

ICC-ES Evaluation Report

ESR-2018

Issued July 1, 2009

This report is subject to re-examination in one year.

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DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07550—Modified Bituminous Sheet Roofing

REPORT HOLDER:

POLYGLASS USA, INC.
150 LYON DRIVE
FERNLEY, NEVADA 89408-9901
(800) 222-9782
www.polyglass.com

EVALUATION SUBJECT:

MODIFIED BITUMEN ROOFING MEMBRANES: APP
CONVENTIONAL, APP SELF-ADHERED, SBS
CONVENTIONAL AND SBS SELF-ADHERED

ADDITIONAL LISTEE:

MULE-HIDE PRODUCTS CO., INC.
2924 WYETTA DRIVE
BELOIT, WISCONSIN 53511
(800) 786-1492
www.mulehide.com

1.0 EVALUATION SCOPE

Compliance with the following code:

2006 *International Building Code*® (IBC)

Properties evaluated

- Weather resistance
- Fire classification
- Wind uplift resistance
- Impact resistance

2.0 USES

Polyglass USA, Inc., modified bitumen roofing membranes are used as roof coverings in Class A, B or C adhered membrane roofing systems.

3.0 DESCRIPTION

3.1 General:

The Polyglass USA, Inc., modified bitumen roofing systems consist of a Polyglass single-ply membrane (with or without multiple underlayments), insulation where used, barrier board where used, flashing, mechanical fasteners, and asphalt that are installed on a combustible or noncombustible deck. See Table 1 for Polyglass USA product trade names with corresponding product names for Mule-Hide Products Co., Inc.

3.2 Membranes:

3.2.1 APP Conventional:

3.2.1.1 Polyflex: Polyflex, Polyflex G, and Polyflex G FR (Fire Retardant) comply with ASTM D 6222, Type I, and are modified bitumen membranes utilizing atactic polypropylene (APP) as the modifier and polyester as the reinforcement. Material thickness is nominally 157 mils (4.0 mm) for Polyflex and 177 mils (4.5 mm) for Polyflex G and Polyflex G FR. For Polyflex G and Polyflex G FR, the top surface is coated with mineral granules, and for Polyflex it is smooth; the bottom surface of both membranes is burn-off polyethylene. Nominal weight of the membranes per 100 square feet (9.3 m²) of coverage is 90 pounds (40.5 kg) for Polyflex, 105 pounds (47.25 kg) for Polyflex G, and 110 pounds (49.5 kg) for Polyflex G FR. Roll size is 32.67 feet by 3.28 feet (10 m by 1 m).

3.2.1.2 Polyfresko Torch: Polyfresko Torch and Polyfresko Torch FR are identical to the Polyflex G and Polyflex G FR, respectively, except that the top surfaces of both the Polyfresko Torch and Polyfresko Torch FR are colored white.

3.2.2 APP Self-adhered:

3.2.2.1 Polyflex SA (Self-adhered): Polyflex SA P, Polyflex SA P FR, Polyflex SA P G, and Polyflex SA P G FR comply with ASTM D 6222, Type I, and are modified bitumen membranes utilizing an APP modified compound on the top, a self-adhesive compound on the bottom, and a polyester reinforcement. Polyflex SA P and Polyflex SA P FR are Grade S products that are finished on the top surface with a polyolefin film, and have a nominal thickness of 140 mils (3.5 mm). Polyflex SA P G and Polyflex SA P G FR are Grade G products that are finished on the top surface with mineral granules, and have a nominal thickness of 140 mils (3.5 mm). All Polyflex SA P products are finished on the bottom surface with a split/perforated release film, which protects the underside adhesive compound and is removed during installation. Nominal weight of the membrane per 100 square feet (9.3 m²) of coverage is 90 pounds (40.8 kg) for Grade S products and 95 pounds (43.0 kg) for Grade G products. Roll size is 32.80 feet by 3.28 feet (10 m by 1 m).

3.2.2.2 Polyfresko APP SA P: Polyfresko APP SA P and Polyfresko APP SA P FR are identical to the Polyflex SA P and Polyflex SA P FR, respectively, except the top surfaces of both the Polyfresko APP SA P and Polyfresko APP SA P FR are colored white.

3.2.2.3 PolyKool: PolyKool complies with ASTM D 6222, Type I, and is a modified bitumen membrane utilizing an APP modified compound on the top, a self-adhesive

compound on the bottom, and a polyester reinforcement. PolyKool is a Grade S product that is finished on the top surface with a reflective white film, and has a nominal thickness of 140 mils (3.5 mm). PolyKool is finished on the bottom surface with a split/perforated release film which protects the underside adhesive compound and is removed during installation. Nominal weight of the membrane per 100 square feet (9.3 m²) of coverage is 85 pounds (38.5 kg). Roll size is 32.80 feet by 3.28 feet (10 m by 1 m).

3.2.2.4 Polybianco: Polybianco is identical to the PolyKool, except the top surface of the Polybianco is colored white.

3.2.3 SBS Conventional:

3.2.3.1 Elastoflex: Elastoflex S6 G and Elastoflex S6 G FR membranes comply with ASTM D 6164, Type I, and are bituminous membranes utilizing an SBS modified compound and a polyester reinforcement. The top surface is coated with mineral granules, and the bottom surface is either sand-backed for hot asphalt and cold process adhesive applications or burn-off polyethylene for torch applications. Material thickness is nominally 138 mils (3.5 mm). Nominal weight of the membranes per 100 square feet (9.3 m²) of coverage is 110 pounds (50 kg). Roll size is 32.83 feet by 3.28 feet (10 m by 1 m).

Elastoflex VG and Elastoflex VG FR membranes comply with ASTM D 6163, Type I, and are bituminous membranes utilizing an SBS modified compound and a fiberglass reinforcement. The top surface is coated with mineral granules, and the bottom surface is either sand-backed for hot asphalt and cold process adhesive applications or burn-off polyethylene for torch applications. Material thickness is nominally 138 mils (3.5 mm). Nominal weight of the membranes per 100 square feet (9.3 m²) of coverage is 98 pounds (44 kg). Roll size is 32.83 feet by 3.28 feet (10 m by 1 m).

3.2.3.2 Polyfresko S6: Polyfresko S6 and Polyfresko S6 FR are identical to the Elastoflex S6 G and Elastoflex S6 G FR, respectively, except the top surfaces of both the Polyfresko S6 and Polyfresko S6 FR are colored white.

3.2.3.3 Elastoshield TS4: Elastoshield TS4 and Elastoshield TS4 FR membranes comply with ASTM D 6164, Type I, and are bituminous membranes utilizing an SBS modified compound and a polyester reinforcement. The top surface is coated with mineral granules, and the bottom surface is either smooth or finished with fine sand. Material thickness is nominally 177 mils (4.5 mm). Nominal weight of the membranes per 100 square feet (9.3 m²) of coverage is 108 pounds (49 kg). Roll size is 32.83 feet by 3.28 feet (10 m by 1 m).

3.2.3.4 Elastobase / Elastobase Poly: A bituminous membrane composed of either a fiberglass reinforcing mat (for Elastobase) or a polyester reinforcing mat (for Elastobase Poly), an SBS modified bituminous compound, a mineral surface available in several colors, and a fine sand bottom surface. The roll thickness is 79 mils (2 mm). Nominal weight of the membranes per 100 square feet (9.3 m²) is 50 pounds (23 kg). The roll dimension is 65.67 feet by 3.28 feet (20 m by 1 m) with an approximate coverage of 200 ft² (9.3 m²).

3.2.4 SBS Self-adhered:

3.2.4.1 Elastoflex SA (Self-adhered): Elastoflex SA V Base, Elastoflex SA V FR Base, Elastoflex SA Vent, and Elastoflex SA Vent FR comply with ASTM D 6163, Type I, and are modified bitumen base sheet or ply sheet membranes utilizing a styrene butadiene styrene (SBS)

modified compound on the top, a self-adhesive compound on the bottom, and a fiberglass reinforcement. Elastoflex SA V Base, Elastoflex SA V FR Base, Elastoflex SA Vent, and Elastoflex SA Vent FR are Grade S (smooth surface) products that are finished on the top surface with a polyolefin film, and have a nominal thickness of 80 mils (2.0 mm). All Elastoflex SA V products are finished on the bottom surface with a split/perforated release film, which protects the underside adhesive compound and is removed during installation. Nominal weight of the base sheet or ply sheet membranes per 100 square feet (9.3 m²) of coverage is 49 pounds (22.2 kg). Roll size is 65.67 feet by 3.28 feet (20 m by 1 m).

Elastoflex SA P, Elastoflex SA P FR, Elastoflex SA P G, and Elastoflex SA P G FR membranes comply with ASTM D 6164, Type I, and are modified bitumen membranes utilizing an SBS modified compound on the top, a self-adhesive compound on the bottom, and a polyester reinforcement. Elastoflex SA P and Elastoflex SA P FR are Grade S products that are finished on the top surface with a polyolefin film, and have a nominal thickness of 116 mils (2.9 mm). Elastoflex SA P G and Elastoflex SA P G FR are Grade G (granule surface) products that are finished on the top surface with mineral granules, and have a nominal thickness of 130 mils (3.3 mm). All Elastoflex SA P membrane products are finished on the bottom surface with a split/perforated release film, which protects the underside adhesive compound and is removed during installation. Nominal weight of the membranes per 100 square feet (9.3 m²) of coverage is 82 pounds (37.2 kg) for Grade S products and 95 pounds (43.0 kg) for Grade G products. Roll size is 32.80 feet by 3.28 feet (10 m by 1 m).

3.2.4.2 Polyfresko SBS SA P: Polyfresko SBS SA P and Polyfresko SBS SA P FR are identical to the Elastoflex SA P and Elastoflex SA P FR, respectively, except the top surfaces of both the Polyfresko SBS SA P and Polyfresko SBS SA P FR are colored white.

3.3 Insulation:

See Tables 2 and 3 for insulations for use with specific roofing systems. Foam plastic insulation, where used, must have a flame-spread index of not more than 75 when tested at the maximum thickness intended for use in accordance with ASTM E 84.

3.4 Barrier Board:

Barrier board, where used, must be minimum 1/4-inch-thick (12.7 mm) DensDeck manufactured by G-P Gypsum Corporation or minimum 5/8-inch-thick (15.8 mm) Type X gypsum board.

3.5 Base Sheet, Slip Sheet and Ply Sheet:

Unless otherwise stated in Table 2 or 3, the base, slip and ply sheets must be either Elastobase or Elastobase Poly as described in Section 3.2.3.4; a membrane described in Section 3.2; any ASTM D 4601, Type II, base sheet; or any UL-classified Type G2 base sheet.

3.6 Fasteners:

Fasteners and plates are described in Sections 3.6.1 through 3.6.9. The length of fasteners varies and must be sufficient for the fastener to protrude through steel and wood decks a minimum of 3/8 inch (9.5 mm). For concrete decks, 3/16-inch-diameter (5 mm) holes must be predrilled and at least 1 inch (25.4 mm) of the screw must penetrate into the concrete deck.

3.6.1 Dekfast #12 and Polygrip #12: These are corrosion-resistant, Senti-coated, carbon steel, self-drilling screws with a 0.167-inch (4.2 mm) shank diameter, 0.448-

inch (11.3 mm) head diameter and a No. 3 Phillips recess. The screws are for installation in wood and steel decks and for use with Dekfast Hex Plates, Polygrip Hex Plates, IF/IG-70x70 plates or IF-50 plates.

3.6.2 Dekfast #14 and Polygrip #14: These are corrosion-resistant, Sentri-coated, carbon steel, self-drilling screws with a 0.181-inch (4.6 mm) shank diameter, 0.448-inch (11.3 mm) head diameter and a No. 3 Phillips recess. The screws are for installation in wood, steel and structural concrete decks and for use with Dekfast Hex Plates, Polygrip Hex Plates, Dekfast 2¹/₂-inch HS Membrane Plates, Polygrip 2¹/₂-inch HS Membrane Plates, IF/IG-70x70 plates or IF-50 plates.

3.6.3 Dekfast #15 HS and Polygrip #15: These are corrosion-resistant, Sentri-coated, carbon steel, self-drilling screws with a 0.204-inch (5.2 mm) shank diameter, 0.448-inch (11.3 mm) head diameter and a No. 3 Phillips recess. The screws are for installation in steel and structural concrete decks and for use with Dekfast 2¹/₂-inch HS Membrane Plates or Polygrip 2¹/₂-inch HS Membrane Plates.

3.6.4 Isofast IF2: These are corrosion-resistant, coated, carbon steel, self-drilling screws with a 0.153-inch (3.9 mm) shank diameter, 0.448-inch (11.3 mm) head diameter and a No. 3 Phillips recess. The screws are for installation in wood and steel decks and for use with IF/IG-70x70 plates.

3.6.5 ITW Buildex Lite Weight Concrete Fasteners: These are 1.75-inch-long-by-1.1-inch-wide (44.5 mm by 28 mm), painted galvanized (G90) steel fasteners with an integral 2.7-inch-diameter (68.8 mm) AZ55 Galvalume plate. They are designed for use in lightweight concrete decks.

3.6.6 Dekfast Hex and Polygrip Hex Plates: These are 2⁷/₈-inch-by-3¹/₄-inch (73 mm by 83 mm), 0.018-inch-thick (0.46 mm) hexagonal steel, and have an AZ-50 Galvalume coating complying with ASTM A 792.

3.6.7 Dekfast 2¹/₂" HS and Polygrip 2¹/₂" HS Membrane Plates: These are 2¹/₂-inch-diameter (64 mm), 0.036-inch-thick (0.9 mm) steel, and have an AZ-50 Galvalume coating complying with ASTM A 792.

3.6.8 IF/IG 70x70 Plates: These are 2³/₄-inch-by-2³/₄-inch (70 mm by 70 mm), 0.042-inch-thick (1.1 mm) steel, and have a AZ50 Galvalume coating complying with ASTM A 792.

3.6.9 IF-50 Plates: These are 2-inch-diameter (51 mm) nylon with 16 barbs on the underside.

3.7 Asphalt:

The asphalt primer must meet ASTM D 41 specifications. The asphalt must meet ASTM D 312, Type III or IV, specifications.

3.8 Impact Resistance:

The modified bitumen roofing membrane roof coverings described in this report meet requirements for impact resistance based on testing in accordance with FM 4470.

4.0 INSTALLATION

4.1 General:

Installation of the Polyglass USA, Inc., modified bitumen roofing membranes must comply with the IBC, the manufacturer's published installation instructions and this report. The manufacturer's published installation instructions must be available at all times on the job site during installation.

The slope of the roof on which the Polyglass USA, Inc. modified bitumen roofing membrane is installed must be minimum 1/4:12 (2-percent slope) and must not be more than the maximum slope indicated for the particular assembly as listed in Table 2.

Penetrations and terminations of the roof covering must be flashed and made weathertight in accordance with the requirements of the membrane manufacturer and IBC Section 1503.2.

4.2 Fire Classification:

The Polyglass USA, Inc., modified bitumen membrane roofing systems installed in accordance with this report are classified as Class A, B or C roof covering systems in accordance with ASTM E 108 or UL790, as noted in Table 2.

4.3 Wind Resistance:

The allowable wind uplift pressures for the Polyglass USA, Inc., modified bitumen roofing systems described in this report are noted in Table 3.

4.4 Reroofing:

Prior to installation of new roof coverings, inspection in accordance with IBC Section 1510, and approval from the code official having jurisdiction, is required.

Since the composition and/or condition of any particular underlying existing roofing material may vary widely, roof recovery, or installing the adhered systems in this report over an existing roof covering, without removing the existing roof covering, is outside the scope of this report.

5.0 CONDITIONS OF USE

The Polyglass USA, Inc. modified bitumen roofing membranes described in this report comply with, or are suitable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1** Installation and application of the Polyglass modified bitumen roofing membranes must comply with the IBC, the manufacturer's published installation instructions, and this report. The instructions within this report govern if there are any conflicts between the manufacturer's installation instructions and this report.
- 5.2** Polyglass USA, Inc. modified bitumen roofing membranes must be installed by professional roofing contractors trained and approved by the manufacturer.
- 5.3** Foam plastic insulation must be separated from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4.1.5, except when specifically recognized in an ICC-ES evaluation report as outlined in Footnote 3 to Table 2.
- 5.4** Any foam plastic insulation, where used, must bear the label of an approved agency indicating that the foam plastic has a flame-spread index of not more than 75 when tested at the maximum thickness intended for use in accordance with ASTM E 84, subject to the approval of the code official.
- 5.5** Above-deck thermal insulation board must comply with the applicable standards listed in Table 1508.2 of the IBC.
- 5.6** Design wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind uplift pressure listed for the system installed in that particular area. Refer to allowable wind uplift pressure for systems as listed in Table 3.

- 5.7 The allowable wind uplift pressures listed in Table 3 are for the roof covering only. The deck and framing to which the system is attached must be designed for the applicable components and cladding wind loads in accordance with the IBC.
- 5.8 Calculations demonstrating that the required wind resistance is less than the allowable wind resistance must be submitted to the code official for approval.
- 5.9 Where gypsum board is used as barrier board in the roofing assembly, weather protection must be provided to prevent damage to the gypsum board prior to application of the roofing membrane.
- 5.10 The membranes are manufactured at Polyglass facilities in Fernley, Nevada, Hazleton, Pennsylvania, and Winter Haven, Florida, under a quality control program with inspections by Underwriters Laboratories, Inc. (AA-668).

6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Membrane Roof Covering Systems (AC75), dated April 2007.

7.0 IDENTIFICATION

Each roll of the membranes, base sheets and ply sheets described in this report is identified with a label noting the product name (refer to Table 1); the manufacturer's name (Polyglass USA, Inc.) or the name of the additional listee (Mule-Hide Products Co., Inc.); the manufacturer's address; and the evaluation report number (ESR-2018); together with a label noting the name of the inspection agency (Underwriters Laboratories, Inc.).

TABLE 1—PRODUCT TRADE NAMES

POLYGLASS USA, INC.	MULE-HIDE PRODUCTS CO., INC.
Elastoflex SA V Base	Mule-Hide SA-SBS Base Sheet
Elastoflex SA V FR Base	Mule-Hide SA-SBS Base Sheet (FR)
Elastoflex SA Vent	Mule-Hide SA-Vented Base Sheet
Elastoflex SA Vent FR	Mule-Hide SA-Vented Base Sheet (FR)
Elastoflex SA P	Mule-Hide SA-SBS Cap Sheet
Elastoflex SA P FR	Mule-Hide SA-SBS Cap Sheet (FR)
Polyflex SA P	Mule-Hide SA-APP Cap Sheet
Polyflex SA P FR	Mule-Hide SA-APP Cap Sheet (FR)

TABLE 2—FIRE CLASSIFICATIONS⁶

SYSTEM NO.	ROOF CLASS ¹	ROOF DECK ²	MAX. SLOPE	INSULATION / BARRIER BOARDS		ROOF COVERING APPLICATION			
				Barrier Board ⁵	Insulation/ Thickness ^{3,4}	Attachment	Base Sheet or Slip Sheet	Ply Sheet	Membrane
1	A	Noncombustible	1/2:12	None	Min. 1-inch-thick, polyisocyanurate or urethane.	Mechanically attached or loose	Elastobase or type G2, mechanically attached	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Polyflex or Polyflex G, torch-applied. Surface with Kokem "Sunguard Acrylic Roof Coating" at 1 gal./sq., or Karnak No. 97 Fibrated Aluminum Asphalt Roof Coating, or Karnak No. 97 Asbestos Free Aluminum Roof Coating at 1 to 2 gal./square
2	A	Combustible (plywood)	1/2:12	None	Min. 1-inch-thick, 2 or more layers (joints staggered a min. of 6 inches from plywood joints), polyisocyanurate or urethane.	Mechanically attached or loose	Elastobase or type G2, mechanically attached	None	Polyflex or Polyflex G, torch-applied. Surface with Kokem "Sunguard Acrylic Roof Coating" at 1 gal./sq., or Karnak No. 97 Fibrated Aluminum Asphalt Roof Coating, or Karnak No. 97 Asbestos Free Aluminum Roof Coating at 1 to 2 gal./square
3	A	Noncombustible ²	1:12	None	(Optional) Any thickness, polyisocyanurate.	Mechanically attached or applied in hot asphalt	Elastobase or type G2, mechanically attached or applied in hot asphalt	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Polyflex or Polyflex G, torch-applied. Surface with Grundy Industries "a1 MB Aluminum Roof Coating" at 1 to 2 gal./square
4	A	Noncombustible ²	1:12	None	Min. 1-inch-thick, polyisocyanurate or urethane.	Mechanically attached	Elastobase or type G2, mechanically attached	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Polyflex G FR, torch-applied

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 square = 9.29 m²; 1 gal = 3.785 L.

TABLE 2—FIRE CLASSIFICATIONS⁶ (Continued)

SYSTEM NO.	ROOF CLASS ¹	ROOF DECK ²	MAX. SLOPE	INSULATION / BARRIER BOARDS			ROOF COVERING APPLICATION		
				Barrier Board ⁵	Insulation/ Thickness ^{3,4}	Attachment	Base Sheet or Slip Sheet	Ply Sheet	Membrane
5	A	Combustible (plywood)	1/2:12	None	None	N/A	One or more layers Elastobase V or type G2, mechanically attached or applied in hot asphalt	One or more layers Elastobase V or type G2, mechanically attached or applied in hot asphalt	Polyflex G FR, torch-applied
6	A	Combustible (plywood)	1/2:12	None	Min. 2-inch-thick polyisocyanurate.	Mechanically attached	Elastobase V or type G2, mechanically attached or applied in hot asphalt	Elastobase V or type G2, mechanically attached or applied in hot asphalt	Polyflex G FR, torch-applied
7	A	Noncombustible ² (excluding steel)	1:12	None	None	N/A	None	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Deck shall be primed with asphalt primer followed by Polyflex or Polyflex G, torch-applied. Surface with Monsey "Endure Aluminum Roof Coating" at 1.5 gal./square or Grundy Industries "a1 MB Aluminum Roof Coating" at 1-2 gal./square or Polyflex G FR, torch applied (no surfacing)
8	A	Noncombustible ² (excluding steel)	1:12	None	Min. 1-inch-thick, polyisocyanurate.	Mechanically attached	One or more layers Elastobase V or type G2, mechanically attached or applied in hot asphalt	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Polyflex or Polyflex G, torch-applied. Surface with Fields "F530 Heat Shield Aluminum Coating" or "F630 Heat Shield Fibered Aluminum Coating" at 1 1/2 gal./square
9	A	Combustible (plywood)	2 1/2:12	1/4-inch-thick DensDeck	(Optional) Any thickness polyisocyanurate.	Mechanically attached	Elastobase V or type G2, mechanically attached	None	Polyflex G FR, torch-applied

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 square = 9.29 m²; 1 gal = 3.785 L.

TABLE 2—FIRE CLASSIFICATIONS⁶ (Continued)

SYSTEM NO.	ROOF CLASS ¹	ROOF DECK ²	MAX. SLOPE	INSULATION / BARRIER BOARDS			ROOF COVERING APPLICATION		
				Barrier Board ⁵	Insulation/ Thickness ^{3,4}	Attachment	Base Sheet or Slip Sheet	Ply Sheet	Membrane
10	A	Noncombustible ²	1/2:12	None	(Optional) Any thickness, polyisocyanurate.	Mechanically attached or applied in hot asphalt	Elastobase or type G2 mechanically attached or applied in hot asphalt	(Optional) One or more plies of Polyglass Ply 4 or Ply 6, applied in hot asphalt	Polyflex, torch-applied. Surfaced with "300 AFX" Aluminum Roof Coating at 1 1/2 gal./square
11	A	Combustible (plywood)	2:12	Min. 1/4-inch-thick DensDeck ⁷	(Optional) Any thickness, polyisocyanurate.	Mechanically attached	Elastobase (poly/sand) mechanically attached; or Elastoflex SA V Base FR or SA Vent FR, self-adhered	(Optional) Elastoflex SA V Base FR, self-adhered	Polyflex SA P FR, Elastoflex SA P FR, Elastoflex SA V FR, self-adhered, or Polyflex G FR
12	A	Combustible (plywood)	1/2:12	None	None	N/A	Type G2 followed by Elastobase (poly/sand), mechanically attached	(Optional) Elastoflex SA V Base FR, self-adhered	Polyflex SA P FR, Elastoflex SA P FR, self-adhered; or Polyflex G FR
13	A	Noncombustible	2:12	None	Min. 1-inch thick to max. 4-inch-thick, Atlas "AC Foam III" or Hunter Panels "H-Shield"	Mechanically attached or loose laid	Elastobase (poly/sand) mechanically attached; or Elastoflex SA V FR Base or Elastoflex SA Vent FR, self-adhered	None	Polyflex SA P FR, Elastoflex SA P FR, Elastoflex SA V FR, self-adhered; or Polyflex G FR

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 square = 9.29 m²; 1 gal = 3.785 L.

TABLE 2—FIRE CLASSIFICATIONS⁶ (Continued)

SYSTEM NO.	ROOF CLASS ¹	ROOF DECK ²	MAX. SLOPE	INSULATION / BARRIER BOARDS			ROOF COVERING APPLICATION		
				Barrier Board ⁵	Insulation/ Thickness ^{3,4}	Attachment	Base Sheet or Slip Sheet	Ply Sheet	Membrane
14	A	Noncombustible	3:12	None	Min. 1-inch thick to max. 4-inch-thick, Atlas "AC Foam III" or Hunter Panels "H-Shield"	Mechanically attached	Elastoflex SA V Base FR or Elastoflex SA Vent FR, self-adhered.	None	Polyflex SA P FR or Elastoflex SA P FR, self-adhered
15	A	Noncombustible	1:12	None	(Optional) Min. 1/2-inch-thick polyisocyanurate	Mechanically attached or adhered	Elastoflex SA V Base or SA Vent, self-adhered	None	Polyflex SA P self-adhered
16	A	Noncombustible	1/2:12	None	1 1/2-inch-thick Hunter Panels "H-Shield"	Mechanically attached	Elastoflex SA V Base FR or SA Vent FR, self-adhered	None	Elastoflex SA P FR, self-adhered
17	A	Noncombustible	3/4:12	None	(Optional) Any thickness, polyisocyanurate.	Mechanically attached or adhered	Elastoflex SA V Base FR or SA Vent FR, self-adhered	None	PolyKool, self-adhered
18	A	Combustible (plywood)	1/2:12	None	(Optional) Any thickness, polyisocyanurate.	Mechanically attached	Type G2, mechanically attached	Elastoflex SA V Base FR, self-adhered.	PolyKool, self-adhered
19	B	Combustible (plywood)	1/2:12	None	(Optional) Any thickness, one or more layers, polyisocyanurate.	Mechanically attached	One or more layers Elastobase or type G2, mechanically attached or applied in hot asphalt	None	Polyflex or Polyflex G, torch-applied. Surface with Fields "F530 Heat Shield Aluminum Coating" or "F630 Heat Shield Fibered Aluminum Coating" at 1 1/2 gal./sq., or Monsey "Endure Aluminum Roof Coating," "Weather Check" or "Pro-Grade Aluminum Roof Coating" at 1.5 gal./sq.

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 square = 9.29 m²; 1 gal = 3.785 L.

TABLE 2—FIRE CLASSIFICATIONS⁶ (Continued)

SYSTEM NO.	ROOF CLASS ¹	ROOF DECK ²	MAX. SLOPE	INSULATION / BARRIER BOARDS		ROOF COVERING APPLICATION			
				Barrier Board ⁵	Insulation/ Thickness ^{3,4}	Attachment	Base Sheet or Slip Sheet	Ply Sheet	Membrane
20	B	Noncombustible	1:12	None	(Optional) Any thickness, polyisocyanurate	Mechanically attached or adhered	Elastobase (poly/sand) mechanically attached or Elastoflex SA V Base or SA Vent, self-adhered	None	Polyflex SA P, Elastoflex SA P, self-adhered, or Polyflex G, heat-fused
21	B	Combustible (plywood)	1/4:12	None	None	N/A	Elastobase (poly/sand) mechanically attached	Elastoflex SA V Base self-adhered.	Polyflex SA P, Elastoflex SA P, self-adhered, or Polyflex G, heat-fused
22	C	Noncombustible	1/2:12	None	1 1/2-inch-thick Hunter Panels "H-Shield"	Mechanically attached	Elastobase (poly/sand), mechanically attached	None	Polyflex SA P, self-adhered

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 square = 9.29 m²; 1 gal = 3.785 L.

FOOTNOTES:

- ¹ Noncombustible deck classifications are applicable for use over combustible decks (min. ¹⁵ 1/32-inch-thick plywood), when minimum 1/2-inch-thick Type X gypsum board or minimum 1/4-inch-thick G-P Gypsum Corporation DensDeck is used directly over the combustible deck with all joints staggered a minimum of 6 inches from plywood joints.
- ² Unless otherwise noted, noncombustible substrates include concrete, lightweight concrete, and steel decks.
- ³ Foam plastic insulation is permitted to be installed over a steel deck without a thermal barrier when there is an ICC-ES evaluation report on the specific foam plastic for direct-to-deck applications. See Section 5.3 and 5.4 of this report for conditions of use.
- ⁴ All foam plastic insulation must be UL classified foamed plastic, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table whichever is less.
- ⁵ The barrier board must be mechanically fastened to the deck with all joints staggered 6 inches from plywood joints.
- ⁶ Unless otherwise specified, the barrier board, insulation, base, slip and ply sheets, membranes and coatings must be UL-Classified for roofing system applications.

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2, 6}		COVERBOARD		ROOF COVER			ALLOWABLE UPLIFT CAPACITY (psf)
			Type	Attachment ^{1, 4}	Type	Attachment ^{1, 4}	Base Sheet	Ply Sheet	Cap Membrane	
1	Min. 2,500 psi concrete	N/A	Min. 1 1/2-inch-thick min. 2.0 pcf polyisocyanurate	1 per 4 ft ²	Min. 3/4-inch-thick FM-approved perlite	Asphalt applied	(Optional) Elastobase, Permaply No. 28 or GAF GAFGLAS #75 in hot asphalt	(Optional) One ply of Elastobase, Permaply No. 28 or GAF GAFGLAS #75 or one to three plies of Polyglass Ply 4 or Ply 6 in hot asphalt	Torch applied ⁸	45
2	Min. 22 ga. steel, min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	Min. 1 1/2-inch, min. 2.0 pcf polyisocyanurate, min. 3/4-inch Dens-Deck or min. 5/8-inch Type X gypsum	Loose laid	None	N/A	Elastobase Poly, Elastobase or Perma-Ply No. 28 attached with Dekfast Hex or Isofast IF/IG-70x70 with isofast IF2 spaced 12-inch o.c. in a 4-inch lap and 18-inch o.c. in two staggered rows in the center of the sheet	(Optional) One ply of Elastobase, PermaPly No. 28 or GAFGLAS #75 or one to three plies of Polyglass Ply 4 or Ply 6 in hot asphalt	Torch applied ⁸	45
2a			Same as System No. 2, with Base Sheet attached 12-inch o.c. in the 4-inch lap and 18-inch o.c. in one center row.							30
3	Min. 22 ga. steel, min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	Min. 1 1/2-inch, min. 2.0 pcf polyisocyanurate, min. 3/4-inch Dens-Deck or min. 5/8-inch Type X gypsum	Preliminary Securement ³	None	N/A	Polyflex attached with Dekfast 2 1/2" HS Plates and #14 Dekfast 18-inch o.c. in 5-inch wide, heat welded lap.	None	Torch applied ⁸	45
4			Same as System No. 3 with Base Sheet attached 12-inch o.c. in a 6-inch wide, heat welded lap.							82
5	Min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	(Optional) 3/4-inch DensDeck or 5/8-inch Type X gypsum board	Loose laid	None	N/A	See System No. 2.			45

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{4, 6}		COVERBOARD		ROOF COVER			ALLOWABLE UPLIFT CAPACITY (psf)
5a	Min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	(Optional) 1/4-inch DensDeck or 5/8-inch Type X gypsum board	Loose laid	None	N/A	See System No. 2a			30
6	Min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	(Optional) 1/4-inch DensDeck or 5/8-inch type X gypsum board	Loose laid	None	N/A	See System No. 3.			45
7	Min. 2,500 psi concrete or min. 3/4" thick plywood	N/A	(Optional) 1/4-inch DensDeck or 5/8-inch type X gypsum board	Loose laid	None	N/A	See System No. 4.			82
8	Min. 2,500 psi concrete	N/A	None	N/A	None	N/A	(Optional when using ply sheet) Elastobase, PermaPly No. 28 or GAFGLAS #75 in hot asphalt	(Optional when using base sheet) One ply of Elastobase, PermaPly No. 28 or GAFGLAS #75 plies of Polyglass Ply 4 or Ply 6 in hot asphalt	Torch applied ⁸	622
9	Min. 2,500 psi concrete	N/A	None	N/A	None	N/A	Polyflex, torch applied	None	Torch applied ⁸	622
10	Min. 200 psi FM-approved cellular lightweight concrete decks	N/A	None	N/A	None	N/A	GAFGLAS #75 attached with Buildex Lite Weight Concrete Fasteners 7-inch o.c. in a 4-inch lap and 7-inch o.c. in two staggered rows in the center of the sheet	(Optional) One ply of Elastobase, PermaPly No. 28 or GAFGLAS #75 or one to three plies of Polyglass Ply 4 or Ply 6 in hot asphalt	Torch applied ⁸	45
11	Min. 22 ga. steel	None	Min. 1 1/2-inch Johns Manville "ENRGY 3"	#14 Dekfast with IF/IG 70x70 plates at 1 per 1.3 ft ²	None	N/A	Elastoflex SA Vent; SA Vent FR; SA V Base; SA V FR or Polyflex SA P, self-adhered	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	Self-adhered ⁷ or torch applied ⁸	82
12	Min. 22 ga. steel, min. 2,500 psi concrete	None	Min. 1 1/2-inch-thick Hunter Panels "H-Shield" and "H-Shield P", Polyglass "Polytherm or Polytherm Composite P"	1 per 2 ft ²	None	N/A	(Optional) Elastoflex SA V FR Base, self-adhered	None	Elastoflex SA P FR, self-adhered	60

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER			ALLOWABLE UPLIFT CAPACITY (psf)
			One or more layers, Atlas Roofing "ACFoam II", Johns Manville "ENRGY 3" or RMax Inc. "Multi-Max FA-3"	Hot asphalt, Insta-Stik, Spray-N-Grip, Weather-Tite Pourable Foam or One Step; OlyBond or TITESET insulation adhesive	Min. ¼-inch DensDeck primed with asphalt primer	Hot asphalt, Insta-Stik, Spray-N-Grip, Weather-Tite Pourable Foam or One Step; OlyBond 500 or TITESET insulation adhesive	Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, followed by torch or SA cap sheet	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	
13	Min. 2,500 psi concrete, primed with asphalt primer	(Optional) Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, followed by torch or SA cap sheet	One or more layers, Atlas Roofing "ACFoam II", Johns Manville "ENRGY 3" or RMax Inc. "Multi-Max FA-3"	Hot asphalt, Insta-Stik, Spray-N-Grip, Weather-Tite Pourable Foam or One Step; OlyBond or TITESET insulation adhesive	Min. ¼-inch DensDeck primed with asphalt primer	Hot asphalt, Insta-Stik, Spray-N-Grip, Weather-Tite Pourable Foam or One Step; OlyBond 500 or TITESET insulation adhesive	Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	Self-adhered ⁷ or torch applied ⁸	37
14	Min. 2,500 psi concrete, primed with asphalt primer	(Optional) Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, followed by torch or SA cap sheet	One or more layers, Atlas Roofing "ACFoam II", Johns Manville "ENRGY 3" or RMax Inc. "Multi-Max FA-3"	Hot asphalt, Insta-Stik, Spray-N-Grip, Weather-Tite Pourable Foam or One Step; OlyBond or TITESET insulation adhesive	None	N/A	Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	Self-adhered ⁷ or torch applied ⁸	100
15	Min. 2,500 psi concrete, primed with asphalt primer	None	None	N/A	None	N/A	Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch applied ply sheet	Self-adhered ⁷ or torch applied ⁸	200
16	Min. 2,500 psi concrete, primed with asphalt primer	None	None	N/A	None	N/A	Elastoflex SA V FR Base, self-adhered	None	Elastoflex SA P Base FR, self-adhered	315
17	Min. 2,500 psi concrete, primed with asphalt primer	(Optional) Elastoflex SA V Vent; SA V FR; SA V or SA P or Polyflex SA P, followed by torch or SA cap sheet	One or more layers, 1-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt	Min. ¾-inch FM approved perlite	Hot asphalt	Elastobase or ASTM D 4601, Type II base sheet in hot asphalt	(Optional) torch-applied ⁸ or hot asphalt-applied ⁹ ply sheet	Torch-applied ⁸	280

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER			ALLOWABLE UPLIFT CAPACITY (psf)
			None	N/A	None	N/A	Elastoflex SA Vent; SA Vent FR; SA V Base; SA V FR Polyflex SA P, self-adhered	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch-applied ply sheet	Self-adhered ⁷ or torch-applied ⁸	
18	Plywood primed with asphalt primer	None	None	N/A	None	N/A	Elastoflex SA Vent; SA Vent FR; SA V Base; SA V FR Polyflex SA P, self-adhered	(Optional) Elastoflex SA V Base; SA V FR Base or SA P or Polyflex SA P, self-adhered or torch-applied ply sheet	Self-adhered ⁷ or torch-applied ⁸	45
19	Min. ¹⁵ / ₃₂ -inch BCX plywood or Min. 15/32" OSB	None	None	N/A	None	N/A	Optional ASTM D 4601, type II base sheet loose laid followed by Elastobase or Elastobase Poly attached with min. 11 ga. ring shank cap nails with a min. 1-inch dia. round the 3-inch lap and 6-inch o.c. in two staggered rows in the field of the sheet	(Optional) Elastoflex SA V FR Base	Elastoflex SA P FR or Polyflex SA P FR self-adhered or Polyflex G FR heat-welded	37
20	Min. 22 ga., type B, Grade 33 steel	None	(Optional) one or more layers foam plastic insulation	Loose laid	Min. 1/4-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 3.2 ft ²	Self-adhered ⁷	---	Self-adhered ⁷	30
21	Min. 22 ga., type B, Grade 33 steel	None	(Optional) one or more layers foam plastic insulation	Loose laid	Min. 1/4-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 4 ft ²	Torch-applied ⁸ or hot asphalt-applied ⁹	---	Torch-applied ⁸ or hot asphalt-applied ⁹	45
22	Min. 22 ga., type B, Grade 33 steel	None	Min. 2-inch-thick, Atlas Roofing "ACFoam II" or Firestone Building Products "ISO 95+ GL"	OMG Std. with Metal Plates or Dekfast with Dekfast Plates at 1 per 4 ft ² (8 per 4 x 8 ft board)	Min. 1/4-inch USG "SECUROCK"	Hot asphalt or Insta-Stik, OlyBond, OlyBond 500, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Torch-applied ⁸ or hot asphalt-applied ⁹	---	Torch-applied ⁸ or hot asphalt-applied ⁹	45
23	Min. 22 ga., type B, Grade 33 steel	None	Min. 2-inch-thick, Atlas Roofing "ACFoam II" or Firestone Building Products "ISO 95+ GL"	OMG Std. with Metal Plates or Dekfast with Dekfast Plates at 1 per 4 ft ² (8 per 4 x 8 ft board)	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt or Insta-Stik, OlyBond, OlyBond 500, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Self-adhered ⁷	---	Self-adhered ⁷	45

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
			(Optional) one or more layers foam plastic insulation	Loose laid	Min. 1/2-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates at 1 per 1.78 ft ² (18 per 4 x 8 ft board)	Torch-applied ⁸ or hot asphalt-applied ⁹	---	
24	22 ga., type B, Grade 80 steel attached 6" o.c. to steel supports spaced max. 6 ft o.c. with Traxx5	None		Loose laid	Min. 1/2-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates at 1 per 1.78 ft ² (18 per 4 x 8 ft board)	Torch-applied ⁸ or hot asphalt-applied ⁹	---	75
25	Min. 2,500 psi structural concrete	None	(Optional) Any one or more layers Approved for use with Roof Cover	Loose laid	Min. 1/4-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 3.2 ft ²	Self-adhered ⁷	---	30
26	Min. 2,500 psi structural concrete	None	(Optional) Any one or more layers Approved for use with Roof Cover	Loose laid	Min. 1/4-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 4 ft ²	Torch-applied ⁸ or hot asphalt-applied ⁹	---	45
27	Min. 2,500 psi structural concrete	None	Min. 2-inch-thick, Atlas Roofing "ACFoam II" or Firestone Building Products "ISO 95+ GL"	OMG HD #14 with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 4 ft ² (8 per 4 x 8 ft board)	Min. 1/4-inch USG "SECUROCK"	Hot asphalt or Insta-Stik, OlyBond, OlyBond 500, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Torch-applied ⁸ or hot asphalt-applied ⁹	---	45
28	Min. 2,500 psi structural concrete	None	Min. 2-inch-thick, Atlas Roofing "ACFoam II" or Firestone Building Products "ISO 95+ GL"	OMG HD #14 with OMG Std. Metal Plates or Dekfast #14 with Hex Plates at 1 per 4 ft ² (8 per 4 x 8 ft board)	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt or Insta-Stik, OlyBond, OlyBond 500, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Self-adhered ⁷	---	45
29	Min. 2,500 psi structural concrete	None	(Optional) Any one or more layers Approved for use with Roof Cover	Loose laid	Min. 1/4-inch USG "SECUROCK"	OMG HD with OMG Std. Metal Plates at 1 per 1.78 ft ² (18 per 4 x 8 ft board)	Torch-applied ⁸ or hot asphalt-applied ⁹	---	75
30	Min. 2,500 psi structural concrete	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Insta-Stik, OlyBond 500, Pourable Foam or One Step or TITESET insulation adhesive	Min. 1/4-inch USG "SECUROCK"	Hot asphalt or Insta-Stik, OlyBond 500, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Torch-applied ⁸ or hot asphalt-applied ⁹	---	442

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
			(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Insta-Stik, OlyBond 500, Pourable Foam or One Step or TITESET insulation adhesive	Min. 1/4-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Min. 1/4-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	
31	Min. 2,500 psi structural concrete	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Insta-Stik, OlyBond 500, Pourable Foam or One Step or TITESET insulation adhesive	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	442
32	Min. 2,500 psi structural concrete (primed if using hot asphalt)	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Hot asphalt-applied ⁹	Hot asphalt-applied ⁹	495
33	Min. 2,500 psi structural concrete (primed if using hot asphalt)	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt or OlyBond 500, Insta-Stik, Weather-Tite Pourable Foam or One Step, or TITESET insulation adhesive	Torch-applied ⁸	Torch-applied ⁸	536
34	Min. 2,500 psi structural concrete	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	OlyBond insulation adhesive	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	OlyBond insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	543
35	Min. 2,500 psi structural concrete (primed if using hot asphalt)	None	(Optional) Min. 2-inch-thick, Atlas Roofing "ACFoam II"	Hot asphalt	Min. 1/4-inch USG "SECUROCK", primed with D41 primer	Hot asphalt	Self-adhered ⁷	Self-adhered ⁷	545
36	Plywood or OSB	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III" Johns Manville Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITESET insulation adhesive	(Optional) additional layer(s) of base insulation	TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	52
37	22 ga., Type B, Grade 33 steel	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II"	OlyBond 500 insulation adhesive	(Optional) additional layer(s) of base insulation	OlyBond 500 insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	45
38	22 ga., Type B, Grade 33 steel	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II"	TITESET insulation adhesive	(Optional) additional layer(s) of base insulation	TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	52
39	22 ga., Type B, Grade 33 steel	None	Min. 1/2-inch DensDeck	TITESET insulation adhesive	Min. 1 1/2-inch ACFoam II	TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	60

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
40	Concrete	ASTM D41	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	Hot asphalt	(Optional) additional layers(s) of base insulation	Hot asphalt	Self-adhered ⁷	Self-adhered ⁷	480
41	Concrete	(Optional) ASTM D41	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or Johns Manville "ENRGY 3"	Insta-Stik insulation adhesive	(Optional) additional layers(s) of base insulation	Insta-Stik insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	135
42	Concrete	(Optional) ASTM D41	Min. 1 1/2-inch-thick, RMax, Inc. "Multi-Max FA3"	Insta-Stik insulation adhesive	(Optional) additional layers(s) of base insulation	Insta-Stik insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	67
43	Concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" or RMax, Inc. "Multi-Max FA3"	WeatherTite One Step insulation adhesive	(Optional) additional layers(s) of base insulation	WeatherTite One Step insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	232
44	Concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II", or Hunter Panels "H-Shield"	OlyBond 500 insulation adhesive	(Optional) additional layers(s) of base insulation	OlyBond 500 insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	150
45	Concrete	None	Min. 1 1/2-inch-thick, Johns Manville "ENRGY 3",	OlyBond insulation adhesive	(Optional) additional layers(s) of base insulation	OlyBond 500 insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	127
46	Concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITESET insulation adhesive	(Optional) additional layers(s) of base insulation	TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	270

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
			Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITSEET insulation adhesive	(Optional) additional layers(s) of base insulation	TITSEET insulation adhesive	Self-adhered ⁷	---	
47	Concrete	ASTM D41 / Elastoflex SA V G	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITSEET insulation adhesive	(Optional) additional layers(s) of base insulation	TITSEET insulation adhesive	Self-adhered ⁷	---	250
48	Concrete	ASTM D41 / Elastoflex VG in 1000 MB Adhesive at 1.5 gal/square	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITSEET insulation adhesive	(Optional) additional layers(s) of base insulation	TITSEET insulation adhesive	Self-adhered ⁷	---	68
49	Concrete	None	Min. 1 1/2-inch, min. 2.0 pcf EPS insulation board	Insta-Stik insulation adhesive	(Optional) additional layers of base insulation	Insta-Stik insulation adhesive	Self-adhered ⁷	---	135
50	Concrete	None	Min. 1 1/2-inch, min. 2.0 pcf EPS insulation board	OlyBond insulation adhesive	(Optional) additional layers of base insulation	OlyBond 500 insulation adhesive	Self-adhered ⁷	---	120
51	Concrete	(Optional) ASTM D41 / Elastoflex SA V G	Min. 1 1/2-inch, min. 2.0 pcf EPS insulation board	TITSEET insulation adhesive	(Optional) additional layers of base insulation	TITSEET insulation adhesive	Self-adhered ⁷	---	240
52	Min. 200 psi Elastzell cellular lightweight insulating concrete (LWIC) cast over structural concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II", or Hunter Panels "H-Shield"	OlyBond 500 insulation adhesive	(Optional) additional layers(s) of base insulation	OlyBond 500 insulation adhesive	Self-adhered ⁷	---	225
53	Min. 200 psi Range II Elastzell cellular LWIC cast over structural concrete	None	Min. 1 1/2-inch, min. 2.0 pcf EPS insulation board	OlyBond 500 insulation adhesive	(Optional) additional layers of base insulation	OlyBond insulation adhesive	Self-adhered ⁷	---	120

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}	COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
				(Optional) additional layers(s) of base insulation	TITESET insulation adhesive	Self-adhered ⁷	Self-adhered ⁷	
54	Min. 300 psi Celcore cellular LWIC cast over structural concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG", RMax, Inc. "Multi-Max FA3" or min. 2.0 pcf EPS insulation board	TITESET insulation adhesive	TITESET insulation adhesive	---	Self-adhered ⁷	222
55	Min. 300 psi Elastizell cellular LWIC cast over structural concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG", RMax, Inc. "Multi-Max FA3" or min. 2.0 pcf EPS insulation board	TITESET insulation adhesive	TITESET insulation adhesive	---	Self-adhered ⁷	180
56	Min. 300 psi Meiarcrete cellular LWIC cast over structural concrete	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENERGY 3", Hunter Panels "H-Shield" and "H-Shield CG", RMax, Inc. "Multi-Max FA3" or min. 2.0 pcf EPS insulation board	TITESET insulation adhesive	TITESET insulation adhesive	---	Self-adhered ⁷	240
57	Tectum	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II", Johns Manville "ENERGY 3", Hunter Panels "H-Shield"	OlyBond 500 insulation adhesive	OlyBond insulation adhesive	---	Self-adhered ⁷	45

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}	COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)	
				(Optional) additional layer(s) of base insulation	TITESET insulation adhesive				
58	Tectum or Fibroplank	None	Min. 1 1/2-inch-thick, Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	TITESET insulation adhesive	TITESET insulation adhesive	Self-adhered ⁷	---	Self-adhered ⁷	52
59	Plywood or OSB	None	None	N/A	N/A	Elastobase fastened with nails/tin caps 6 inches o.c. in laps and 6 inches o.c. in four equally spaced staggered rows	---	Self-adhered ⁷	112
60	Plywood or OSB	None	Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	Weather-Tite One Step insulation adhesive	N/A	Elastobase fastened with nails/tin caps 8 inches o.c. in laps and 8 inches o.c. in two equally spaced staggered rows	Elastoflex SA V Base, self-adhered	Self-adhered ⁷	30
61	Plywood or OSB	None	Atlas Roofing "ACFoam II" or "ACFoam III", Johns Manville "ENRGY 3", Hunter Panels "H-Shield" and "H-Shield CG" or RMax, Inc. "Multi-Max FA3"	Weather-Tite One Step insulation adhesive	N/A	Elastobase fastened with nails/tin caps 6 inches o.c. in laps and 6 inches o.c. in four equally spaced staggered rows	Elastoflex SA V Base, self-adhered	Self-adhered ⁷	60
62	Elastizell LWIC with Zell-Crete fibers minimum compressive value 350psi, With supplemental attachment using Roofgrip #21 screws and 3-inch Flat Bottom plates at 1 per 8ft ²	None	None	N/A	N/A	Elastobase Poly fastened with ES Products FM-260 fasteners 8 inches o.c. in laps and 8 inches o.c. in three equally spaced rows	---	Elastoflex S6 G, torch-applied	52

TABLE 3—ROOF COVERINGS AND UPLIFT PRESSURE VALUES (Continued)

SYSTEM NO.	ROOF DECK ⁵	VAPOR BARRIER	BARRIER BOARD AND/OR INSULATION ^{2,6}		COVERBOARD		ROOF COVER		ALLOWABLE UPLIFT CAPACITY (psf)
			None	N/A	None	N/A	Elastobase fastened with ES Products Twin-Lok fasteners 6 inches o.c. in laps and 6 inches o.c. in three equally spaced	Elastoflex SA V Base, self-adhered	
63	Elastizell LWIC with Zell-Crete fibers minimum compressive value 350psi, With supplemental attachment using Roofgrip #21 screws and 3-inch Flat Bottom plates at 1 per 8ft ²	None	None	N/A	None	N/A	Elastobase fastened with ES Products FM-260 fasteners 10 inches o.c. in laps and 10 inches o.c. in three equally spaced rows	Elastoflex SA V Base, self-adhered	60
64	Celcore MF LWIC minimum compressive value 300psi	None	None	N/A	None	N/A	Elastobase Poly fastened with ES Products FM-90 fasteners 8 inches o.c. in laps and 8 inches o.c. in three equally spaced rows	Elastoflex S6 G, torch-applied	90
65	Celcore MF LWIC minimum compressive value 300psi	None	None	N/A	None	N/A	Elastobase fastened with ES Products FM-90 fasteners 8 inches o.c. in laps and 8 inches o.c. in three equally spaced rows	Elastoflex SA V Base, self-adhered	60

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 lb = 0.454 kg; 1 psf = 47.88 Pa; 1 pcf = 16.02 kg/m³.

¹ Unless otherwise noted, insulation fasteners and plates must be Polygrip or Dekfast #12 (steel or wood only), Polygrip or Dekfast #14 or #15 with Polygrip or Dekfast Hex Plates.
² All foam plastic insulation must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.
³ Preliminary securement consists of four fasteners per board for a board having any dimension > 4 ft and two fasteners per board for a board having a maximum dimension of 4 ft.
⁴ Insulation adhesive application rates are as follows (Consult adhesive manufacturers published installation instructions for further details):
 • Hot asphalt at 25-30 lbs/square.
 • Dow Chemical, Insta-Stik applied in 3/4"- to 1-inch-diameter beads spaced max. 12 inches o.c.
 • Dow Chemical, Spray-N-Grip spray applied in full coverage to approximately 1 gallon per square.
 • Millennium Weather-Tite Pourable Foam Insulation Adhesive applied in 3/4"-inch-wide strips spaced max. 12 inches o.c.
 • Millennium Weather-Tite One Step Insulation Adhesive applied in 3/4"-inch-diameter beads spaced max. 12" o.c.
 • Olympic Olybond spray applied in full coverage to approximately 1 gallon per square.
 • Olympic Olybond 500 applied in 3/4"-inch-diameter beads spaced max. 12 inches o.c.
 • Polyfoam Products TITSEET spray applied in continuous 3-inch-wide ribbons spaced max. 12 inches o.c.
⁵ See Section 5.7.
⁶ Insulation, fasteners, adhesives, base sheets, ply sheets and membranes must be FM-approved.
⁷ Self-Adhered systems include:
 • Base Membranes: Polyflex SA P, Elastoflex SA P, Elastoflex SA V Base or Elastoflex SA V FR Base; Elastoflex SA Vent or Elastoflex SA Vent FR.
 • Ply Membranes: Polyflex SA P, Elastoflex SA P, Elastoflex SA V Base or Elastoflex SA V FR Base; Elastoflex SA Vent or Elastoflex SA Vent FR.
 • Cap Membranes: Polyflex SA P, Polyflex SA P FR, Polyfresco APP SA P, Polyfresco APP SA P FR, Polyfresco APP SA P FR, Elastoflex SA P, Elastoflex SA P FR, Polyfresco SBS SA P, Polyfresco SBS SA P FR, PolyKool and Polybiano.
⁸ Torch-applied membranes include Polyflex, Polyflex G FR, Polyfresco Torch, Polyfresco Torch FR, Elastoflex S6 G, Elastoflex S6 G FR, Polyfresco S6, Polyfresco S6 FR, Polyfresco VG and Elastoflex VG FR.
⁹ Hot-asphalt membranes include Elastobase, Elastobase Poly, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TSG, Elastoshield TSG FR, Polyfresco S6, Polyfresco S6 FR, Elastoflex VG and Elastoflex VG FR.