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# ICC-ES Evaluation Report

## ESR-3026

Reissued 04/2019

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This report is subject to renewal 04/2021.

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**  
**SECTION: 07 53 23—ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING**

**REPORT HOLDER:**

**FIRESTONE BUILDING PRODUCTS COMPANY, LLC**

**EVALUATION SUBJECT:**

**FIRESTONE RUBBERGARD EPDM SINGLE-PLY ROOFING MEMBRANES**



*“2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence”*



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A Subsidiary of the International Code Council®

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**Section: 07 53 23—Ethylene-Propylene-Diene-Monomer Roofing**

**REPORT HOLDER:**

**FIRESTONE BUILDING PRODUCTS COMPANY, LLC**

**EVALUATION SUBJECT:**

**FIRESTONE RUBBERGARD EPDM SINGLE-PLY ROOFING MEMBRANES**

**ADDITIONAL LISTEE:**

**GENFLEX ROOFING SYSTEMS, LLC**

**1.0 EVALUATION SCOPE**

**Compliance with the following code:**

- 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

**Properties evaluated:**

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

**2.0 USES**

Firestone RubberGard EPDM single-ply roofing membranes are used as roof coverings in ballasted, adhered and mechanically fastened membrane roofing systems.

**3.0 DESCRIPTION**

**3.1 General:**

The RubberGard EPDM Membrane Roofing Systems described in this report consist of single-ply roofing membranes, insulation (where used), barrier board or slip sheet (where used), flashing, mechanical fasteners and adhesives that are installed on a combustible or noncombustible deck.

**3.2 EPDM Membranes:**

**3.2.1 Fire Retardant RubberGard:** Fire Retardant RubberGard is a nonreinforced fire-resistant EPDM

single-ply roofing membrane complying with ASTM D4637, available in nominally 45-mil (1.1 mm) or 60-mil (1.5 mm) thicknesses. The 45-mil-thick membrane weighs approximately 0.31 lb/ft<sup>2</sup> (1.5 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 9-foot-wide (30.5 m by 2.3 or 2.7 m) rolls. The 60-mil-thick membrane weighs approximately 0.43 lb/ft<sup>2</sup> (2.1 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 9-foot-wide (30.5 m by 2.3 or 2.7 m) rolls.

**3.2.2 RubberGard LS-FR:** Standard RubberGard LS-FR is a nonreinforced fire-resistant EPDM single-ply roofing membrane complying with ASTM D4637, available in nominally 45-mil (1.1 mm) or 60-mil (1.5 mm) thicknesses. The 45-mil-thick membrane weighs approximately 0.31 lb/ft<sup>2</sup> (1.5 kg/m<sup>2</sup>) and is available in rolls of various widths, 100 feet long (30.5 m). The 60-mil-thick membrane weighs approximately 0.43 lb/ft<sup>2</sup> (2.1 kg/m<sup>2</sup>) and is available in rolls of various widths, 100 feet long (30.5 m).

**3.2.3 RubberGard LS-FR PT:** Standard RubberGard LS-FR PT is a nominally 60-mil (1.5 mm) thick, nonreinforced fire-resistant EPDM single-ply roofing membrane complying with ASTM D4637, with a pre-applied 3-inch or 6-inch-wide (76 or 152 mm), 0.035-inch-thick (0.9 mm) Quick Seam tape laminated along the length of the membrane. The membrane weighs approximately 0.31 lb/ft<sup>2</sup> (1.5 kg/m<sup>2</sup>) and is available in rolls of various widths, 100 feet long (30.5 m).

**3.2.4 RubberGard MAX:** RubberGard MAX is an internally-reinforced EPDM single-ply roofing membrane complying with ASTM D4637, available in nominally 45-mil (1.1 mm), 60-mil (1.5 mm) or 75-mil (1.9 mm) thicknesses. The 45-mil-thick membrane weighs approximately 0.32 lb/ft<sup>2</sup> (1.5 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls. The 60-mil-thick membrane weighs approximately 0.42 lb/ft<sup>2</sup> (2.0 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls. The 75-mil-thick membrane weighs approximately 0.52 lb/ft<sup>2</sup> (2.4 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls.

**3.2.5 RubberGard MAX PT:** RubberGard MAX PT is an internally-reinforced EPDM single-ply roofing membrane complying with ASTM D4637, available in nominally 45-mil (1.1 mm), 60-mil (1.5 mm) or 75-mil (1.9 mm) thicknesses, with a pre-applied 3-inch or 6-inch-wide (76 or 152 mm), 0.035-inch-thick (0.9 mm) Quick Seam tape laminated along the length of the membrane. The 45-mil-thick membrane weighs approximately 0.33 lb/ft<sup>2</sup>

(1.6 kg/m<sup>2</sup>). The 60-mil-thick membrane weighs approximately 0.43 lb/ft<sup>2</sup> (2.1 kg/m<sup>2</sup>). The 75-mil-thick membrane weighs approximately 0.56 lb/ft<sup>2</sup> (2.7 kg/m<sup>2</sup>). Membranes are available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls.

**3.2.6 RubberGard MAX FR:** RubberGard Max FR is an internally-reinforced, fire-resistant, EPDM single-ply roofing membrane complying with ASTM D4637, available in nominally 45-mil (1.1 mm), 60-mil (1.5 mm) or 75-mil (1.9 mm) thicknesses. The 45-mil-thick membrane weighs approximately 0.32 lb/ft<sup>2</sup> (1.5 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls. The 60-mil-thick membrane weighs approximately 0.42 lb/ft<sup>2</sup> (2.0 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls. The 75-mil-thick membrane weighs approximately 0.52 lb/ft<sup>2</sup> (2.5 kg/m<sup>2</sup>) and is available in 100-foot-long by 7.5-foot- or 10-foot-wide (30.5 m by 2.3 or 3 m) rolls.

**3.2.7 RubberGard Platinum:** RubberGard Platinum is a nominally 90-mil (2.2 mm) thick, nonreinforced, EPDM single-ply roofing membrane complying with ASTM D4637. The membrane weighs approximately 0.56 lb/ft<sup>2</sup> (2.7 kg/m<sup>2</sup>) and is available in 50-foot- or 100-foot-long by 10-foot-wide (15.2 or 30.5 m by 3 m) rolls.

**3.2.8 RubberGard EcoWhite:** RubberGard EcoWhite is a nominally 60-mil (1.5 mm) thick, nonreinforced, bi-laminate, white-on-black, cured single ply roofing membrane complying with ASTM D4637. The membrane weighs approximately 0.43 lb/ft<sup>2</sup> (2.1 kg/m<sup>2</sup>) and is available in rolls of various widths, 100 feet long (30.5 m).

**3.2.9 RubberGard EcoWhite Platinum:** RubberGard EcoWhite Platinum is a nominally 90-mil (2.3 mm) thick, nonreinforced, bi-laminate, white-on-black, cured single ply roofing membrane complying with ASTM D4637. The membrane weighs approximately 0.61 lb/ft<sup>2</sup> (3.0 kg/m<sup>2</sup>) and is available in 100-foot-long by 10-foot-wide (30.5 m by 3 m) rolls.

**3.2.10 RubberGard EPDM SA:** RubberGard EPDM SA membrane is a nominally 60-mil (1.5 mm) thick, non-reinforced, self-adhered single-ply EPDM roofing membrane complying with ASTM D4637. The membrane weighs approximately 0.47 lb/ft<sup>2</sup> (2.1 kg/m<sup>2</sup>) and is available in rolls of various widths in 100-foot-long (30.5 m) lengths.

### 3.3 Insulation:

See Tables 1 through 5 for insulations used 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 E84. Polyisocyanurate and polystyrene foam plastic insulation must comply with ASTM C1289 and ASTM C578, respectively, and with Chapter 26 of the IBC.

### 3.4 Barrierboard or Coverboard:

Barrierboard or coverboard, when used, may be any of the following:

- Minimum 1/4-inch-thick (6.4 mm) G-P Gypsum Corporation DensDeck or DensDeck Prime.
- Minimum 1/2-inch-thick (12.7 mm) gypsum board, complying with ASTM C1396.
- One-half-inch-thick (12.7 mm) Firestone ISOGARD HD or Firestone RESISTA.
- One-half-inch-thick (12.7 mm) USG Corporation SECUROCK Gypsum Fiber Roof Board.

### 3.5 Fasteners:

Fasteners and stress plates used to attach barrier or cover boards, insulation boards and roofing membranes must be corrosion-resistant. Fasteners may be any of the Firestone insulation and membrane fasteners, plates and strips summarized in this section or noted in Table 5.

**3.5.1 Firestone All-Purpose Fasteners:** An epoxy-coated steel screw used in combination with the Firestone Insulation Fastening Plate to attach roofing insulation and base sheets to steel and wood substrates. Fastener length must be sufficient to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm), and into the wood deck a minimum of 1 inch (25.4 mm).

**3.5.2 Firestone Heavy-Duty Fastener:** An epoxy-coated steel screw used in combination with the Firestone Insulation Fastening Plates, Firestone Batten Strips, Seam Plates or Termination Bars to attach roofing insulation and base sheets to steel, wood and concrete decks. Fastener length must be sufficient to penetrate through the steel deck a minimum of 3/4 inch (19.1 mm), and into the wood or concrete deck a minimum of 1 inch (25.4 mm).

**3.5.3 Firestone Concrete Drive Fastener:** A nonthreaded hammer-in fastener, epoxy-coated, used with Firestone Insulation Plates to attach roofing insulation, base sheets and other accessories to structural concrete substrates. Fastener length must be sufficient to penetrate into the concrete deck a minimum of 1 1/4 inch (32 mm).

**3.5.4 Firestone Insulation Fastening Plate:** A 3-inch-diameter (76 mm) galvalume plate used in combination with Firestone fasteners to secure insulation and base sheets to the roof deck.

**3.5.5 Firestone Seam Plate:** A 2-inch-diameter (50 mm), galvalume plate used in combination with Firestone All-Purpose, Heavy-Duty and Concrete Drive fasteners.

**3.5.6 Firestone V-Plate:** A 2.25-inch-diameter (57 mm), galvalume plate used in combination with Firestone All-Purpose, Heavy-Duty and Concrete Drive fasteners to secure Firestone RubberGard MAX and Firestone QuickSeam Strips.

**3.5.7 Firestone Batten Strip:** A corrosion-resistant, 10-foot-long by 1-inch-wide (3 m by 25.4 mm), galvalume metal batten strip with holes spaced 6 inches (152 mm) o.c.

**3.5.8 Firestone Polymer Batten Strip:** A corrosion-resistant polymer batten strip, with holes spaced 3 inches (76 mm) o.c., available in 250-foot-long by 3/4-inch-wide (76.2 m by 19.1 mm) rolls.

**3.5.9 QuickSeam R.M.A. Strip:** A 10-inch-wide (254 mm) RubberGard Max membrane with two 3-inch-wide (76 mm) strips of laminated tape on both sides along the length of the strip used to anchor membranes to the substrate.

### 3.6 Adhesives:

**3.6.1 Firestone Water Based Bonding Adhesive (P) [WBBA (P)]:** A contact adhesive designed for bonding RubberGard EPDM products to specific substrates as specified in the report holder's or additional listee's installation instructions. The adhesive is applied to both the substrate and the underside of the membrane with a coverage of approximately 100 to 120 ft<sup>2</sup> (9.3 to 11.62 m<sup>2</sup>) per gallon (3.78 L), total, for both the substrate and the membrane. See Table 2 and Tables 4A through 4F for the adhesive application rate for each specific system. Water Based Bonding Adhesive (P) is an alternative to Firestone solvent based bonding adhesives. The adhesive has a

shelf life of one year when stored in unopened containers at temperatures between 60° F (16° C) and 80° F (27° C).

**3.6.2 Firestone BA-2004 (T):** Solvent-based, contact adhesives designed for bonding Firestone RubberGard EPDM membranes and flashings to wood, metal, masonry and other substrates as specified in the report holder's or additional listee's installation instructions. Either adhesive is applied to both the substrate and the underside of the membrane with a coverage of approximately 45 to 60 ft<sup>2</sup> (4.18 to 5.58 m<sup>2</sup>) per gallon (3.78 L), total, for both the substrate and the membrane. Each adhesive has a shelf life of one year when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

**3.6.3 Single-Ply LVOC Bonding Adhesive:** Solvent based, contact adhesives designed for bonding Firestone RubberGard EPDM membranes and flashings to wood, metal, masonry and other substrates as specified in the report holder's or additional listee's installation instructions. Either adhesive is applied to both the substrate and the underside of the membrane with a coverage of approximately 45 to 60 ft<sup>2</sup> (4.18 to 5.58 m<sup>2</sup>) per gallon (3.78 L), total, for both the substrate and the membrane. Each adhesive has a shelf life of one year when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

**3.6.4 Single-Ply LVOC Bonding Adhesive 1168:** Solvent based, contact adhesives designed for bonding Firestone RubberGard EPDM membranes and flashings to wood, metal, masonry and other substrates as specified in the report holder's or additional listee's installation instructions. Either adhesive is applied to both the substrate and the underside of the membrane with a coverage of approximately 45 to 60 ft<sup>2</sup> (4.18 to 5.58 m<sup>2</sup>) per gallon (3.78 L), total, for both the substrate and the membrane. Each adhesive has a shelf life of one year when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

**3.6.5 Firestone EPDM Solvent Free Bonding Adhesive:** A polymer based bonding adhesive for adhering non-reinforced RubberGard EPDM membranes to substrates on vertical and horizontal applications as specified in the report holder's or additional listee's installation instructions. The adhesive is applied to the substrate only with a coverage of approximately 150 ft<sup>2</sup> (11.62 m<sup>2</sup>) per gallon (3.78 L). The adhesive has a shelf life of 12 months when stored in unopened containers at temperature between 60° F (16° C) and 80° F (27° C).

**3.6.6 Firestone I.S.O. Twin-Pack Insulation Adhesive:** A two-component, low-rise, polyurethane insulation adhesive designed for bonding roof insulations to deck substrate types as specified in the report holder's or additional listee's installation instructions. The components have a shelf life of one year when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

**3.6.7 Firestone I.S.O. FIX II:** A single-component, polyurethane adhesive designed for bonding of Firestone ISO 95+ GL, Fibertop, and DensDeck to substrates as specified in the report holder's or additional listee's installation instructions. The adhesive has a shelf life of 15 months when stored in unopened containers at temperatures between 50°F (10°C) and 75°F (24°C).

**3.6.8 Firestone I.S.O. STICK:** A two-component, low-rise polyurethane insulation adhesive designed for bonding insulations to specific deck substrate types as specified in the report holder's or additional listee's installation instructions. The components have a shelf life of

18 months when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

### 3.7 Surface Coating:

Firestone AcryliTop PC-100 is an acrylic coating that may be spray-applied in one coat or roller-applied using two coats. When spray-applied in one coat, the AcryliTop PC-100 has a coverage rate of approximately 100 ft<sup>2</sup> (9.3 m<sup>2</sup>) per gallon (3.78 L). For roller application, the Firestone AcryliTop PC-100 Base Coat is applied in one coat at a coverage rate of 200 ft<sup>2</sup> (18.6 m<sup>2</sup>) per gallon (3.78 L). The second coat of AcryliTop PC-100 is applied at a 100 ft<sup>2</sup> (9.3 m<sup>2</sup>) per gallon (3.78 L). The AcryliTop PC-100 has a shelf life of one year when stored in unopened containers at temperatures between 60°F (16°C) and 80°F (27°C).

### 3.8 Impact Resistance:

The Firestone RubberGard EPDM roofing membranes described in this report comply with the impact resistance requirements of IBC Section 1504.7 based testing in accordance with Section 4.6 of FM 4470.

## 4.0 INSTALLATION

### 4.1 General:

Installation of the EPDM roofing membranes described in this report must comply with the applicable code, the report holder's or additional listee's published installation instructions and this report. The report holder's or additional listee's published installation instructions must be available on the jobsite at all times during installation.

The substrate to which the membrane is to be applied must be clean, dry, and free of frost, loose fasteners, and other protrusions or contaminants that will interfere with the adhesion or attachment of the membrane or that will puncture the membrane. All materials must be protected against contact with incompatible materials. 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.

The slope of the roof on which the single-ply membrane systems are installed must be a minimum of 1/4:12 (2 percent slope) and must not be more than the maximum slope indicated for the particular assembly as listed in Tables 1 through 3.

Penetrations and terminations of the roof covering must be flashed and made weathertight in accordance with the requirements of the membrane manufacturer and Section 1503.2 of the IBC. Where flashing is of metal, the metal must be corrosion-resistant, minimum No. 26 gage [0.019 (0.483 mm)] galvanized steel.

### 4.2 Fire Classification:

**4.2.1 New Construction:** Roof covering systems described in Tables 1 through 3, when installed in accordance with this report, are classified as Class A or B roof covering systems in accordance with ASTM E108 or UL 790.

**4.2.2 Reroofing:** The existing deck must be inspected to verify that the structure to be reroofed is structurally sound and adequate to support and secure the roofing membrane.

Class A, B, or C roof covering systems may be installed over existing classified roof covering systems under the following conditions provided the resulting classification is the lower of the new and existing roofing classification:

- New uninsulated systems installed only over existing uninsulated assemblies.
- New insulated systems installed over existing uninsulated systems only.

**4.3 Wind Uplift Resistance:**

**4.3.1 New Construction:** The allowable wind uplift pressures for the Firestone membrane roof covering systems described in the report are noted in Tables 4 and 5. Metal edge securement for all roofing systems must be listed in accordance with 2011 edition (2015 IBC) or 2003 edition (2012 and 2009 IBC) of ANSI/SPRI ES-1 and designed and installed for wind loads in accordance with IBC Section 1504.5 and IBC Chapter 16.

The ballasted membrane roof covering system in Table 1 must comply with ANSI/SPRI RP-4.

**4.3.2 Reroofing:** Roof covering systems employing mechanical fasteners must be qualified to the satisfaction of the code official as to the adequacy of fasteners penetrating through existing roof coverings into structural substrates. Since the composition and/or condition of any particular underlying existing roofing material may vary widely, reroofing with adhered systems is outside the scope of this report.

**5.0 CONDITIONS OF USE**

The Firestone RubberGard EPDM single-ply roofing membranes described in this report comply with, or are suitable alternatives to what is specified in the IBC, subject to the following conditions:

- 5.1 Installation of the roofing systems must comply with the IBC, the report holder’s or additional listee’s published installation instructions and this report. If there are any conflicts between the report holder’s or additional listee’s published installation instructions and this report, this report governs.
- 5.2 The roof covering systems must be installed only by applicators approved by Firestone Building Products Company, LLC or Genflex Roofing Systems, LLC.
- 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.
- 5.4 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 E84 or UL 723, subject to the approval of the code official.
- 5.5 Above-deck thermal insulation board must comply with the applicable standards listed in IBC Table 1508.2.
- 5.6 Design wind-uplift pressure on any roof area,

including edge and corner zones, must not exceed the allowable wind pressure for the system installed in that particular area. Refer to the allowable wind uplift pressure for roof coverings as listed in Tables 4 and 5.

- 5.7 The allowable wind uplift pressures listed in Tables 4 and 5 are for the roof covering only. The deck and framing to which the roof covering 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.
- 5.9 When application is over existing roofs, documentation of the wind uplift resistance of the composite roof construction must be submitted to the code official for approval at the time of permit application.
- 5.10 The membranes are manufactured in Prescott, Arkansas under a quality-control program with inspections by ICC-ES.

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Membrane Roof Covering Systems (AC75), dated July 2010 (editorially revised September 2016).

**7.0 IDENTIFICATION**

- 7.1 Each roll of roofing membrane described in this report is identified with a label indicating the report holder’s name (Firestone Building Products Company, LLC) or the name of the additional listee (Genflex Roofing Systems, LLC), the product name, and the evaluation report number (ESR-3026).
- 7.2 The report holder’s contact information is the following:  
**FIRESTONE BUILDING PRODUCTS COMPANY, LLC**  
**200 4<sup>TH</sup> AVENUE SOUTH**  
**NASHVILLE, TENNESSEE 37201**  
**(800) 428-4442**  
[www.firestonebpco.com](http://www.firestonebpco.com)
- 7.3 The Additional Listee’s contact information is the following:

**GENFLEX ROOFING SYSTEMS, LLC**  
**200 4<sup>TH</sup> AVENUE SOUTH**  
**NASHVILLE, TENNESSEE 37201**  
**(800) 443-4272**  
[www.genflex.com](http://www.genflex.com)

**TABLE 1—FIRE CLASSIFICATION ASSEMBLIES – BALLASTED ROOFING SYSTEMS**

SYSTEM NO.	ROOF CLASS	SUBSTRATE	MAX. ROOF SLOPE	INSULATION <sup>2,3</sup>	MEMBRANE <sup>1</sup>	SURFACING
1	A	Combustible or noncombustible	2:12	(Optional) Any UL- classified foam plastic insulation	Any RubberGard EPDM membrane	River-bottom stones at min. 1000 lbs/100 ft <sup>2</sup> or concrete pavers at min. 10 lbs/ft <sup>2</sup>

For SI: 1 inch = 25.4 mm

<sup>1</sup>Membranes must be UL-classified for roofing systems.

<sup>2</sup>All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness noted in Section 5.4 of this report.

<sup>3</sup>Polyisocyanurate insulation must comply with ASTM C1289. Polystyrene insulation must comply with ASTM C578.

TABLE 2—FIRE CLASSIFICATION ASSEMBLIES – ADHERED ROOFING SYSTEMS

SYSTEM NO.	ROOF CLASS	SUBSTRATE <sup>2</sup>	MAX. ROOF SLOPE	INSULATION <sup>1,3</sup>	BARRIER OR COVER BD. <sup>4</sup>	MEMBRANE <sup>4</sup>		SURFACING <sup>4</sup>
						TYPE	ADHESIVE <sup>4</sup>	
1	A	Combustible	1½:12	--	Min. ¼-inch-thick DensDeck or DensDeck Prime, mechanically fastened to deck	RubberGard EcoWhite	BA-2004 (T), EPDM Solvent Free Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or WBBA (P)	--
2	A	Noncombustible	¼:12	Min. 1-inch-thick, any UL-classified polyisocyanurate insulation, mechanically fastened to steel deck or adhered to concrete deck	--	RubberGard MAX, MAX PT or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) or Single-Ply LVOC Bonding Adhesive	--
3	A	Concrete	¼:12	Min. 1-inch-thick, any UL-classified polyisocyanurate insulation, adhered to deck	Min. ¼-inch-thick DensDeck or DensDeck Prime, adhered to insulation	RubberGard EPDM SA (when adhesive is not used)	-	--
4	A	Concrete	2:12	Same as System 3	Same as System 3	RubberGard Platinum	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	---
5	A	Concrete	4½:12	Same as System 3	Same as System 3	RubberGard Platinum	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	PC-100 Coating
6	A	Concrete	4:12	Same as System 3	Same as System 3	RubberGard MAX FR	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	--
7	A	Noncombustible	1½:12	Same as System 2	--	RubberGard Platinum	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	PC-100 Coating
8	A	Noncombustible	½:12	Same as System 2	--	RubberGard LS-FR, LS-FR PT, Platinum or EcoWhite	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	
9	A	Concrete	½:12	Same as System 3	Same as System 3	RubberGard MAX or MAX PT	BA-2004 (T), EPDM Solvent Free Bonding Adhesive or Single-Ply LVOC Bonding Adhesive	--

TABLE 2—FIRE CLASSIFICATION ASSEMBLIES – ADHERED ROOFING SYSTEMS (CONTINUED)

SYSTEM NO.	ROOF CLASS	SUBSTRATE <sup>2</sup>	MAX. ROOF SLOPE	INSULATION <sup>1,3</sup>	BARRIER OR COVER BD. <sup>4</sup>	MEMBRANE <sup>4</sup>		SURFACING <sup>4</sup>
						TYPE	ADHESIVE <sup>4</sup>	
10	A	Noncombustible	3/4:12	Max. 4-inch-thick Firestone "ISO 95+GL", adhered or mechanically fastened to deck	--	RubberGard EcoWhite or EcoWhite Platinum	WBBA (P)	--
11	A	Noncombustible	1 1/2:12	--	Min. 1/4-inch-thick DensDeck or DensDeck Prime, mechanically fastened to deck	RubberGard EcoWhite or EcoWhite Platinum	BA-2004 (T), EPDM Solvent Free Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or WBBA (P)	--
12	A	Noncombustible	1/2:12	(Optional) Any UL-classified polyisocyanurate insulation	Min. 1/2-inch-thick Firestone "ISOGARD HD"	RubberGard LS-FR, MAX, Platinum or RubberGard SA (when an adhesive is not used)	BA-2004 (T), EPDM Solvent Free Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or WBBA (P)	(Optional) PC-100 Coating
13	A	Noncombustible	1:12	(Optional) Any UL-classified polyisocyanurate insulation	Same as System 12	Fire Retardant RubberGard or EcoWhite	BA-2004 (T), EPDM Solvent Free Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or WBBA (P)	(Optional) PC-100 Coating
14	A	Noncombustible	2 1/2:12	(Optional) Any UL-classified polyisocyanurate insulation	Same as System 12	RubberGard MAX FR	BA-2004 (T), EPDM Solvent Free Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or WBBA (P)	(Optional) PC-100 Coating

TABLE 2—FIRE CLASSIFICATION ASSEMBLIES – ADHERED ROOFING SYSTEMS (CONTINUED)

SYSTEM NO.	ROOF CLASS	SUBSTRATE <sup>2</sup>	MAX. ROOF SLOPE	INSULATION <sup>1,3</sup>	BARRIER OR COVER BD. <sup>4</sup>	MEMBRANE <sup>4</sup>		SURFACING <sup>4</sup>
						TYPE	ADHESIVE <sup>4</sup>	
15	A	Noncombustible	2:12	(Optional) Any UL- classified polyisocyanurate insulation	Same as System 12	RubberGard Platinum	BA-2004 (T), Single-Ply LVOC Bonding Adhesive or WBBA (P)	PC-100 Coating
16	A	Combustible	1/2:12	(Optional) Max. 4-inch-thick Firestone "ISO 95+GL"	Min. 1-inch-thick Firestone "ISOGARD HD" or "RESISTA", adhered or mechanically fastened to deck	RubberGard LS-FR, MAX, MAX FR, Platinum or EcoWhite	BA-2004 (T), Single-Ply LVOC Bonding Adhesive or WBBA (P)	(Optional) PC-100 Coating
17	A	Combustible	1/2:12	2-inch-thick, any UL- classified polyisocyanurate insulation, mechanically fastened to deck	--	RubberGard EcoWhite	BA-2004 (T), Single-Ply LVOC Bonding Adhesive or WBBA (P)	--
18	B	Combustible	1/2:12	(Optional) Max. 4-inch-thick Firestone "ISO 95+GL"	Min. 1/2-inch-thick Firestone "ISOGARD HD" or "RESISTA", adhered or mechanically fastened to deck	RubberGard LS-FR, MAX, MAX FR, Platinum or EcoWhite	BA-2004 (T), Single-Ply LVOC Bonding Adhesive or WBBA (P)	(Optional) PC-100 Coating
19	B	Noncombustible	1/2:12	Min. 1-inch-thick Firestone "ISO 95+GL" (optional if a barrierboard or coverboard is used)	-Min. 1/2-inch-thick RESISTA adhered or mechanically fastened to deck (optional if insulation is used)	RubberGard EPDM SA	Self-Adhered	-
20	A	Combustible	3:12	--	Min. 1/4-inch-thick DensDeck or DensDeck Prime, mechanically fastened to deck	RubberGard Platinum	BA-2004 (T) or Single-Ply LVOC Bonding Adhesive	(Optional) PC-100 Coating
21	A	Noncombustible	1:12	--	Min. 7/16-inch-thick OSB, mechanically fastened to deck	RubberGard EcoWhite or EcoWhite Platinum	BA-2004 (T) or Single-Ply LVOC Bonding Adhesive	--
22	A	Noncombustible	Unlimited	(Optional) Any UL- classified polyisocyanurate insulation	Min. 1/4-inch-thick DensDeck or DensDeck Prime, 1/4-inch-thick plywood or 7/16-inch-thick OSB, mechanically fastened to deck	RubberGard MAX FR	BA-2004 (T) or Single-Ply LVOC Bonding Adhesive	--
23	A	Noncombustible	3:12	(Optional) Any UL- classified polyisocyanurate insulation	Same as System 22	RubberGard MAX FR	WBBA (P)	--
24	A	Noncombustible	3:12	(Optional) Any UL- classified polyisocyanurate insulation, adhered or mechanically fastened to deck	---	RubberGard MAX FR	BA-2004 (T) or Single-Ply LVOC Bonding Adhesive	--
25	A	Noncombustible	2 1/2:12	Same as System 24	---	RubberGard MAX FR	WBBA (P)	--

For SI: 1 inch = 25.4 mm.

<sup>1</sup>All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness noted in Section 5.4 of this report.

<sup>2</sup>Wood deck must be minimum 15/32-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (*f<sub>c</sub>*) of 2500 psi. [minimum of 24MPa is required under ADIBC Appendix L, Section 5.1.1].

<sup>3</sup>Polyisocyanurate insulation must comply with ASTM C1289.

<sup>4</sup>Barrier or cover boards, adhesives, membranes and surface coatings must be UL-classified for roofing systems. See Section 3.6 for adhesive application rates.



**TABLE 3—FIRE CLASSIFICATION ASSEMBLIES – MECHANICALLY FASTENED ROOFING SYSTEMS**

SYSTEM NO.	ROOF CLASS	SUBSTRATE <sup>2</sup>	MAX. ROOF SLOPE	INSULATION <sup>1,3</sup>	BARRIER OR COVER BD. <sup>4</sup>	MEMBRANE <sup>4</sup>	SURFACING <sup>4</sup>
1	A	Noncombustible	1/2:12	(Optional) Any UL- classified polyisocyanurate insulation	Min. 1/2-inch-thick Firestone "ISOGARD HD" or "RESISTA"	RubberGard MAX	(Optional) PC-100 Coating
2	A	Noncombustible	1/2:12	(Optional) Max. 4-inch-thick Firestone "ISO 95+GL"	--	RubberGard LS-FR, RubberGard LS-FR PT or Platinum	--
3	A	Noncombustible	2 1/2:12	(Optional) Max. 4-inch-thick Firestone "ISO 95+GL"	--	RubberGard MAX FR	--
4	A	Noncombustible	4:12	(Optional) Any UL- classified polyisocyanurate insulation	Min. 1/4-inch-thick DensDeck or DensDeck Prime, 1/4-inch-thick plywood or 7/16-inch-thick OSB	RubberGard MAX FR	--
5	B	Combustible	1/2:12	(Optional) Max. 4-inch-thick Firestone "ISO 95+GL"	Min. 1/2-inch-thick Firestone "ISOGARD HD" or "RESISTA"	RubberGard LS-FR, MAX, MAX FR, Platinum	(Optional) PC-100 Coating
6	A	Combustible	2:12	1 1/2-inch-thick Firestone "ISO 95+GL"	Min. 1/4-inch-thick DensDeck or DensDeck Prime	RubberGard MAX FR	--
7	A	Combustible	1/2:12	1.3-inch-thick Firestone "ISO 95+GL"	--	RubberGard MAX FR	--

For SI: 1 inch = 25.4 mm.

<sup>1</sup>All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness noted in Section 5.4 of this report.

<sup>2</sup>Wood deck must be minimum 5/32-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (*f<sub>c</sub>*) of 2500 psi. [minimum of 24MPa is required under ADIBC Appendix L, Section 5.1.1].

<sup>3</sup>Polyisocyanurate insulation must comply with ASTM C1289.

<sup>4</sup>Barrier or cover boards, membranes and surface coatings must be UL-classified for roofing systems.

TABLE 4A—WIND RESISTANCE – ADHERED ROOFING SYSTEMS – WOOD DECKS

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
W-1	<sup>19</sup> / <sub>32</sub> -inch-thick plywood	--	--	<sup>1</sup> / <sub>2</sub> -inch-thick DensDeck Prime or SECUROCK Gypsum Fiber Roof Board	All-Purpose Fastener with Fastening Plate at 1 fastener per 1.6 ft <sup>2</sup>	RubberGard EcoWhite or EcoWhite Platinum	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45
W-2	<sup>19</sup> / <sub>32</sub> -inch-thick plywood	2-inch-thick Firestone "ISO 95+GL"	Heavy-Duty Fastener with Insulation Fastening Plate at 1 fastener per 1.78 ft <sup>2</sup>	--	--	RubberGard EcoWhite or EcoWhite Platinum	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45
W-3	<sup>15</sup> / <sub>32</sub> -inch thick plywood	Optional <sup>1</sup> / <sub>4</sub> -inch thick DensDeck Prime	I.S.O. STICK Adhesive in continuous <sup>3</sup> / <sub>4</sub> - to 1-inch wide ribbons at 12 inches o.c.	Min. 1-inch thick "RESISTA" or "ISO 95+ GL"	I.S.O. STICK Adhesive in continuous <sup>3</sup> / <sub>4</sub> - to 1-inch wide ribbons at 12 inches o.c.	RubberGard LS-FR, Fire Retardant RubberGard, RubberGard EcoWhite, RubberGard MAX, RubberGard MAX FR or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T), Single-Ply LVOC Bonding Adhesive, RubberGard, Single-Ply LVOC Bonding Adhesive 1168, WBBA (P) or EPDM Solvent Free Bonding Adhesive at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, barrier boards, cover boards, vapor barriers, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Wood deck must be minimum <sup>15</sup>/<sub>32</sub>-inch-thick (11.9 mm) plywood. See Section 5.7 of this report.

TABLE 4B—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - STEEL DECKS

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
S-1	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2 ft <sup>2</sup>	1/2-inch-thick "ISOGARD HD" or "RESISTA"	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide beads at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45
S-2	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Mechanically fastened per FM preliminary fastening requirements	1/2-inch-thick "ISOGARD HD" or "RESISTA"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2.7 ft <sup>2</sup>	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45
S-3	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2 ft <sup>2</sup>	-	-	RubberGard LS-FR, LS-FR PT, FR, MAX, MAX FR, MAX PT, or Platinum or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	45
S-4	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2.7 ft <sup>2</sup>	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to substrate only	30
S-5	Steel	Min. 2-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 4 ft <sup>2</sup>	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Insulation Adhesive in 1/2- to 3/4-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to substrate only	38

TABLE 4B—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - STEEL DECKS (CONTINUED)

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
S-6	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2 ft <sup>2</sup>	Min. 1/4-inch-thick DensDeck or DensDeck Prime	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide beads at 12 inches o.c.	RubberGard LS-FR, LS-FR PT, FR, MAX, MAX FR, MAX PT, Platinum, EcoWhite or EcoWhite Platinum or RubberGard EPDM SA (when no adhesive is used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 (DensDeck Prime only) at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	45
S-7	Steel	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 1.6 ft <sup>2</sup>	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide beads at 12 inches o.c.	RubberGard LS-FR, LS-FR PT, FR, MAX, MAX FR, MAX PT, Platinum, EcoWhite or EcoWhite Platinum or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	75
S-8	Steel	Min. 2-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 1.6 ft <sup>2</sup>	--	--	RubberGard LS-FR, LS-FR PT, FR, MAX, MAX FR, MAX PT, Platinum, EcoWhite or EcoWhite Platinum	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	82
S-9	Steel	1.5-inch-thick Firestone "ISO 95+GL"	Loose-laid	Min. 1/4-inch-thick DensDeck Prime	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2.1 ft <sup>2</sup>	RubberGard EcoWhite or EcoWhite Platinum	WBBA (PS) at 120 ft <sup>2</sup> per gallon to substrate and underside of membrane	30
S-10	Steel	1.5-inch-thick Firestone "ISO 95+GL"	Loose-laid	Min. 1/4-inch-thick DensDeck Prime	All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 1.8 ft <sup>2</sup>	RubberGard EcoWhite or EcoWhite Platinum	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	45

TABLE 4B—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - STEEL DECKS (CONTINUED)

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
S-11	Steel	1.5-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 2.67 fastener per ft <sup>2</sup>	-	-	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 45 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only or Single-Ply LVOC Bonding Adhesive at 60 ft <sup>2</sup> per gallon to the substrate and underside of the membrane	30
S-12	Steel	Min. 2-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 4 fastener per ft <sup>2</sup>	-	-	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon or WBBA (SP) at 120 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only, or Single-Ply LVOC Bonding Adhesive 1168 or Single-Ply LVOC Bonding Adhesive at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45
S-13	Steel	Min. 2-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per ft <sup>2</sup>	-	-	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	112

TABLE 4C—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - STEEL DECKS WITH VAPOR BARRIER

SYSTEM NO.	DECK <sup>3</sup>	VAPOR BARRIER		INSULATION		COVERBOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE	ATTACHMENT	TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
S-14	Steel	V-Force	Self-adhered and fully bonded with 3" wide side laps	1.5-inch thick Firestone "ISO 95+ GL"	I.S.O. Stick Adhesive in continuous <sup>3</sup> / <sub>4</sub> to 1-inch wide ribbons at 12 inches o.c.	-	-	RubberGard LS-FR, Fire Retardant Rubbergard, RubberGard EcoWhite, RubberGard MAX, RubberGard MAX FR or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 or WBBA (P)	68
S-15	Steel	V-Force	Self-adhered and fully bonded with 3" wide side laps	1.5-inch thick Firestone "ISO 95+ GL"	I.S.O. Twin Pack Insulation Adhesive in continuous <sup>3</sup> / <sub>4</sub> to 1-inch wide ribbons at 12 inches o.c.	-	-	RubberGard LS-FR, Fire Retardant RubberGard RubberGard EcoWhite, RubberGard MAX, RubberGard MAX FR or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive, Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or WBBA (P) at 120 ft <sup>2</sup> per gallon to substrate and underside of membrane	83

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, barrier boards, cover boards, vapor barriers, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. See Section 5.7 of this report.

**TABLE 4D—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - STEEL DECKS WITH BARRIER BOARD**

SYSTEM NO.	DECK <sup>3</sup>	BARRIER BOARD		INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE	ATTACHMENT	TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
S-16	Steel	Min. 1/4-inch-thick DensDeck or DensDeck Prime	Heavy-Duty or All-Purpose Fastener with Insulation Fastening Plate at 1 fastener per 2 ft <sup>2</sup>	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL" in 1 or 2 layers	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide ribbons at 12 inches o.c. or I.S.O. FIX II or I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Min. 1/4-inch-thick DensDeck Prime	I.S.O. Twin-Pack Insulation Adhesive in continuous 1/2- to 3/4-inch-wide ribbons at 12 inches o.c. or I.S.O. FIX II or I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive, Single-Ply LVOC Bonding Adhesive or Single-Ply Bonding LVOC Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	45

For **SI**: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, barrier boards, cover boards, vapor barriers, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. See Section 5.7 of this report.

TABLE 4E—WIND RESISTANCE – ADHERED ROOFING SYSTEMS - CONCRETE DECKS

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
C-1	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Full mopping of hot asphalt	Min. 1/4-inch-thick DensDeck	Full mopping of hot asphalt	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	165
C-2	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	Full mopping of hot asphalt	--	--	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	195
C-3	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. FIX II Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	1/2-inch-thick "ISOGARD HD" or "RESISTA"	I.S.O. FIX II Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon or WBBA (P) at 120 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2C-3</sup> per gallon to the substrate only or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	278
C-4	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Adhesive in continuous 1/2- to 3/4-inch-wide ribbons at 12 inches o.c.	1/2-inch-thick "ISOGARD HD" or "RESISTA"	I.S.O. FIX II Adhesive in continuous 1/2- to 3/4-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon, or WBBA (P) at 120 ft <sup>2</sup> per gallon to substrate and underside of membrane, or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only, or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	248



TABLE 4E—WIND RESISTANCE – ADHERED ROOFING SYSTEMS (CONTINUED)

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
C-5	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Min. 1/4-inch-thick DensDeck or DensDeck Prime	I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	232
C-6	Concrete	Min. 1.5-inch-thick Firestone "ISO 95+GL" Followed by an optional layer of Min. 1.5-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Adhesive in continuous 1/2- to 3/4-inch wide ribbons at 12 inches o.c. or I.S.O. STICK Adhesive or I.S.O. FIX II Adhesive applied to the substrate in continuous 3/4- to 1-inch wide ribbons at 12 inches o.c.	Min. 1/4-inch-thick DensDeck Prime	I.S.O. Twin-Pack Adhesive in continuous 1/2- to 3/4-inch wide ribbons at 12 inches o.c. or I.S.O. STICK Adhesive or I.S.O. FIX II Adhesive applied to the substrate in continuous 3/4- to 1-inch wide ribbons at 12 inches o.c.	RubberGard LS-FR, RubberGard LS-FR PT, Platinum, RubberGard MAX FR, RubberGard MAX, RubberGard MAX PT, Fire Retardant RubberGard, Rubbergard EcoWhite	Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	262.5
C-7	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	--	--	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	270

TABLE 4E—WIND RESISTANCE – ADHERED ROOFING SYSTEMS (CONTINUED)

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVER BOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
C-8	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	1/2-inch-thick "ISOGARD HD" or "RESISTA"	I.S.O. STICK Adhesive in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 (RESISTA only) at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to the substrate only	322
C-9	Concrete	Min. 1-inch thick Firestone "RESISTA" followed by optional layer of min. 1-inch thick Firestone "RESISTA"	I.S.O. Twin-Pack Adhesive in continuous 1/2- to 3/4-inch wide ribbons at 12 inches o.c. or I.S.O. STICK Adhesive or I.S.O. FIX II Adhesive applied to the substrate in continuous 3/4- inch to 1-inch wide ribbons at 12 inches o.c.	-	-	RubberGard LS-FR, RubberGard LS-FR PT, RubberGard Platinum, RubberGard MAX, RubberGard MAX FR, RubberGard MAX PT, RubberGard EcoWhite, Fire Retardant RubberGard	Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	450
C-10	Concrete	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL"	I.S.O. Twin-Pack Adhesive in 1/2- to 3/4-inch wide ribbons at 12 inches o.c.	-	-	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane or EPDM Solvent Free Bonding Adhesive at 150 ft <sup>2</sup> per gallon to substrate only	390
LC	Lightweight concrete, min. 160 psi	Min. 1.5-inch-thick to max. 4-inch-thick Firestone "ISO 95+GL", Hunter Panels "H-Shield" or Atlas Roofing Corp. "ACFoam-II"	Olympic Fasteners "OlyBond 500" in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Min. 1/4-inch-thick DensDeck or DensDeck Prime	Olympic Fasteners "OlyBond 500" in continuous 3/4- to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	225

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, barrier boards, cover boards, vapor barriers, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Concrete must have a minimum compressive strength (*f<sub>c</sub>*) of 2500 psi [minimum of 24MPa is required under ADIBC Appendix L, Section 5.1.1], unless otherwise noted. See Section 5.7 of this report.

**TABLE 4F—WIND RESISTANCE – ADHERED ROOFING SYSTEMS – CEMENTITIOUS WOOD FIBER DECKS**

SYSTEM NO.	DECK <sup>3</sup>	INSULATION		COVERBOARD		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE <sup>1</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
CWF	“Tectum I” cementitious wood fiber	Min. 1.5-inch-thick to max. 4-inch-thick Firestone “ISO 95+GL”, Hunter Panels “H-Shield” or Atlas Roofing Corp. “ACFoam-II”	Olympic Fasteners “OlyBond 500” in continuous <sup>3</sup> / <sub>4</sub> - to 1-inch-wide ribbons at 12 inches o.c.	Min. <sup>1</sup> / <sub>4</sub> -inch-thick DensDeck or DensDeck Prime	Olympic Fasteners “OlyBond 500” in continuous <sup>3</sup> / <sub>4</sub> - to 1-inch-wide ribbons at 12 inches o.c.	Any RubberGard membrane or RubberGard EPDM SA (when an adhesive is not used)	BA-2004 (T) Bonding Adhesive or Single-Ply LVOC Bonding Adhesive 1168 at 60 ft <sup>2</sup> per gallon to substrate and underside of membrane	45

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, barrier boards, cover boards, vapor barriers, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Concrete must have a minimum compressive strength (*f<sub>c</sub>*) of 2500 psi [minimum of 24MPa is required under ADIBC Appendix L, Section 5.1.1], unless otherwise noted. See Section 5.7 of this report.

**TABLE 5—WIND RESISTANCE – MECHANICALLY FASTENED ROOFING SYSTEMS**

SYSTEM NO	DECK <sup>3</sup>	INSULATION		MEMBRANE		ALLOWABLE WIND UPLIFT PRESSURE (psf)
		TYPE <sup>1,2</sup>	ATTACHMENT <sup>1</sup>	TYPE	ATTACHMENT <sup>1</sup>	
MW-1	Wood	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard MAX, MAX FR or MAX PT	QuickSeam R.M.A. Strip At 9 ft-6 inches o.c., with Polymer Batten Bar and All-Purpose Fasteners at 6 inches along the batten bar	45
MSC-1	Steel or concrete	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard MAX, MAX FR or MAX PT	Heavy-Duty Fastener or All-Purpose Fastener (on steel deck only) with V-Plate at 6 inches o.c. within the roof cover 7-inch laps, in rows 7 ft o.c.	52
MS-1	Steel	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard LS-FR, LS-FR PT, FR or Platinum	QuickSeam R.M.A. Strip At 7 ft o.c., with Coiled Metal Batten Bar and All-Purpose Fasteners at 6 inches along the batten bar	30
MS-2	Steel	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard MAX, MAX FR or MAX PT	Coiled Metal Batten Bar and Heavy-Duty Fastener at 6 inches o.c. within the roof cover 7-inch laps, in rows 7 ft o.c.	38
MS-3	Steel	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard LS-FR, LS-FR PT, FR or Platinum	QuickSeam R.M.A. Strip At 6 ft o.c., with Coiled Metal Batten Bar and Heavy Duty Fasteners at 12 inches along the batten bar	38
MS-4	Steel	Min. 1.5-inch-thick, any UL- classified polyisocyanurate insulation	Mechanically fastened per FM preliminary fastening requirements	RubberGard MAX, MAX FR or MAX PT	Coiled Metal or Polymer Batten Bar and Heavy-Duty or All-Purpose Fastener at 6 inches o.c. within the roof cover 6-inch wide side laps, and in rows 7 ft o.c.	52

For SI: 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa; 1 gal = 3.785 L.

<sup>1</sup>Insulation, adhesives and fasteners must be FM-approved.

<sup>2</sup>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.

<sup>3</sup>Wood deck must be minimum <sup>1</sup>/<sub>32</sub>-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (*f<sub>c</sub>*) of 2500 psi, unless otherwise noted. See Section 5.7 of this report.