

Exterior Research & Design, L.L.C.

Building Science and Envelope Consultants

Certificate of Authorization #9503



Evaluation Report 03901.06.05

**Evaluation
of
IB Single Ply Roof Systems
for
Florida Product Approval
#FL4672**

Prepared for:
IB Roof Systems, Inc.
2877 Chad Drive
Eugene, Oregon 97408

Prepared by:
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Florida Registration No. 59166
Florida DCA ANE1983

Date of Issuance:
June 9, 2005

Manufacturer: IB Roof Systems, Inc.
2877 Chad Drive
Eugene, OR 97408

Product Category: Roofing

Sub-Category: Single Ply Roof Systems

Evaluation Method: Method 1: Products specifically addressed in the FBC through performance criteria and standardized testing or comparative rational analysis methods.

Compliance Statement: IB Single-Ply Membrane single ply roof systems, as marketed by IB Roof Systems, Inc., have demonstrated compliance with the following sections of the Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

Standards:	Section	Property	Standard	Year
Non-HVHZ:	1504.3.1	Wind	FM 4470	1992
	1504.6	Weathering	ASTM G154	2000
	1504.7	Impact	FM 4470	1992
	1505.1	Fire	UL 790	1997
	1507.13.2	Physicals	ASTM D4434	1996

Product / System Description: IB PVC/CPA and IB PVC/CPA Fleece Backed are nominal 40-mil (1.0 mm) to 80-mil (2.0-mm) thick polyester fabric (9x9, 1000 denier) reinforced plasticized polyvinyl chloride (PVC) roof cover with a white, gray, blue, brown, tan or green weathering surface and a black or gray underside. IB Single-Ply Membrane is supplied in rolls 72 in. (1.8 m) by 100 ft (33.3 m) long. Side and end laps are sealed using hot air welding. The roof cover is fully adhered to Approved substrates using IB Water Borne Adhesive or Ashland Pliobond 7008, as outlined in the Limitations / Conditions of Use herein.

Quality Assurance Documentation:

1. Listing through FM Approvals (QUA 1860). Continued QA documentation comes in the form of the FM Approval Mark on all product containers.
2. Non-IB Roof System materials used in the system shall be manufactured under a quality assurance program administered by a Florida DCA Approved Quality Assurance Entity, and materials and/or packaging shall carry the appropriate labeling from the Quality Assurance Entity.
3. All testing forming the basis of this report was conducted in full accordance with the requirements of the Florida Building Code. System testing was conducted using full-scale test specimens using the appropriate test standard.

Installation Requirements:

1. IB Roof Systems roof covers shall be installed in accordance with IB Roof Systems' published installation instructions, subject to the Limitations / Conditions of Use noted below.
2. System wind load resistance information is set forth in Appendix 1.

Limitations / Conditions of Use:

1. This Evaluation Report is not for use within the HVHZ.
2. Refer to a current Approved Roofing Materials Directory for fire rating of this product.
3. Steel decking and its attachment shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 22 to the satisfaction of the AHJ.
4. Structural concrete roof decks shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 19 Code to the satisfaction of the AHJ.
5. Lightweight concrete roof decks shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Section 1917 to the satisfaction of the AHJ.
6. Existing roof decks shall comply with the applicable sections of the FBC.
7. For recover installations, the existing roof shall be examined in accordance with FBC Section 1510.
8. For mechanically fastened insulation, the maximum design pressure for the selected assembly shall meet or exceed the field area (Zone 1) design criteria. Perimeter and corner areas (Zones 2 and 3) shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria.
9. For adhered insulation, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16. No rational analysis is permitted for these systems.
10. For mechanically fastened insulation to existing roof decks (reroof or recover), fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with TAS 105.
11. For existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the membrane or insulation adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with ASTM E907 or FM LPDS 1-52 shall be conducted on mock-ups of the proposed new roof assembly.
12. For existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the AHJ, as documented through field uplift testing in accordance with ASTM E907 or FM LPDS 1-52.

Certification of Independence:

1. ERD East does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. ERD East is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

Continued Compliance:

This compliance evaluation is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify ERD or Robert Nieminen, P.E. if any of these changes take place.

Respectfully submitted,



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Mandatory Appendix 1 follows

**TABLE 1: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS OVER MECHANICALLY ATTACHED INSULATION OVER STEEL AND CONCRETE DECKS**

System No.	Deck (A) & (B)	Insulation Layer		Roof Cover	Maximum Design Pressure (D)
		Type	Attachment (C)		
SC-1	Min. 22 ga. type B, Grade 33 steel or min. 2,500 psi concrete	Min 1.5 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD, DL or CF (concrete only) with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 3.2 ft ² (five per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-30.0 psf
SC-2	Min. 22 ga. type B, Grade 33 steel or min. 2,500 psi concrete	Min 1.5 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD, DL or CF (concrete only) with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 2 ft ² (eight per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-45.0 psf
SC-3	Min. 22 ga. type B, Grade 33 steel or min. 2,500 psi concrete	Min 2.0 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD, DL or CF (concrete only) with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 4 ft ² (four per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-45.0 psf

- A. For existing decks in a re-roof (tear off) or recover installation, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with TAS 105.
- B. Steel decking and its attachment shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 22 to the satisfaction of the AHJ. Structural concrete roof decks shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 19 to the satisfaction of the AHJ
- C. For steel deck, fasteners shall engage the top flange of the steel deck and shall be of sufficient length for minimum ¾ inch penetration. For concrete deck, fasteners shall be installed with the manufacturer's recommended pilot hole with a minimum 1-inch embedment depth.
- D. The maximum design pressure for the selected assembly shall meet or exceed the field area (Zone 1) design criteria. Perimeter and corner areas (Zones 2 and 3) shall employ an insulation attachment density designed by a qualified design professional to resist the elevated pressure criteria.

**TABLE 2A: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS OVER NON-INSULATED STRUCTURAL CONCRETE DECKS**

System No.	Deck (E)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment	Type	Attachment		
C-1	Min. 2,500 psi structural concrete	None	N/A	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-512.5 psf

**TABLE 2B: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS OVER BONDED INSULATION OVER STRUCTURAL CONCRETE DECKS**

System No.	Deck (E)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment (F)	Type	Attachment (F)		
C-2	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive, Fastac Roofing Adhesive or Weather-Tite One Step Foamable Adhesive	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-215.0 psf
C-3	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-255.0 psf
C-4	Min. 2,500 psi structural concrete	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Back-mopped in hot asphalt	Min. ¼-inch DensDeck or SECUROCK®	Back-mopped in hot asphalt	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-202.5 psf
C-5	Min. 2,500 psi structural concrete	One or more layers Tapered or flat ACFoam-II, ENRGY 3, Iso 95+ GL, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max	Applied in IBond or Pliodeck Insulation Adhesive	Min. ½-inch FM Approved high density wood fiberboard, min. ¼-inch DensDeck or SECUROCK® or minimum 7/16-inch plywood or OSB	Applied in IBond or Pliodeck Insulation Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-105.0 psf

**TABLE 2B: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS OVER BONDED INSULATION OVER STRUCTURAL CONCRETE DECKS**

System No.	Deck (E)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment (F)	Type	Attachment (F)		
C-6	Min. 2,500 psi structural concrete	One or more layers Tapered or flat ACFoam-II, ENRGY 3, Iso 95+ GL, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max	Applied in IBond or Pliodeck Insulation Adhesive	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-157.5 psf
C-7	Min. 2,500 psi structural concrete	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Applied in IBond or Pliodeck Insulation Adhesive	Min. ½-inch FM Approved high density wood fiberboard, min. ¼-inch DensDeck or SECUROCK® or minimum 7/16-inch plywood or OSB	Applied in IBond or Pliodeck Insulation Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-67.5 psf
C-8	Min. 2,500 psi structural concrete	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	TITASET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	TITASET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-180.0 psf
C-9	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick ACFoam II	Applied in OlyBond 500 Adhesive Fastener	(Optional) Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-150.0 psf
C-10	Min. 2,500 psi structural concrete	One or more layers, min. 1.0" thick ASTM C578, type IX EPS board	Applied in OlyBond 500 Adhesive Fastener	Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-52.5 psf
C-11	Min. 2,500 psi structural concrete	One or more layers, min. 2.0" thick ASTM C578, type IX EPS board	Applied in OlyBond 500 Adhesive Fastener	Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-120.0 psf

TABLE 2B: WIND UPLIFT PERFORMANCE							
IB ROOF SYSTEMS OVER BONDED INSULATION OVER STRUCTURAL CONCRETE DECKS							
System No.	Deck (E)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment (F)	Type	Attachment (F)		
C-12	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in Weather-Tite One Step Foamable Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in Weather-Tite One Step Foamable Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-232.5 psf
C-13	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick ACFoam II	Applied in Insta-Stik Roofing Adhesive	(Optional) Min. ¼-inch DensDeck or SECUROCK®	Applied in Insta-Stik Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-120.0 psf
C-14	Min. 2,500 psi structural concrete	One or more layers min. 1.5" thick Multi-Max FA	Applied in Insta-Stik Roofing Adhesive	(Optional) Min. ¼-inch DensDeck or SECUROCK®	Applied in Insta-Stik Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-67.5 psf
C-15	Min. 2,500 psi structural concrete	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Applied in Insta-Stik Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in Insta-Stik Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-120.0 psf

TABLE 2C: WIND UPLIFT PERFORMANCE							
IB ROOF SYSTEMS OVER BONDED INSULATION OVER TEMPORARY ROOF / VAPOR BARRIER OVER CONCRETE DECKS							
System No.	Deck (E) & (H)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment (F)	Type	Attachment (F)		
C-15	Min. 2,500 psi structural concrete with temporary roof / vapor barrier ^H	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-215.0 psf
C-16	Min. 2,500 psi structural concrete with temporary roof / vapor barrier ^H	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-255.0 psf

TABLE 2C: WIND UPLIFT PERFORMANCE							
IB ROOF SYSTEMS OVER BONDED INSULATION OVER TEMPORARY ROOF / VAPOR BARRIER OVER CONCRETE DECKS							
System No.	Deck (E) & (H)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (G)
		Type	Attachment (F)	Type	Attachment (F)		
C-17	Min. 2,500 psi structural concrete with temporary roof / vapor barrier ^H	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Back-mopped in hot asphalt	Min. ¼-inch DensDeck or SECUROCK®	Back-mopped in hot asphalt	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-202.5 psf
C-18	Min. 2,500 psi structural concrete with temporary roof / vapor barrier ^H	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	TITASET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	TITASET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-180.0 psf

- E. Structural concrete roof decks shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 19 to the satisfaction of the AHJ.
- F. Insulation adhesive application rates are as follows:
- Hot asphalt at 25 lbs/square.
 - IBond or Pliodeck Insulation Adhesive in continuous ½-inch beads spaced 12" o.c. Ribbons in all subsequent layers must be installed perpendicular to the preceding layer.
 - Insta-Stik Roofing Adhesive in continuous ¾ to 1-inch beads spaced 12" o.c.
 - Weather-Tite One Step Foamable Adhesive in continuous ¾ to 1-inch ribbons spaced 12" o.c.
 - OlyBond 500 Adhesive Fastener in continuous ¾ to 1-inch ribbons spaced 12" o.c.
 - TITASET Roofing Adhesive or Fastac Roofing Adhesive in continuous 3 to 3½-inch ribbons spaced 12" o.c.
- G. The maximum design pressure for the selected assembly shall meet or exceed the critical design criteria. No rational analysis to address higher design pressures is permissible.
- H. Temporary roof / vapor barrier for Table 2C shall be one of the following. Consult the vapor barrier / temporary roof system manufacturer for compatibility of cold adhesives used in roof assemblies involving EPS material.
- Hot-Applied: Primed concrete followed by optional hot asphalt applied base and/or ply sheets approved for use with roof cover followed by asphalt applied CertainTeed Flintlastic GMS, Firestone SBS Cap, GAF Ruberoid 30, Johns Manville DynaGlas, Soprema Elastophene GR or Sopralene 180 or 250 GR or Siplast Paradiene 30.
 - Torch-Applied: Primed concrete followed by optional torch-applied base membrane approved for use with roof cover followed by CertainTeed Flintlastic GTA or GTS, Firestone APP 180 FR Cap, GAF Ruberoid Torch GR, Johns Manville APPeX 4.5M, Soprema Elastophene Flam GR or Sopralene Flam 180 or 250 GR or Siplast Paradiene 30 TG.
 - Self-Adhering: Primed concrete followed by optional self-adhered base membrane approved for use with roof cover followed by CertainTeed Flintlastic SA Cap, GAF Liberty Cap, Johns Manville DynaGrip Cap or JMCleanBond Cap, Polyglass Elastoflex SA VG or Soprema Colphene FR GR or Colphene HR FR GR.
 - Cold-Applied: Primed concrete followed by optional cold-applied base and/or ply sheet approved for use with the roof cover followed by CertainTeed Flintlastic GMS in FlintBond Adhesive, GAF Ruberoid 30 in Matrix 102 Adhesive, Johns Manville DynaGlas in MBR Adhesive, Polyglass Elastoflex VG in 1000 MB SBS Adhesive, Soprema Elastophene GR or Sopralene 180 or 250 GR in FM Adhesive or FM Adhesive (VOC) or Siplast Paradiene 30 in PA-311 Adhesive.

TABLE 3: WIND UPLIFT PERFORMANCE						
IB ROOF SYSTEMS OVER CELLULAR LIGHTWEIGHT INSULATING CONCRETE DECKS						
System No.	Deck (I)	Lightweight Insulating Concrete Deck (J)			Roof Cover	Maximum Design Pressure (K)
		Slurry	EPS Board	Top Coat		
LWC-1	Min. 2,500 psi structural concrete	(Optional if no EPS board is installed) Min. 200 psi, min. 1/8-inch thick cellular LWC slurry coat applied to the concrete deck	(Optional) Min. 1.0-inch thick, min. 1.0 pcf Apache Holey Board or other Approved EPS board applied into the slurry coat	Min. 200 psi, min. 2-inch thick cellular LWC top coat applied to the concrete deck or to the EPS board	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-242.5 psf

- I. Structural concrete roof decks shall be as specified by the Designer of Record to meet project design criteria in accordance with FBC Chapter 19 to the satisfaction of the AHJ.
- J. Acceptable cellular lightweight concrete include Celcore, Elastizell and Mearlcrete installed in accordance with FBC Section 1917.
- K. The maximum design pressure for the selected assembly shall meet or exceed the critical design criteria. No rational analysis to address higher design pressures is permissible.

TABLE 4A: WIND UPLIFT PERFORMANCE						
IB ROOF SYSTEMS IN RECOVER APPLICATIONS WITH MECHANICALLY ATTACHED INSULATION						
System No.	Deck (L)	Insulation Layer		Roof Cover	Maximum Design Pressure	Fastener Design Value (M)
		Type	Attachment (M)			
R-1	Steel or concrete	Min 1.5 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD or DL with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 3.2 ft ² (five per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-30.0 psf	96.0 lbf
R-2	Steel or concrete	Min 1.5 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD or DL with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 2 ft ² (eight per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-45.0 psf	90.0 lbf
R-3	Steel or concrete	Min 2.0 in. thick, max. 4 x 4 ft dimension ACFoam-II, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max FA	Mechanically attached with Dekfast #12 (steel only) or #14 with Hex Plate, Olympic #10 (steel only), Std (steel only) or HD with Std Plate, Tru-Fast TP (steel only), DP (steel only), HD or DL with MP-3 or Plastic plate or IB Std (steel only) or HD Fastener with IB Insulation Plate at 1 per 4 ft ² (four per 4 x 4 ft board)	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-45.0 psf	180 lbf

**TABLE 4B: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS IN RECOVER APPLICATIONS WITH BONDED INSULATION**

System No.	Substrate (L) & (N)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (N)
		Type	Attachment (N)	Type	Attachment		
R-4	Existing BUR or modified bitumen	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive, Fastac Roofing Adhesive or Weather-Tite One Step Foamable Adhesive	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-215.0 psf
R-5	Existing BUR or modified bitumen	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in hot asphalt, TITSEET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-255.0 psf
R-6	Existing BUR or modified bitumen	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Back-mopped in hot asphalt	Min. ¼-inch DensDeck or SECUROCK®	Back-mopped in hot asphalt	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-202.5 psf
R-7	Existing BUR or modified bitumen	One or more layers Tapered or flat ACFoam-II, ENRGY 3, Iso 95+ GL, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max	Applied in IBond or Pliodeck Insulation Adhesive	Min. ½-inch FM Approved high density wood fiberboard, min. ¼-inch DensDeck or SECUROCK® or minimum 7/16-inch plywood or OSB	Applied in IBond or Pliodeck Insulation Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-105.0 psf
R-8	Existing BUR or modified bitumen	One or more layers Tapered or flat ACFoam-II, ENRGY 3, Iso 95+ GL, Hy-Therm AP Roof Insulation, Hy-Therm(a) AP Roof Insulation or Multi-Max	Applied in IBond or Pliodeck Insulation Adhesive	None	N/A	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-157.5 psf
R-9	Existing BUR or modified bitumen	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	Applied in IBond or Pliodeck Insulation Adhesive	Min. ½-inch FM Approved high density wood fiberboard, min. ¼-inch DensDeck or SECUROCK® or minimum 7/16-inch plywood or OSB	Applied in IBond or Pliodeck Insulation Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-67.5 psf

**TABLE 4B: WIND UPLIFT PERFORMANCE
IB ROOF SYSTEMS IN RECOVER APPLICATIONS WITH BONDED INSULATION**

System No.	Substrate (L) & (N)	Base Insulation Layer(s)		Top Insulation Layer		Roof Cover	Maximum Design Pressure (N)
		Type	Attachment (N)	Type	Attachment		
R-10	Existing BUR or modified bitumen	One or more layers, min. 1.5" thick ASTM C578, type IX EPS board	TITSEET Roofing Adhesive or Fastac Roofing Adhesive	Min. ¼-inch DensDeck or SECUROCK®	TITSEET Roofing Adhesive or Fastac Roofing Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-180.0 psf
R-11	Existing BUR or modified bitumen	One or more layers min. 1.5" thick ACFoam II	Applied in OlyBond 500 Adhesive Fastener	(Optional) Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-150.0 psf
R-12	Existing BUR or modified bitumen	One or more layers, min. 1.0" thick ASTM C578, type IX EPS board	Applied in OlyBond 500 Adhesive Fastener	Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-52.5 psf
R-13	Existing BUR or modified bitumen	One or more layers, min. 2.0" thick ASTM C578, type IX EPS board	Applied in OlyBond 500 Adhesive Fastener	Min. ¼-inch DensDeck or SECUROCK®	Applied in OlyBond 500 Adhesive Fastener	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-120.0 psf
R-14	Existing BUR or modified bitumen	One or more layers min. 1.5" thick ACFoam II or Multi-Max FA	Applied in Weather-Tite One Step Foamable Adhesive	Min. ¼-inch DensDeck or SECUROCK®	Applied in Weather-Tite One Step Foamable Adhesive	IB PVC/CPA or IB PVC/CPA Fleece-Backed in IB Water Borne Adhesive or Pliobond 7008 at 280 ft ² /gal.	-232.5 psf

- L. The existing roof deck shall comply with the applicable sections of the FBC. The existing roof shall be examined in accordance with FBC Section 1510. All footnotes in preceding Tables apply, depending on the deck type.
- M. For mechanically fastened insulation, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum fastener performance requirement. Testing and analysis shall be in accordance with TAS 105.
- N. For bonded insulation systems in recover installations, the existing roof surface shall be examined for compatibility with the membrane or insulation adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing in accordance with ASTM E907 or FM LPDS 1-52 shall be conducted on mock-ups of the proposed new roof assembly. Moreover, the existing roof assembly shall be capable of resisting the design pressure requirements for the project on its own merit, as demonstrated through field testing in accordance with ASTM E907 or FM LPDS 1-52, to the satisfaction of the AHJ.