



Product Evaluation

RC243 | 0816

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-243

Effective Date: August 1, 2016

Re-evaluation Date: August 2020

Product Name: IB PVC Roofing Systems

Manufacturer: IB Roof Systems
8181 Jetstar Drive, Suite 150
Irving, TX 75063
(972) 354-6600

General Description:

- **IB PVC Single Ply** is a 50-mil, 60-mil, 80-mil polyester reinforced PVC membrane intended for use in fully adhered or mechanically attached systems.
- **IB PVC Single Ply Fleeceback** is a 50-mil, 60-mil, 80-mil polyester reinforced PVC membrane with a non-woven polyester fleeceback intended for use in fully adhered or mechanically attached systems.
- **IB PVC-GR 60** is a 60-mil fiberglass reinforced PVC membrane intended for used in fully adhered systems.
- **IB PVC-GR 60FB** is a 60-mil fiberglass reinforced PVC membrane with a non-woven polyester fleeceback intended for use in fully adhered systems.

Adhesives:

- **Flexocol V** is a contact adhesive for upstands.
- **IB Vertibond PVC Bonding Adhesive** is an adhesive for bonding IB membranes to metal, wood, concrete and certain insulation boards.
- **IB Water Borne Adhesive** is an adhesive for bonding IB membranes to wood, concrete and certain insulation boards.
- **Millennium One Step Foamable Adhesive** is a highly elastomeric, one-step, all-purpose, foamable adhesive.
- **IB Rapid Set Insulation Adhesive** is a highly elastomeric, one-step, all-purpose, foamable adhesive.

- **OlyBond 500** is a dual component polyurethane foam adhesive. OlyBond 500 is available in 5 gal. containers or 1,500 ml SpotShot cartridges.

Insulations & Coverboards:

- **Multi-Max FA-3** is an energy-efficient thermal insulation board composed of a closed-cell polyisocyanurate foam core bonded to glass fiber/organic mat facers on both sides.
- **AC Foam-II** is a closed-cell polyisocyanurate foam core integrally bonded to non-asphaltic, fiber-reinforced organic felt facers.
- **AC Foam-III** is a closed-cell polyisocyanurate foam core integrally bonded to inorganic coated glass facers.
- **IB EnergyBoard II** is a closed-cell polyisocyanurate foam core integrally bonded to non-asphaltic, fiber-reinforced organic felt facers.
- **IB EnergyBoard III** is a closed-cell polyisocyanurate foam core integrally bonded to inorganic coated glass facers.
- **H-Shield** is a rigid roof insulation panel composed of a closed cell polyisocyanurate foam core manufactured on-line to fiber reinforced facers on each side.
- **H-Shield CG** is a rigid roof insulation panel composed of a closed cell polyisocyanurate foam core manufactured on-line to a premium performance coated glass facer on both sides.
- **DensDeck Prime** is a non-structural, glass mat faced gypsum product with a silicone-treated, water resistant gypsum core and glass surface mats front, back and long edges, the primed board has both sides coated with an acrylic limestone filled binder.
- **SECUROCK Gypsum-Fiber Roof Board** is a rigid, gypsum based board stock for use as an overlayment, underlayment or bonding surface.
- **AC Foam-HS Coverboard** is a closed-cell polyisocyanurate foam core integrally bonded high performance AC Foam-IV coated glass facers.
- **InsulFoam HD Composite** is an engineered insulation consisting of a closed cell expanded polystyrene (EPS) bonded to high-density polyisocyanurate cover board.

Fasteners & Plates:

- **#12 Standard Roofgrip** is a modified buttress thread, Phillips head, carbon steel fastener for use in steel or wood decks.
- **#14 Roofgrip** is a standard thread, Phillips head, pinch point, carbon steel fastener for use in metal, wood or concrete decks.
- **#15 Roofgrip** is a modified buttress thread, Phillips head, drill point, carbon steel fastener for use in steel, wood or concrete decks.
- **OMG 3" Galvalume Steel Plate** is a galvalume coated steel plate for use with approved fasteners.
- **OMG XHD** is a truss head, self-drilling, drill point, high thread fastener for use in wood or steel decks.
- **CD-10** is a carbon steel expansion fastener for use in structural concrete decks.
- **OMG 2" Barbed Plate** is a round galvanized steel stress plates for use with OMG fasteners.
- **Dekfast 3" Round Steel Plate** is a steel, galvalume AZ50 stress plate for use with all Dekfast fasteners.
- **Dekfast 12** is a truss head modified BP type, milled slot self-drilling point, 13 threads per inch, carbon steel fastener for use on steel and wood decks.
- **Dekfast 14** is a truss head modified BP type, self-drilling point, 13 threads per inch, carbon steel fastener for use on steel, wood or concrete decks.
- **Dekfast 15 HS** is a truss head, modified BP type, self-drilling point, 13 threads per inch, carbon fastener for use on concrete, steel and wood decks.
- **Dekspike** is a mushroom head hammer driven anchor for attachment of insulation and membrane attachment on concrete decks.
- **IB #12 Standard Roofing Fastener** is a modified buttress thread, Phillips head, carbon steel fastener for use in steel or wood decks.
- **IB #14 Heavy Duty Roofing Fastener** is a standard thread, phillips head, pinch point, carbon steel fastener for use in metal, wood or concrete decks.

- **IB #15 XHD Roofing Fastener (aka IB Magnum Fastener)** is a truss head, self-drilling, drill point, high thread fastener for use in wood or steel decks.
- **IB 3" Round Metal Insulation Plate** is a steel, galvalume AZ50 stress plate for use with all Dekfast fasteners.
- **IB 3" Galvalume Insulation Plate** is a galvalume coated steel plate for use with approved fasteners.
- **IB 2" Barbed Seam Plate** is a round galvanized steel stress plates for use with IB fasteners.

Limitations:

- **Roof Framing:** Roof framing must be spaced a maximum of 24" on center.
- **Roof Deck:** For new applications, the roof deck must be secured to the roof framing to resist the required uplift loads.
- **Positive Drainage of Roof Deck:** Roof decks, in which this product is to be installed upon, must be provided with positive drainage. A minimum roof slope after construction of 1/4" per foot is recommended.
- **Design Wind Pressures:** The design wind uplift pressures must be specified in the assemblies listed in this evaluation report.

Installation over an Existing Roof Covering (Roof Recover):

- **Acceptable Application:** The PVC roofing system may be installed over an existing built-up roof covering or an existing PVC 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 Vs 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.

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

Installation:

General Requirements:

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

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.

Positive Drainage of Roof Deck: Roof decks, in which this product is to be installed upon, must be provided with positive drainage. A minimum roof slope after construction of 1/4" per foot is recommended.

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 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.

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 ten 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 5,000 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 Cover Preparation: The existing roof covering must be prepared to receive the roof covering recover as specified in the IB Roof Systems 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 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.

Membrane Attachment: The membrane must be mechanically attached or fully adhered using the fasteners, plates and adhesives specified in this evaluation report.

Fasteners: Fasteners must be of sufficient length to penetrate into and through the steel deck a minimum of 3/4" or the plywood deck or fully penetrate into the wood boards.

The following notes apply to the systems outlined:

1. Roof decks must be in accordance with the requirements of the International Residential Code and the International Building Code along with applicable Texas Revisions and this product evaluation report.
2. Unless otherwise noted, fasteners and stress plates for insulation attachment must be as follows. Fasteners must be of sufficient length for the following engagements:
 - Wood Deck: IB #12 Standard Roofing Fastener, OMG #12 Standard Roofgrip (Thread diameter: 0.220"; head diameter: 0.435" and head style: #3 Phillips Truss head) or IB #14 Heavy Duty Roofing Fastener, OMG #14 Roofgrip (Thread diameter: 0.245", head diameter: 0.435" and head style: #3 Phillips Truss head) with IB 3" Galvalume Insulation Plate, IB 3" Round Metal Insulation Plate, SFS Dekfast 3" Round Steel Plate, OMG 3" Galvalume Steel Plate. Minimum 3/4" penetration into and through the roof deck or minimum 1" wood plank embedment.
 - Steel Deck: IB #12 Standard Roofing Fastener, OMG #12 Standard Roofgrip (Thread diameter: 0.220"; head diameter: 0.435" and head style: #3 Phillips Truss head), IB #14 Heavy Duty Roofing Fastener, OMG #14 Roofgrip (Thread diameter: 0.245", head diameter: 0.435" and head style: #3 Phillips Truss head), IB #15 XHD Roofing Fastener, IB Magnum Fastener, OMG #15 Roofgrip (Thread diameter: 0.265"; head diameter: 0.435" and head style: #3 Phillips Truss head) or Dekfast 12 (Thread diameter: 0.220", head diameter: 0.435" and head style: #3 Phillips Truss Head), Dekfast 14 (Thread diameter: 0.245", head diameter: 0.435" and head style: #3 Phillips Truss Head), Dekfast 15 HS (Thread diameter: 0.275", head diameter: 0.435" and head style: #3 Phillips Truss Head) or OMG XHD (Thread diameter: 0.245", head diameter: 0.435" and head style: #3 Phillip Truss) with IB 3" Galvalume Insulation Plate, IB 3" Round Metal Insulation Plate, SFS Dekfast 3" Round Steel Plate, OMG 3" Galvalume Steel Plate. Minimum 3/4" steel penetration, engage the top flute of the steel deck.
 - Concrete Deck: OMG CD-10 (Thread diameter: 0.270 / 0.277", head diameter: 0.435" and head style: Flat Top Pan), SFS Dekspike (Shank diameter: 0.239", head diameter: 0.500" and head style: Mushroom Head) with IB 3" Galvalume Insulation Plate, OMG 3" Galvalume Steel Plate. Minimum 1" embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions.
3. Unless otherwise noted, insulation may be any one layer or combination of polyisocyanurate, polystyrene, wood fiberboard, perlite, DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board that meets the requirements of the IRC and IBC with Texas Revisions.
4. Preliminary insulation attachment for System Type D = Minimum four fasteners per 4 x 8' board or minimum two fasteners per 4 x 4' board.

5. For System Types D and E:
 - In-Seam Fastened Systems involve a 5" lap with the stress plates or batten strips and fasteners installed along the fastener-line preprinted on the membrane, finished with a 1-1/2" field weld. Attachment is expressed as follows: In-Seam: <max fastener spacing> x <max lap spacing>.
 - In-Field Fastened Systems involve stress plate or batten strips and fastener placement through the field of the membrane and covered with a min. 5" wide PVC cover strip with 1-1/2" field welds on both sides. Attachment is expressed as follows: In-Field: <max fastener spacing> x <max row spacing>.
6. For adhered membrane systems, side laps must be minimum 3" wide sealed with min. 1.5" heat weld.
7. Unless otherwise noted and subject to IB installation requirements IB Vertibond PVC Bonding Adhesive may be used with IB PVC Single Ply and IB PVC Single Ply Fleeceback membranes. IB Water Borne Adhesive may be used with IB PVC Single Ply, IB PVC Single Ply Fleeceback and IB PVC-GR 60FB membranes. Flexocol V Adhesive may be used with IB PVC-GR 60 smooth membrane. IB Vertibond PVC Bonding Adhesive and Flexocol V Adhesive are not accepted for use as membrane adhesive over assemblies with above deck polystyrene insulations.

Installations: Installation must be in accordance with the following assemblies:

TABLE 1: STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER											
SYSTEM TYPE A: MECHANICALLY ATTACHED THERMAL BARRIER, BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER											
Assembly No.	Deck (See Note 1)	Thermal Barrier		Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach			Type	Attach	Type	Attach	Type	Attach
#1 (SC-1)	22 ga. Type B, Grade 33 steel or structural concrete	Min. 1/2" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	Elastocol Stick Zero or Elastocol Stick	Sopravap'r	Min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1/4" DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500 spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
										IB PVC Single Ply	IB Water Borne Adhesive
										IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Thermal Barrier Attachment									
		Density (ft2 / fastener)				Parts per 4 x 4' board				Parts per 4 x 8' board	
0 < P < -45.0*		4				4				8	

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Thermal Barrier		Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach			Type	Attach	Type	Attach	Type	Attach
#2 (W-1)	Min. 15/32", APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6" o.c.	Min. 1/2" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	Elastocol Stick Zero or Elastocol Stick	Sopravap'r	Min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1/4" DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500 spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
										IB PVC Single Ply	IB Water Borne Adhesive
										IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Thermal Barrier Attachment									
		Density (ft2 / fastener)				Parts per 4 x 4' board				Parts per 4 x 8' board	
0 < P < -45.0*		1.6				10				20	

Installation (Cont.):

TABLE 1 (Continued): STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER											
SYSTEM TYPE A: MECHANICALLY ATTACHED THERMAL BARRIER, BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER											
Assembly No.	Deck (See Note 1)	Thermal Barrier		Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach			Type	Attach	Type	Attach	Type	Attach
#3 (SC-2)	22 ga. Type B, Grade 33 steel or structural concrete	Min. 1/2" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	Elastocol Stick Zero or Elastocol Stick	Sopravap'r	Min. 1.5" InsulFoam HD Composite	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	None	N/A	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
										IB PVC Single Ply	IB Water Borne Adhesive
										IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Thermal Barrier Attachment											
Design Pressure (psf)		Density (ft2 / fastener)			Parts per 4 x 4' board			Parts per 4 x 8' board			
0 < P < -45.0*		4			4			8			

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Thermal Barrier		Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach			Type	Attach	Type	Attach	Type	Attach
#4 (W-2)	Min. 15/32", APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6" o.c.	Min. 1/2" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	Elastocol Stick Zero or Elastocol Stick	Sopravap'r	Min. 1.5" InsulFoam HD Composite	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	None	N/A	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
										IB PVC Single Ply	IB Water Borne Adhesive
										IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Thermal Barrier Attachment											
Design Pressure (psf)		Density (ft2 / fastener)			Parts per 4 x 4' board			Parts per 4 x 8' board			
0 < P < -45.0*		1.6			10			20			

Installation (Cont.):

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED INSULATION, BONDED ROOF COVER									
Assembly No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#5 (C-1)	Structural concrete	None	None	(Optional) One or more layer(s), min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1/4" DensDeck Prime or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500 spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -257.5							

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED INSULATION, BONDED ROOF COVER									
Assembly No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#6 (C-2)	Structural concrete	None	None	(Optional) One or more layer(s), min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1/4" SECUR OCK Gypsum-Fiber Roof Board	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500 spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -267.5							

Installation (Cont.):

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED INSULATION, BONDED ROOF COVER									
Assembly No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#7 (C-3)	Structural concrete	None	None	One or more layer(s), min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	None	N/A	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -327.5							

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED INSULATION, BONDED ROOF COVER									
Assembly No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#8 (C-4)	Structural concrete	None	None	(Optional) Min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1.5" InsulFoam HD Composite	Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -102.5							

Installation (Cont.):

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER									
Asse mbl y No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#9 (C-5)	Structural concrete	Elastocol Stick or Elastocol Stick Zero	Sopravap'r	(Optional) One or more layer(s), min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1/4" DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500 spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -307.5							

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off)									
SYSTEM TYPE A: BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER									
Asseml y No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#10 (C-6)	Structural concrete	Elastocol Stick or Elastocol Stick Zero	Sopravap'r	One or more layer(s), min. 1.0" H-Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	None	N/A	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -290.0							

Installation (Cont.):

TABLE 1 (Continued): CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) SYSTEM TYPE A: BONDED VAPOR BARRIER, BONDED INSULATION, BONDED ROOF COVER									
Assem bly No.	Deck (See Note 1)	Primer	Vapor Barrier	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
				Type	Attach	Type	Attach	Type	Attach
#11 (C-7)	Structural concrete	Elastocol Stick or Elastocol Stick Zero	Sopravap' r	(Optional) Min. 1.0" H- Shield, ACFoam-II, ACFoam-III, IB EnergyBoard II, EnergyBoard III or H-Shield CG	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	Min. 1.5" InsulFoam HD Composite	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
								IB PVC Single Ply	IB Water Borne Adhesive
								IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		0 < P < -115.0							

Installation (Cont.):

TABLE 2: STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER							
SYSTEM TYPE B: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER							
Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#12 (SC-3)	22 ga. Type B, Grade 33 steel or structural concrete	Min. 2.0" ACFoam-II, ACFoam-III, IB EnergyBoard II, IB EnergyBoard III, H-Shield or H-Shield CG	See Note 2	Min. 1/4" DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500, spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)	Parts per 4 x 4' board		Parts per 4 x 8' board		
0 < P < -45.0*		2.9	6		11		

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#13 (W-3)	Min. 15/32" APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6" o.c.	Min. 2.0" ACFoam-II, ACFoam-III, IB EnergyBoard II, IB EnergyBoard III, H-Shield or H-Shield CG	See Note 2	Min. 1/4" DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board or ACFoam-HS Coverboard	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500, spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)	Parts per 4 x 4' board		Parts per 4 x 8' board		
0 < P < -45.0		1.6	10		20		

Installation (Cont.):

TABLE 2: STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER							
SYSTEM TYPE B: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER							
Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#14 (SC-4)	22 ga. Type B, Grade 33 steel or structural concrete	Min. 1.5" H-Shield, ACFoam-III, IB EnergyBoard III or H-Shield CG	See Note 2	Min. 1/4" SECUROCK Gypsum-Fiber Roof Board	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500, spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0*		2		8		16	

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#15 (W-4)	Min. 15/32", APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6"o.c.	Min. 1.5" H-Shield, ACFoam-III, IB EnergyBoard III or H-Shield CG	See Note 2	Min. 1/4" SECUROCK Gypsum-Fiber Roof Board	Millennium One Step Foamable Adhesive, IB Rapid Set Insulation Adhesive or OlyBond 500, spaced 12" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0		1.6		10		20	

Installation (Cont.):

TABLE 2 (Continued): STEEL or CONCRETE DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER							
SYSTEM TYPE B: MECHANICALLY ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER							
Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#16 (SC-5)	22 ga. Type B, Grade 40 steel or structural concrete	Min. 2.0" H- Shield, ACFoam-II, IB EnergyBoard II, ACFoam-III, IB EnergyBoard III or H-Shield CG	See Note 2	Min. 1/4" SECUROCK Gypsum-Fiber Roof Board, DensDeck Prime or ACFoam-HS Coverboard	OlyBond 500, Millennium One Step Foamable Adhesive or IB Rapid Set Insulation Adhesive, spaced 6" o.c.	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)	Parts per 4 x 4' board		Parts per 4 x 8' board		
0 < P < -75.0		1.6	10		20		

Installation (Cont.):

TABLE 3: STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER							
SYSTEM TYPE C: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#17 (SC-6)	22 ga. Type B, Grade 33 steel or structural concrete	(Optional) Any one or more layers, any combination	Loose Laid	Min. 1.5" ACFoam-II, ACFoam-III, IB EnergyBoard II, IB EnergyBoard III, H-Shield, H- Shield CG or min. 1/2" ACFoam-HS Coverboard or min. 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0*		2		8		16	

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#18 (W-5)	Min. 15/32", APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6"o.c.	(Optional) Any one or more layers, any combination	Loose Laid	Min. 1.5" ACFoam-II, ACFoam-III, IB EnergyBoard II, IB EnergyBoard III, H-Shield, H- Shield CG or min. 1/2" ACFoam-HS Coverboard or min. 1/4" DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	See Note 2	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0*		1.6		10		20	

Installation (Cont.):

TABLE 3 (Continued): STEEL, CONCRETE or WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER							
SYSTEM TYPE C: MECHANICALLY ATTACHED INSULATION, BONDED ROOF COVER							
Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#19 (SC-8)	22 ga. Type B, Grade 33 steel or structural concrete	(Optional) Any one or more layers, any combination	Loose Laid	Min. 1.5" InsulFoam HD Composite	See Note 2	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0*		2.67		6		12	

*The maximum allowable wind classification for the 5x9' test method is class 90 (MDP: -45.0 psf)

Assembly No.	Deck (See Note 1)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	
		Type	Attach	Type	Attach	Type	Attach
#20 (W-7)	Min. 15/32", APA rated CDX, 5-ply plywood sheathing to wood supports spaced 24" o.c. using 8d common nails spaced max. 6" o.c.	(Optional) Any one or more layers, any combination	Loose Laid	Min. 1.5" InsulFoam HD Composite	See Note 2	IB PVC-GR 60 or IB PVC Single Ply	Flexocol V or IB Vertibond PVC Bonding Adhesive
						IB PVC Single Ply	IB Water Borne Adhesive
						IB PVC-GR 60FB or IB PVC Single Ply Fleeceback	IB Water Borne Adhesive or IB Vertibond PVC Bonding Adhesive
Design Pressure (psf)		Insulation Attachment					
		Density (ft2 / fastener)		Parts per 4 x 4' board		Parts per 4 x 8' board	
0 < P < -45.0*		1.6		10		20	

Installation (Cont.):

TABLE 4: WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER						
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER						
Assembly No.	Deck (See Note 1)	Thermal Barrier	Insulation Layer(s)		Roof Cover	
			Type	Attach	Membrane	Fastener ¹
#21 (W-8)	Min. 19/32", plywood secured to supports spaced 24" o.c., with 8d common nails spaced max. 6" o.c.	(Optional) Any thermal barrier to obtain fire classification	(Optional) One or more layers, any combination	Prelim. attach	IB PVC Single Ply	IB #14 Heavy Duty Roofing Fasteners, IB #15 XHD Roofing Fasteners (aka IB Magnum Fasteners), #14 Roofgrip or OMG XHD fasteners, minimum 3" long, with IB 2" Barbed Seam Plates, OMG 2" Barbed Plates
Design Pressure (psf)			Roof Cover Attachment (In Seam)			
0 < P ≤ -30.0			12" o.c. within 5" sidelaps spaced 67" o.c.			
-30.0 < P ≤ -45.0			6" o.c. within 5" sidelaps spaced 67" o.c.			
-45.0 < P ≤ -52.5			4" o.c. within 5" sidelaps spaced 67" o.c.			
-52.5 < P ≤ -60.0			3" o.c. within 5" sidelaps spaced 67" o.c.			

TABLE 4 (Continued): WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER						
SYSTEM TYPE D: PRELIMINARILY ATTACHED INSULATION, MECHANICALLY ATTACHED ROOF COVER						
Assembly No.	Deck (See Note 1)	Thermal Barrier	Insulation Layer(s)		Roof Cover	
			Type	Attach	Membrane	Fastener ¹
#22 (W-9)	Min. 15/32", APA rated CDX, 5 ply plywood attached to roof framing members spaced max. 6" o.c.	(Optional) Any thermal barrier to obtain fire classification	One or more layers, any combination	Prelim. attach	IB PVC Single Ply	IB #14 Heavy Duty Roofing Fasteners, #14 Roofgrip with IB 2" Barbed Seam Plates, OMG 2" Barbed Plates
Design Pressure (psf)			Roof Cover Attachment (In Seam)			
0 < P ≤ -37.5			6-inch o.c. within 5" sidelaps spaced 67" o.c.			

Installation (Cont.):

TABLE 5: WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER					
SYSTEM TYPE E: NON-INSULATED, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Deck (See Note 1)	Thermal Barrier		Roof Cover	
		Type	Attach	Membrane	Fasteners
#23 (W-10)	Min. 19/32", plywood secured to supports spaced 24" o.c., with 8d common nails spaced max. 6" o.c.	(Optional) Any thermal barrier to obtain fire classification	Loose laid	IB PVC Single Ply	IB #14 Heavy Duty Roofing Fasteners, IB #15 XHD Roofing Fasteners (aka IB Magnum Fasteners), #14 Roofgrip or OMG XHD fasteners with IB 2" Barbed Seam Plates, OMG 2" Barbed Plates
Design Pressure (psf)		Roof Cover Attachment (In Seam)			
0 < P ≤ -30.0		12" o.c. within 5" sidelaps spaced 67" o.c.			
-30.0 < P ≤ -45.0		6" o.c. within 5" sidelaps spaced 67" o.c.			
-45.0 < P ≤ -52.5		4" o.c. within 5" sidelaps spaced 67" o.c.			
-52.5 < P ≤ -60.0		3" o.c. within 5" sidelaps spaced 67" o.c.			

TABLE 5 (Continued): WOOD DECKS - NEW CONSTRUCTION or REROOF (Tear-Off) or RECOVER					
SYSTEM TYPE E: NON-INSULATED, MECHANICALLY ATTACHED ROOF COVER					
Assembly No.	Deck (See Note 1)	Thermal Barrier		Roof Cover	
		Type	Attach	Membrane	Fasteners
#24 (W-11)	Min. 15/32", APA rated CDX, 5 ply plywood attached to roof framing members spaced max. 6" o.c.	(Optional) Any thermal barrier to obtain fire classification	Loose laid	IB PVC Single Ply	IB #14 Heavy Duty Roofing Fasteners, #14 Roofgrip with IB 2" Barbed Seam Plates, OMG 2" Barbed Plates
Design Pressure (psf)		Roof Cover Attachment (In Seam)			
0 < P ≤ -37.5		6" o.c. within 5" sidelaps spaced 67" o.c.			

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