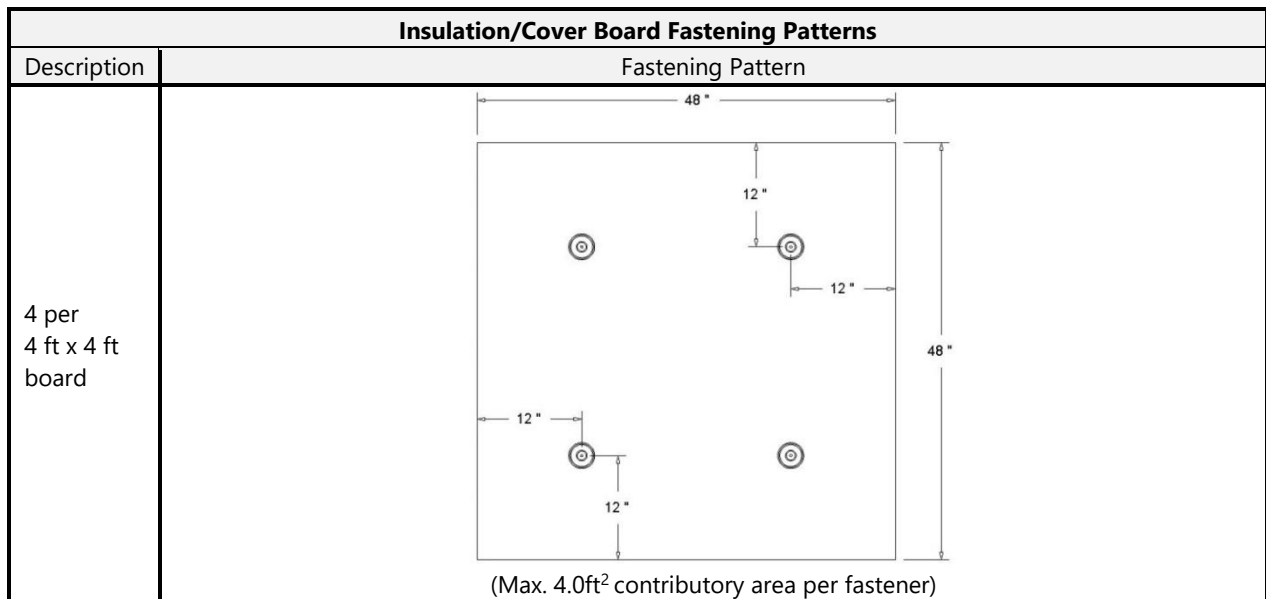
Products	Description
Min. 300 psi Celcore MF with HS Rheology Admixture	Slurry coat min. 1/8" thick; 1" thick EPS board (1 lbs./ft ³); Min. 2" thick top coat; Celcore PVA curing compound applied at rate of 300 ft ² /gal
Celcore S-1	Deck is treated by applying a continuous film with a broom prior to placement of the Celcore lightweight concrete
Min. 300 psi Mearlcrete	Slurry coat min. 1/8" thick; Min. 1" thick EPS board (1 lbs./ft ³); Min. 2" top coat
Min. 300 psi Elastizell	
Min. 300 psi Concrecel	
Min. 200 psi Cellular Lightweight Concrete	

Limitations:

General installation Requirements:

All IRC and IBC requirements must be satisfied and the manufacturer's installation instructions followed, unless otherwise specified by this product evaluation.

Roof Slope: The roof must have a minimum slope of 1/4:12.



Insulation/Cover Board Fastening Patterns	
Description	Fastening Pattern
<p>8 per 4 ft x 4 ft Board</p>	<p>(Max. 2.0ft² contributory area per fastener)</p>
<p>5 per 4 ft x 8 ft board</p>	<p>(Max. 6.4ft² contributory area per fastener)</p>
<p>12 per 4 ft x 8 ft board</p>	<p>(Max. 2.67ft² contributory area per fastener)</p>

Insulation/Cover Board Fastening Patterns	
Description	Fastening Pattern
15 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 2.13ft² contributory area per fastener)</p>
18 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 1.78ft² contributory area per fastener)</p>
20 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 1.60ft² contributory area per fastener)</p>

Insulation/Cover Board Fastening Patterns	
Description	Fastening Pattern
22 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 1.45ft² contributory area per fastener)</p>
24 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 1.33ft² contributory area per fastener)</p>
32 per 4 ft x 8 ft board	<p style="text-align: center;">(Max. 1.00ft² contributory area per fastener)</p>

Installation:

Name	Definition
System	A – Fully adhered systems B – Adhered base insulation, mechanically fastened top insulation, adhered membrane C – Mechanically fastened insulation, adhered membrane D – Mechanically fastened membrane
AP Fasteners & Plates	Firestone All-Purpose Fasteners and Insulation Fastening Plates
As Tested	Information provided to the report user based on the as tested condition of the roof system
BASEGARD	One ply of BASEGARD SA. Shall only be used with ply applied in hot asphalt or by torch or UltraPly TPO XR membrane applied in hot asphalt only.
CD Fasteners & Plates	Firestone Concrete Drive and Insulation Fastening Plates
Cover Board	One layer of any of the following products: -Georgia-Pacific DensDeck -Georgia-Pacific DensDeck Prime -Firestone ISOGARD HD -USG SECUROCK Glass-Mat Roof Board -USG SECUROCK Gypsum-Fiber Roof Board
Deck Detail	<i>As Tested</i> deck construction details are described as follows:
	<i>Concrete Deck</i> Min. $f'_c = 2,500$ psi at 28 days
	<i>CWF Deck</i> Min. 2.5" thick Tectum I cementitious wood fiber panels
	<i>Steel Deck</i> Min. 22-ga, Wide Rib Deck (Type WR) conforming to ANSI/SDI-RD1.0 & FBC; 0.5% Vented for LWIC applications only.
<i>Wood Deck</i> APA Span-Rated plywood sheathing.	
Insulation Adhesive	I.S.O. Twin Pack Adhesive, I.S.O. Stick Insulation Adhesive, Twin Jet, or I.S.O. Fix II Adhesive
Insulation Adhesive II	I.S.O. Twin Pack Adhesive, I.S.O. Stick Insulation Adhesive, Twin Jet, I.S.O. Fix II Adhesive, or Firestone I.S.O. Spray R
LWIC	Poured-in-place Cellular Lightweight Concrete with encapsulated insulation board
MA Base	One ply of Channel Venting Base, MB Base, SBS Base, SBS Glass Torch Base, SBS Glass Torch Base 1.5, SBS Premium Base, SBS Poly Base, SBS Premium Poly Base, SBS Poly Torch Base, or SBS Smooth mechanically attached as prescribed per the approved assembly
MA Base II	One ply of MB Base, SBS Base, SBS Glass Torch Base, SBS Glass Torch Base 1.5, SBS Premium Base, SBS Poly Base, SBS Premium Poly Base, SBS Poly Torch Base, or SBS Smooth mechanically attached as prescribed per the approved assembly
DensDeck	Min. 0.25" Georgia-Pacific DensDeck
DensDeck Prime	Min. 0.25" Georgia-Pacific DensDeck Prime
HA SBS BUR Ply	One or more plies of MB Base, SBS, Base, SBS Poly Base, SBS Premium Poly Base, SBS Premium Base, or SBS Smooth fully bonded in ASTM D 312, Type IV hot asphalt
HA SBS Ply	One or more plies of SBS, Base, SBS Poly Base, SBS Premium Poly Base, SBS Premium Base, or SBS Smooth fully bonded in ASTM D 312, Type IV hot asphalt
HD Fasteners & Plates	Firestone Heavy Duty Fasteners and Insulation Fastening Plates

Name	Definition
Insulation	One of more layers in any combination of: -Georgia-Pacific DensDeck -Georgia-Pacific DensDeck Prime -Firestone ISO 95+ GL -Firestone ISOGARD HD -Firestone ISOGARD HD Composite -Firestone RESISTA -USG SECUROCK Glass-Mat Roof Board -USG SECUROCK Gypsum-Fiber Roof Board
MA Base III	One ply of SBS Base, SBS Glass Torch Base, SBS Glass Torch Base 1.5, SBS Premium Base, SBS Poly Base, SBS Premium Poly Base, SBS Poly Torch Base, or SBS Smooth mechanically attached as prescribed per the approved assembly
MCRF	Minimum Characteristic Resistance Force as determined by TAS 105 for the named fastener in the selected assembly
MDP	Maximum Design Pressure
Preliminarily Secured	Fastened at minimum rate of 5 per 4 ft x 8 ft board or 4 per 4 ft x 4 ft board.
SBS Base Sheet	One ply of SBS Base, SBS Glass Torch Base, SBS Poly Base, SBS Premium Poly Base, SBS Poly Torch Base, SBS Premium Base, or SBS Smooth
SBS TA Vapor Barrier	SBS Glass Torch Base torched adhered over primed concrete deck
SECUROCK	Min. 0.25" USG SECUROCK Gypsum-Fiber Roof Board
TA SBS Ply	One or more plies of SBS Glass Torch Base, SBS Glass Torch Base 1.5 or SBS Poly Torch Base fully bonded by torch adhering
TPO XR HA	One ply of UltraPly TPO XR 100, 115, 135 applied in ASTM D 312, Type IV asphalt or Owens Corning PermaMop asphalt
TPO XR TJ	One ply of UltraPly TPO XR 100, 115, 135 applied in Twin Jet ribbon ribbons spaced max. 6.0" o.c. broomed and rolled with a minimum 80 lb. roller.
TPO XR ISR	One ply of UltraPly TPO XR 100, 115, 135 applied in I.S.O. Spray R spaced max. 12" o.c.
V-Force	One ply of Firestone V-Force Vapor Barrier Membrane

Insulation Note: GenFlex ISO Insulation is equivalent to ISO 95+ GL, GenFlex HD ISO is equivalent to ISOGARD HD, GenFlex HD ISO Composite is equivalent to ISOGARD HD Composite, and Coated Glass Facer is equivalent to RESISTA

Membrane Note: GenFlex EZ Fleece Backed TPO is equivalent to UltraPly TPO XR in the same thickness

Installation over an Existing Roof Covering (Roof Recover):

Acceptable Applications: The modified bitumen roofing system may be installed over an existing built-up roof covering or an existing modified bitumen roof covering based on the requirements set forth in this product evaluation report.

Inspection of Roof Covering Recover Installation: Inspection of the roof covering recover installation must be by a Texas Department of Insurance appointed engineer. The Texas Department of Insurance appointed engineer must determine if the roof framing can support the combined weight of the existing roof covering and the roof covering recover.

Roof Covering Replacement versus Roof Covering Recover: All existing roof coverings must be completely removed, and a new roof covering installed if any of the following conditions occur:

- The existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for the additional roof covering.
- The existing roof has two or more applications of any type of roof covering.

Positive Drainage: The roof covering recover application must not be required to meet the minimum roof slope of 1/4" per foot if positive drainage is provided.

Roof Framing: The maximum allowable spacing of the roof framing must be as specified in this evaluation report.

Roof Deck: The existing roof deck must be as specified in each assembly listed in this evaluation report. The underside of the roof deck must be examined by the Texas Department of Insurance appointed engineer for corrosion or deterioration. If corrosion exists, then it must be treated with a rust inhibitor. A fastener withdrawal resistance test must be conducted in the corroded or deteriorated area to determine if the withdrawal resistance of the fastener complies with the minimum fastener requirements for the roof covering recover application. If the tested fastener fails to comply, then the deteriorated roof deck must be replaced.

Fastener Withdrawal Resistance: The fastener withdrawal resistance must be conducted in accordance with ANSI/SPRI FX-1-2006 and this evaluation report.

Fasteners used for the installation of the roof covering recover to the existing roof deck must be as specified in the Installation Instructions section of this evaluation report. For the withdrawal test, the fasteners must be installed in the existing roof deck as required for the roof covering recover installation. A Texas Department of Insurance appointed engineer must review the data to verify the integrity of the existing roof deck and to compare results of the withdrawal tests with the minimum fastener requirements for the roof covering recover application.

The Texas Department of Insurance appointed engineer must document all test results, including the locations on the roof surface where the tests are performed. A minimum of 10 withdrawal resistance tests are required for a roof area up to 50,000 square feet (a minimum of 50 percent of the tests must be conducted at the perimeter and the corners). Five additional tests are required for each additional 50,000 square feet of roof area or portion thereof (a minimum of 50 percent of the tests must be conducted at the perimeter and the corners). The tests must be located evenly spread across the surface of the roof. At least one withdrawal test must be performed on each roof level if the roof consists of multiple levels.

The withdrawal resistance of each tested fastener must comply with the minimum fastener requirements for the roof covering recover application. If a tested fastener fails to comply, then the Texas Department of Insurance appointed engineer must examine that area for deterioration of the roof deck by removing the existing roof covering in that area. If that area of the roof deck has deteriorated, then the deteriorated roof deck must be replaced.

Existing Roof Covering Preparation: The existing roof covering must be prepared to receive the roof covering recover as specified in the Firestone installation instructions.

The existing roof covering surface must be dry and free of dirt and debris.

If the existing roof covering is gravel surfaced, then the loose gravel must be completely removed. The surface of the existing roof covering must be relatively smooth.

If the existing roof covering has blisters, buckles, ridges, folds, or other deformations, then they must be completely removed. The surface of the existing roof covering must be relatively smooth.

If the existing roof covering has blisters, buckles, ridges, folds, or other deformations, then they must be removed, and the surface patched to provide a smooth surface.

If the existing roof covering has loose fasteners, then the existing membrane must be cut open, the loose fasteners removed, and the surface patched to provide a smooth surface.

Roof Covering Recover Installation: Installation of the roof covering recover must be specified in the Installation Instructions section of this evaluation report.

Note: Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C2	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft. span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 2" ISO 95+ GL	AP Fasteners & Plates or HD Fasteners & Insulation Plates at 12 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
C3	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft. span	N/A	(New deck only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.25" DensDeck Prime	HD Fasteners & Insulation Plates at 18 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
C4	22-gauge Steel Type B (min. Grade 33) @ 6 ft. span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 2" ISOGARD HD Composite laid perpendicular to flutes with staggered end joints	AP Fasteners & Insulation Plates at 8 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
C5	22-gauge Steel Type B (min. Grade 33) @ 6ft.span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min 2.5" ISO 95+ GL	AP Fasteners & Insulation Plates at 15 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
C6	22-gauge. Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1.5" ISOGARD HD Composite	AP Fasteners & Insulation Plates at 12 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C7	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1.5" ISO 95+ GL	AP Fasteners or HD Fasteners & Insulation Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60
C8	22-gauge Steel Type B (min. Grade 33) @ 6 ft span	N/A	Min. 1" ISO 95+ GL or RESISTA	Min. 0.5" SECUROCK	AP Fasteners & Insulation Plates at 15 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60
C9	22-gauge Steel Type B (min. Grade 33) @ 6 ft span	N/A	Min 0.5" ISO 95+GL or RESISTA	Min. 0.5" SECUROCK	AP Fasteners & Insulation Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply-	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60
C10	22-gauge Steel B-Deck (min. Grade 33) @ 6ft span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1" RESISTA or Min. 0.5" DensDeck Prime	AP Fasteners or HD Fasteners & Insulation Plates at 20 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5
C11	22-gauge. Steel B-Deck (min. Grade 33) @ 6ft span	N/A	(New Deck only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	HD Fasteners & Insulation Plates at 18 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply II	OPTIONAL TA SBS Ply or HA SBS BUR Ply II	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5
C12	22-gauge. Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1.5" ISOGARD HD Composite	AP Fasteners & Insulation Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C13	22-gauge. Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	(New Deck only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	HD Fasteners & Insulation Plates at 20 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply II	OPTIONAL TA SBS Ply or HA SBS BUR Ply II	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0
C14	22-gauge. Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	Min. 1.5" ISO 95+ GL	Min. 0.5" SECUROCK	AP Fasteners & Plates at 22 per 4 ft x 8 ft board	TA SBS Ply (min. 3.75" side laps)	OPTIONAL HA SBS BUR Ply, or TA SBS Ply (min. 3.75" side laps)	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-90.0
C15	22-gauge Steel Type B (min. Grade 33) @ 6ft span	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min 2.5" ISO 95+ GL-	AP Fasteners & Insulation Plates at 32 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-97.5
C16	22-gauge Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	HD Fasteners & Insulation Plates at 24 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-97.5

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C17	22-gauge. Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	HD Fasteners & Insulation Plates at 32 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR	-157.5
C18	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	Min. 1" ISO 95+ GL or RESISTA	ISOGARD HD	AP Fasteners & Plates at 24 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
C19	22-gauge Vented Steel B-Deck (min. Grade 33) @ 5 ft. span	N/A	Min. 300 psi LWIC	Min. 2" ISO 95+ GL	AP Fasteners & Plates 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60.0
C20	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.25" SECUROCK	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	HA SBS Ply, or TA SBS Ply (min. 3.75" side laps)	OPTIONAL HA SBS Ply, or TA SBS Ply (min. 3.75" side laps)	TPO XR HA or TPO XR ISR or (over HA SBS Ply only) TPO XR TJ	-67.5
C21	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.25" SECUROCK	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C22	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 24 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0
C23	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 24 per 4 ft x 8 ft board	HA SBS BUR Ply, or TA SBS Ply	OPTIONAL BASEGARD, HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0
C24	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.5" SECUROCK	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	HA SBS Ply or TA SBS Ply (min. 3.75" side laps)	OPTIONAL HA SBS Ply, or TA SBS Ply (min. 3.75" side laps)	TPO XR HA or TPO XR ISR or (over HA SBS Ply only) TPO XR TJ	-75.0
C25	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	One or more layers of ISO 95+ GL or RESISTA	Min. 0.5" SECUROCK	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0
C27	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	DensDeck Prime	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C28	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply II	OPTIONAL TA SBS Ply or HA SBS BUR Ply II	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5
C29	22-gauge Steel B-Deck (min. Grade 33) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 20 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-75.0
C30	22-gauge Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 24 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply	OPTIONAL TA SBS Ply or HA SBS BUR Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-97.5
C31	(New Deck Only) 22-gauge Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	Min. 1.5" ISO 95+ GL	Min. 0.5" SECUROCK	AP Fasteners & Plates at 32 per 4 ft x 8 ft board	TA SBS Ply	OPTIONAL TA SBS Ply	TPO XR HA or TPO XR ISR	-150

Limitations and Installation:

TABLE 1: WIND UPLIFT RESISTANCE									
Adhered Membranes over Fastened Insulation									
Assembly No.	Substrate	Vapor Barrier	Base Insulation	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
						Base Ply	Ply Sheet	Membrane	
C32	22-gauge Steel B-Deck (min. Grade 80) @ 6 ft span	N/A	(New Deck Only) Min. 2" ISO 95+ GL, Tapered ISO 95+ GL or RESISTA	Min. 0.5" DensDeck Prime	AP Fasteners & Plates at 32 per 4 ft x 8 ft board	TA SBS Ply or HA SBS BUR Ply II	OPTIONAL TA SBS Ply or HA SBS BUR Ply II	TPO XR HA or TPO XR ISR	-157.5
C33	19/32" thick APA Span Rated Plywood over #2 wood truss	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1.5" RESISTA	AP Fasteners & Plates at 12 per 4 ft x 8 ft board	BASEGARD	OPTIONAL BASEGARD, HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-45.0
C34	19/32" thick APA Span Rated Plywood over #2 wood truss	N/A	OPTIONAL ISO 95+ GL or RESISTA	Min. 1.5" RESISTA	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	BASEGARD	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR	-75.0

Limitations and Installation:

TABLE 2: WIND UPLIFT RESISTANCE							
Mechanically Fastened Membranes over Insulation							
Assembly No.	Substrate	Insulation	Base Ply	Base Ply Attachment	Ply Sheet	Membrane	Design Pressure (psf)
D2	22-gauge Vented Steel B-Deck (Min. Grade 33) @5 ft. span	Min. 402 psi Elastizell	SBS Poly Torch Base	1.8" Twin Loc-Nails and Straight-Line Batten Bars secured 6" o.c. within the torch adhered, 4" wide side laps	SBS Poly Torch Base Torch adhered	TPO XR HA or TPO XR ISR	-45.0
D3	22-gauge Vented Steel B-Deck (Min. Grade 33) @5 ft. span	Min. 300 psi Elastizell	SBS Base Sheet	1.7" LWC Base-Ply Fastener installed 9" o.c. in the laps, 9" o.c. in two (2) staggered rows in the field	BASEGARD	TPO XR HA or TPO XR ISR	-45.0
D4	22-gauge Vented Steel B-Deck (Min. Grade 33) @6 ft. span	Min. 380 psi Celcore MF with HS Rheology Admixture; Steel deck only: treated with Celcore S-1	SBS Base Sheet	1.8" Two-Piece Impact Nail installed 8" o.c. in the laps, 8" o.c. in two (2) staggered rows in the field	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
D5	22-gauge Vented Steel B-Deck (Min. Grade 33) @5 ft. span	Min. 200 psi Cellular Lightweight Concrete (MCRF \geq 176 lbf)	MA Base	1.7" LWC Base-Ply Fastener installed 7" o.c. in the laps, 7" o.c. in two (2) equally spaced, staggered rows in the field	HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60.0
D6	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 380 psi Celcore MF with HS Rheology Admixture; Steel deck only: treated with Celcore S-1	MA Base	1.7" LWC Base-Ply Fastener installed 8" o.c. in the laps, 8" o.c. in two (2) staggered rows in the field	HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60.0

Limitations and Installation:

TABLE 2: WIND UPLIFT RESISTANCE							
Mechanically Fastened Membranes over Insulation							
Assembly No.	Substrate	Insulation	Base Ply	Base Ply Attachment	Ply Sheet	Membrane	Design Pressure (psf)
D7	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 300 psi Celcore MF with HS Rheology Admixture; Steel deck only: treated with Celcore S-1	MA Base	1.7" LWC Base-Ply Fastener installed 7" o.c. in the laps, 7" o.c. in two (2) staggered rows in the field	HA SBS Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS Ply only) TPO XR TJ	-75.0
D8	22-gauge Vented Steel B-Deck (Min. Grade 33) @ 6 ft. span	Min. 300 psi Mearlcrete	MA Base	1.7" LWC Base-Ply Fastener installed 7" o.c. in the laps, 7" o.c. in two (2) staggered rows in the field	HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
D9	22-gauge Vented Steel B-Deck (Min. Grade 33) @ 6 ft. span	Min. 300 psi Celcore MF with HS Rheology Admixture	MA Base	1.7" LWC Base-Ply Fastener installed 7" o.c. in the laps, 7" o.c. in two (2) staggered rows in the field	HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-60.0
D10	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 360 psi Celcore MF with HS Rheology Admixture over a deck treated (Steel deck new or existing only) with Celcore S-1	Channel Venting Base, SBS Base, SBS Glass Torch Base, SBS Glass Torch Base 1.5 or SBS PolyTorch Base	1.8" Two-Piece Impact Nail installed 7" o.c. in the laps, 7" o.c. in two (2) staggered rows in the field	BASEGARD, HA SBS Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS Ply only) TPO XR TJ	-67.5

Limitations and Installation:

TABLE 2: WIND UPLIFT RESISTANCE							
Mechanically Fastened Membranes over Insulation							
Assembly No.	Substrate	Insulation	Base Ply	Base Ply Attachment	Ply Sheet	Membrane	Design Pressure (psf)
D11	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 190 psi Elastizell	MA Base III	AP Fasteners (Steel only) or CD Fasteners (Concrete only) or HD Fasteners (Concrete only) and Plates installed 12" o.c. in the laps, 12" o.c. in two (2) staggered rows in the field	BASEGARD, HA SBS Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS Ply only) TPO XR TJ	-75.0
D12	22-gauge Steel B-Deck	Layer 1 Min. 1.5" Insulation Layer 2 OPTIONAL Cover Board	SBS Poly Base (Min. 3" side laps)	Heavy Duty Fasteners and 1" Coiled Metal Batten strip fastened 24" o.c. at the laps	BASEGARD or TA SBS Ply	TPO XR HA or TPO XR ISR	-45.0
D13	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Layer 1 Min. 1.5" Insulation Layer 2 OPTIONAL Cover Board	SBS Poly Base (Min. 3" side laps)	Heavy Duty Fasteners and 1" Coiled Metal Batten strip fastened 18" o.c. at the laps	BASEGARD or TA SBS Ply	TPO XR HA or TPO XR ISR	-52.5
D14	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Layer 1 Min. 1" Insulation Layer 2 OPTIONAL Cover Board	SBS Base Sheet	AP Fasteners and Plates at 12" o.c. in the lap and two (2) equally spaced, staggered rows 12" o.c. in the field of the roll	BASEGARD or TA SBS Ply	TPO XR HA or TPO XR ISR	-60.0
D15	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Layer 1 Min. 1.5" Insulation Layer 2 OPTIONAL Cover Board	SBS Base-P, SBS Premium Base, SBS Poly Base, SBS Smooth	AP Fasteners and Plates at 12" o.c. in the lap and two (2) equally spaced, staggered rows 12" o.c. in the field of the roll	BASEGARD or TA SBS Ply	TPO XR HA or TPO XR ISR	-75.0

Limitations and Installation:

TABLE 2: WIND UPLIFT RESISTANCE							
Mechanically Fastened Membranes over Insulation							
Assembly No.	Substrate	Insulation	Base Ply	Base Ply Attachment	Ply Sheet	Membrane	Design Pressure (psf)
D17	19/32" thick APA Span Rated Plywood over #2 wood truss	-	MA Base	12 ga. x 1.25" ring shank nails and 32 ga. x 1-5/8" tin tabs at 9" o.c. in the lap and three (3) equally spaced, staggered rows 9" o.c. in the field of the roll	TA SBS Ply	TPO XR HA or TPO XR ISR	-52.5
D18	19/32" thick APA Span Rated Plywood over #2 wood truss	Layer 1 OPTIONAL Insulation Layer 2 OPTIONAL Cover Board	MA Base II Min. 3.5" side lap	AP Fasteners & Plates at 12" o.c. in the lap and two (2) equally spaced, staggered rows 12" o.c. in the field of the roll	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-60.0
D19	19/32" thick APA Span Rated Plywood over #2 wood truss	Layer 1 OPTIONAL Insulation Layer 2 OPTIONAL Cover Board	MA Base II	AP Fasteners & Plates at 12" o.c. in the lap and two (2) equally spaced, staggered rows 12" o.c. in the field of the roll	BASEGARD, HA SBS Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-75.0
D20	19/32" thick APA Span Rated Plywood over #2 wood truss	-	SBS Base, SBS Premium Base, or SBS Poly Base	12 ga. x 1.25" ring shank nails and 32 ga. x 1-5/8" tin tabs at 6" o.c. in the lap and three (3) staggered rows 6" o.c. in the field of the roll	HA SBS Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-97.5

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	1Base Insulation	Base Insulation Attachment	Middle Insulation	1Middle Insulation Attachment	1Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
									Base Ply	Ply Sheet	Membrane	
A1	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 12" o.c.	N/A	N/A	Min. 1" ISO 95+ GL	I.S.O. Twin Pack applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-105
A2	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 12" o.c.	N/A	N/A	ISOGARD HD	Insulation Adhesive applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-110
A3	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 12" o.c.	N/A	N/A	SECUROCK	I.S.O. Twin Pack applied in ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply	OPTIONAL HA SBS BUR Ply, TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-122.5
A4	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	ASTM D 312, Type IV Asphalt	N/A	N/A	Min. 0.25" SECUROCK	ASTM D 312, Type IV Asphalt	BASEGARD, HA SBS BUR Ply	OPTIONAL HA SBS BUR Ply, TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-130

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A5	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive ribbon applied in ribbons spaced 12" o.c.	N/A	N/A	DensDeck Prime	Insulation Adhesive ribbon applied in ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-167.5
A6	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 12" o.c.	N/A	N/A	SECUROCK	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-175.0
A7	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 6" o.c.	N/A	N/A	DensDeck Prime	Insulation Adhesive II ribbon applied in ribbons spaced 6" o.c.	HA SBS Ply or TA SBS Ply	OPTIONAL HA SBS BUR Ply or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-230.0
A8	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive II ribbon applied in ribbons spaced 6" o.c.	N/A	N/A	DensDeck Prime	Insulation Adhesive II ribbon applied in ribbons spaced 6" o.c.	TA SBS Ply	OPTIONAL TA SBS Ply	TPO XR HA or TPO XR ISR	-237.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A9	Structural Concrete	V-Force	Min. 1.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	OPTIONAL Min. 1" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	OPTIONAL Min. 1.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-262.5
A10	Structural Concrete	V-Force	Min. 1.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	OPTIONAL Tapered ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	OPTIONAL Min. 0.5" ISOGARD HD or Min. 0.25" DensDeck Prime	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-262.5
A11	Structural Concrete	V-Force	Min. 1.5" ISO 95+ GL	I.S.O. Twin Pack Insulation Adhesive or I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	N/A	N/A	N/A	N/A	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-287.5
A12	Structural Concrete	V-Force	Min. 0.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	N/A	N/A	Min. 1" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-287.5
A13	Structural Concrete	V-Force	Min. 0.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	Min. 1" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	SECUROCK	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-287.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A14	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	Min. 1" ISO 95+ GL	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	Min. 0.25" SECUROCK	I.S.O. Stick or Twin Jet applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-317.5
A15	Structural Concrete	N/A	Min. 0.5" ISO 95+ GL	Insulation Adhesive ribbon applied in ribbons spaced 6" o.c.	N/A	N/A	Min. 0.25" SECUROCK	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-347.5
A16	Structural ConcreteL WIC	N/A	-	-	N/A	N/A	Min. 0.25" SECUROCK	I.S.O. Stick or Twin Jet applied in ribbons spaced 6" o.c.	BASEGARD or TA SBS Ply or SBS Poly Base or SBS Smooth in ASTM D 312, Type IV Asphalt	OPTIONAL HA SBS Ply, or TA SBS Ply	TPO XR HA	-400.0
A17	Structural Concrete	N/A	Min. 200 psi Cellular Lightweight Concrete	(MCRF ≥ 80 lbf using Firestone 1.7" LWC Base-Ply Fastener)	N/A	N/A	DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-72.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A18	Structural Concrete	N/A	Min. 200 psi Cellular Lightweight Concrete	(MCRF \geq 80 lbf using Firestone 1.7" LWC Base-Ply Fastener)	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-72.5
A19	Structural Concrete	OPTIONAL SBS TA Vapor Barrier	Min. 300 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c. or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-102.5
A20	Structural Concrete	OPTIONAL SBS TA Vapor Barrier	Min. 300 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-102.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A21	Structural Concrete	OPTIONAL SBS TA Vapor Barrier	Min. 400 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 0.25" SECUROCK	Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-127.5
A22	Structural Concrete	N/A	Min. 300 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 0.5" ISOGARD HD	Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-172.5
A23	Structural Concrete	N/A	Min. 300 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 0.25" DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-177.5
A24	Structural Concrete	N/A	Min. 300 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 1" ISO 95+ GL	Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-177.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A25	Structural Concrete	OPTIONAL SBS TA Vapor Barrier	Min. 400 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 0.25" SECUROCK	Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over TA SBS Ply only) TPO XR TJ, applied 4" o.c.	-222.5
A26	CWF	N/A	Min. 400 psi Celcore MF with HS Rheology Admixture	Poured-in-place	N/A	N/A	Min. 0.25" DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-145.0
A27	CWF	N/A	Min. 0.5" ISO 95+ GL	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	N/A	N/A	Min. 0.25" SECUROCK	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-202.5
A28	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	N/A	Min. 300 psi Celcore MF with HS Rheology	Poured-in-place	N/A	N/A	DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
A29	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	N/A	Min. 300 psi Celcore MF with HS Rheology	Poured-in-place	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 3: WIND UPLIFT RESISTANCE												
Adhered Systems												
Assembly No.	Substrate	Vapor Barrier	¹ Base Insulation	Base Insulation Attachment	Middle Insulation	¹ Middle Insulation Attachment	¹ Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
A30	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	N/A	Min. 300 psi Elastizell	Poured-in-place	N/A	N/A	DensDeck Prime	I.S.O. Stick or Twin Jet Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5
A31	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	N/A	Min. 300 psi Elastizell	Poured-in-place	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5

Notes: 1) Boards must be a maximum 4' x 4'.

Limitations and Installation:

TABLE 4: WIND UPLIFT RESISTANCE											
Mechanically Fastened Base Insulation, Adhered Top Insulation, Adhered Membranes											
Assembly No.	Substrate	Base Insulation	Base Insulation Attachment	Middle Insulation/ Anchor Sheet	Middle Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
								Base Ply	Ply Sheet	Membrane	
B1	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Mearlcrete, Celcore, or Celcore MF with HS Rheology Admixture	Poured-in-place	MA Base	1.8" Two-Piece Impact Nail installed 7" o.c. in the 4" wide laps, 7" o.c. in two (2) staggered rows in the field	Layer 1 Min. 1" ISO 95+ GL or RESISTA Layer 2 OPTIONAL Tapered ISO 95+ GL or Tapered RESISTA	Insulation Adhesive applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
B2	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Mearlcrete, Celcore, or Celcore MF with HS Rheology Admixture	Poured-in-place	MA Base	1.8" Two-Piece Impact Nail installed 7" o.c. in the 4" wide laps, 7" o.c. in two (2) staggered rows in the field	Layer 1 Min. 1" ISO 95+ GL or RESISTA Layer 2 OPTIONAL Tapered ISO 95+ GL or Tapered RESISTA Layer 3 DensDeck Prime	Insulation Adhesive applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
B3	22ga. Steel B-Deck (Min. Grade 33) @ 6ft span	Min. 0.25" DensDeck Prime	AP Fasteners (Steel Only) or HD Fasteners & Insulation Plates at 8 per 4 ft x 8 ft board followed by V-Force	Min. 1.5" ISO 95+ GL	I.S.O. Stick applied in ribbons spaced 12" o.c.	OPTIONAL Min. 1.5" ISO 95+ GL	I.S.O. Stick applied in ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0

Limitations and Installation:

TABLE 4: WIND UPLIFT RESISTANCE											
Mechanically Fastened Base Insulation, Adhered Top Insulation, Adhered Membranes											
Assembly No.	Substrate	Base Insulation	Base Insulation Attachment	Middle Insulation/ Anchor Sheet	Middle Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
								Base Ply	Ply Sheet	Membrane	
B4	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span Steel G33	Min. 0.25" DensDeck Prime	AP Fasteners (Steel Only) or HD Fasteners & Insulation Plates at 8 per 4 ft x 8 ft board followed by V-Force	Layer 1 Min. 1.5" ISO 95+ GL Layer 2 OPTIONAL Tapered ISO 95+ GL	I.S.O. Stick applied in ribbons spaced 12" o.c.	OPTIONAL Min. 0.5" ISOGARD HD or Min. 0.25" DensDeck Prime	I.S.O. Stick applied in ribbons spaced 12" o.c.	BASEGARD or TA SBS Ply w/DensDeck Prime only	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0
B5	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 300 psi Celcore MF with HS Rheology Admixture	Heavy Duty Fasteners and Insulation Fastening Plates through-fastened to Steel Deck at a rate of one per 2 ft ²	N/A	N/A	DensDeck Prime	I.S.O. Stick Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-90.0
B6	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 300 psi Celcore MF with HS Rheology	Heavy Duty Fasteners and Insulation Plates through-fastened to Steel Deck at a rate of one per 2 ft ²	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-90.0

Limitations and Installation:

TABLE 4: WIND UPLIFT RESISTANCE											
Mechanically Fastened Base Insulation, Adhered Top Insulation, Adhered Membranes											
Assembly No.	Substrate	Base Insulation	Base Insulation Attachment	Middle Insulation/ Anchor Sheet	Middle Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
								Base Ply	Ply Sheet	Membrane	
B7	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 300 psi Elastizell	Heavy Duty Fasteners and Insulation Plates through-fastened to Steel Deck at a rate of one per 2 ft ²	N/A	N/A	DensDeck Prime	I.S.O. Stick Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-135.0
B8	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 300 psi Elastizell	Heavy Duty Fasteners and Insulation Plates through-fastened to Steel Deck at a rate of one per 2 ft ²	N/A	N/A	ISOGARD HD	I.S.O. Twin Pack Insulation Adhesive Ribbons spaced 12" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR	-135.0
B9	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 1.5" ISO 95+ GL or RESISTA	AP Fasteners & Plates at 18 per 4 ft x 8 ft board	N/A	N/A	ISOGARD HD	Insulation Adhesive; Ribbons spaced 12" o.c.	BASEGARD	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-45.0

Limitations and Installation:

TABLE 4: WIND UPLIFT RESISTANCE											
Mechanically Fastened Base Insulation, Adhered Top Insulation, Adhered Membranes											
Assembly No.	Substrate	Base Insulation	Base Insulation Attachment	Middle Insulation/ Anchor Sheet	Middle Insulation Attachment	Top Insulation	Top Insulation Attachment	Membrane			Design Pressure (psf)
								Base Ply	Ply Sheet	Membrane	
B10	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	OPTIONAL ISO 95+ GL or RESISTA	-	Min. 1.5" ISO 95+ GL or RESISTA	AP Fasteners & Plates at 20 per 4 ft x 8 ft board	Min. 0.5" DensDeck Prime or SECUROCK	I.S.O. Twin Pack Insulation Adhesive (not with SECUROCK), I.S.O. Stick, or I.S.O. Fix II; Ribbons spaced 6" o.c.	BASEGARD	OPTIONAL BASEGARD, HA SBS BUR Ply, or TA SBS Ply (min. 3.25" side laps)	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-52.5
B11	22-gauge Steel B-Deck (Min. Grade 33) @ 6 ft span	Min. 2" ISO 95 + GL	AP Fasteners & Plates at 20 per 4 ft x 8 ft board	Min. 0.5" ISO 95+ GL	I.S.O. Stick with ribbons at 6" o.c.	0.5" SECUROCK	I.S.O. Stick; Ribbons spaced 6" o.c.	BASEGARD, HA SBS BUR Ply, or TA SBS Ply	OPTIONAL HA SBS BUR Ply, or TA SBS Ply	TPO XR HA or TPO XR ISR or (over HA SBS BUR Ply only) TPO XR TJ	-67.5