



# Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

# Report No: 2312-07



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# StoVentec<sup>™</sup> Glass Rainscreen<sup>®</sup> System

# **Trade Secret Report Holder:**

# **Sto Corporation**

Phone: 800-221-2397

Website: www.stocorp.com

Email: dhohenstern@stocorp.com

# **CSI Designations:**

#### DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 21 00 - Thermal Insulation Section: 07 25 00 - Water-Resistive Barriers/Weather Barriers Section: 07 27 00 - Air Barriers Section: 07 42 00 - Wall Panels Section: 07 44 63 - Fabricated Faced Panel Assemblies Section: 07 48 00 - Exterior Wall Assemblies

# **1** Innovative Product Evaluated<sup>1</sup>

1.1 StoVentec Glass Rainscreen System

# 2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1** and **Figure 2**.



Figure 1. StoVentec Glass Rainscreen System Assembly







Figure 2. StoVentec Glass Rainscreen System - Components

- 2.2 StoVentec Glass Rainscreen System is a ventilated rainscreen cladding system.
  - 2.2.1 The outer rainscreen is comprised of tempered safety glass permanently bonded to StoVentec Carrier Board.
  - 2.2.2 A StoVentro<sup>™</sup> galvanized or stainless steel and aluminum sub-construction supports the glass composite panel and creates space for mineral wool insulation and a circulating air layer that promotes rapid drying.
    - 2.2.2.1 The galvanized steel brackets have a total (both sides) coating weight of 430 g/m<sup>2</sup> (1.41 oz/ft<sup>2</sup>), complying with ASTM A653 type G140.
  - 2.2.3 See **Table 1** for additional details.





#### Table 1. StoVentec Glass Rainscreen System – Components and Description

Sub-assembly	Component(s)	Description				
Structural Wall Assembly	Conc	crete, masonry, framed wall (wood or cold-formed steel) with sheathing				
Air and Moisture Barrier	Sto AirSeal®	A fluid applied air and water-resistive barrier designed for use on most substrates including glass mat gypsum sheathing, wood-based sheathing, concrete and masonry.				
StoVentro	StoVentro Bracket	StoVentro sub-construction forms the structural link between the facade and the				
Sub-Construction	StoVentro T-Profile	supporting wall construction. StoVentro brackets, made of aluminum, galvanized steel, or stainless steel,				
	StoVentro Agraffe Profile	accommodate wall cavity depths of 40 mm to 360 mm $(1^{9}/_{16}" - 14^{3}/_{16}")$ , with lengths in 20 mm $(1^{3}/_{16}")$ increments. Brackets are secured to structural wall via anchoring elements, which are engineered, code-compliant fasteners $(1^{1}/_{4}" SD2 Bi-Met 300^{\circ})$ Metal Self-Drill Screw, HWH, 304 Stainless Steel may be provided by Sto Corporation). StoVentro T-Profiles, made of aluminum, are attached to StoVentro brackets and support StoVentro Agraffe profiles. StoVentro sub-construction screws, made of stainless steel, are used for the connection between the brackets and Agraffe profiles. StoVentro sub-construction grass panel assembly base on the insertion depth of the StoVentro " <i>T</i> " or " <i>L</i> " profiles into the wall brackets.				
Thermal Insulation	Mineral Wool	Any ASTM C612 compliant, non-combustible (ASTM E136 compliant) mineral wool classified into types and categories: Type IA, IB, IVA. <b>Note:</b> Mineral wool shall have a density of 4.3 lb/ft <sup>3</sup> .				
StoVentec Glass Panel Assembly	StoVentro Panel Profile	The StoVentec glass panel assembly is the exterior glass panel on the rainscreen assembly. The StoVentec glass panel assembly is an opaque glass-faced composite				
	StoVentec Carrier Board	panel where the glass is fully bonded to a StoVentec Carrier Board, a lightweight composite board made of recycled glass granulate or closed-cell expanded perlite.				
	StoVentec Glass Facade	shop drawings, and are delivered to the project site ready for installation. StoVentec glass panel assemblies are hung onto their StoVentro Agraffe Profile counterparts located on StoVentro sub-construction. After installation, the glass panel assemblies can be leveled using the StoVentro Adjustment Screw, located on the top of the StoVentro Agraffe profile.				

2.3 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

# 3 Definitions<sup>2</sup>

- 3.1 <u>New Materials</u><sup>3</sup> are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.<sup>4</sup> The <u>design strength</u> and permissible stresses shall be established by tests<sup>5</sup> and/or engineering analysis.<sup>6</sup>
- 3.2 <u>Duly authenticated reports</u><sup>7</sup> and <u>research reports</u><sup>8</sup> are test reports and related engineering evaluations that are written by an <u>approved agency</u><sup>9</sup> and/or an <u>approved source</u>.<sup>10</sup>
  - 3.2.1 These reports utilize intellectual property and/or trade secrets to create public domain material properties for commercial end-use.
    - 3.2.1.1 This report protects confidential Intellectual Property and trade secretes under the regulation, <u>18.US.Code.90</u>, also known as <u>Defend Trade Secrets Act of 2016</u> (DTSA).<sup>11</sup>
- 3.3 An approved agency is *"approved"* when it is <u>ANAB ISO/IEC 17065 accredited</u>. DrJ Engineering, LLC (DrJ) is accredited and listed in the <u>ANAB directory</u>.





- 3.4 An <u>approved source</u> is *"approved"* when a professional engineer (i.e., <u>Registered Design Professional</u>, hereinafter <u>RDP</u>) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the <u>state legislature</u> via its professional engineering regulations.<sup>12</sup>
- 3.5 Testing and/or inspections conducted for this <u>duly authenticated report</u> were performed by an <u>ISO/IEC 17025</u> <u>accredited testing laboratory</u>, an <u>ISO/IEC 17020 accredited inspection body</u>, and/or a licensed <u>RDP</u>.
  - 3.5.1 The <u>Center for Building Innovation</u> (CBI) is <u>ANAB<sup>13</sup> ISO/IEC 17025</u> and <u>ISO/IEC 17020</u> accredited.
- 3.6 The regulatory authority shall <u>enforce</u><sup>14</sup> the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in <u>writing</u><sup>15</sup> stating the nonconformance and the path to its cure.
- 3.7 The regulatory authority shall accept <u>duly authenticated reports</u> from an <u>approved agency</u> and/or an <u>approved</u> <u>source</u> with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.<sup>16</sup>
- 3.8 ANAB is an <u>International Accreditation Forum</u> (IAF) <u>Multilateral Recognition Arrangement</u> (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.<sup>17</sup> Thus, all ANAB ISO/IEC 17065 <u>duly authenticated reports</u> are approval equivalent,<sup>18</sup> and can be used in any country that is an MLA signatory found at this link: <u>https://iaf.nu/en/recognised-abs/</u>
- 3.9 Approval equity is a fundamental commercial and legal principle.<sup>19</sup>

# 4 Applicable Local, State, and Federal Approvals; Standards; Regulations<sup>20</sup>

- 4.1 Local, State, and Federal
  - 4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 <u>duly authenticated report</u> use, which includes the following featured local jurisdictions and is not limited to Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, Texas Department of Insurance, and Wichita.<sup>21</sup>
  - 4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 <u>duly authenticated report</u> use, which includes the following featured states, and is not limited to California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.<sup>22</sup>
  - 4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14<sup>23</sup> and Part 3280<sup>24</sup> pursuant to the use of ISO/IEC 17065 <u>duly</u> <u>authenticated reports</u>.
  - 4.1.4 Approved means complying with the requirements of local, state, or federal legislation.
- 4.2 Standards
  - 4.2.1 AAMA 501.1: Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors, using Dynamic Pressure
  - 4.2.2 AAMA 509: Voluntary Test and Classification Method for Drained and Back Ventilated Rain Scree Wall Cladding Systems
  - 4.2.3 ASCE 7/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
  - 4.2.4 ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
  - 4.2.5 ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference





- 4.2.6 ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- 4.2.7 BS 6206: Specification for Impact Performance Requirements for Flat Safety Glass and Safety Plastics for use in Buildings
- 4.2.8 BS 8200: Code of Practice for Design of Non-loadbearing External Vertical Enclosures of Buildings
- 4.2.9 BS EN 356: Glass in Building. Security Glazing. Testing and Classification of Resistance Against Manual Attack
- 4.2.10 BS EN 12600: Glass in Building. Pendulum Test. Impact Test Method and Classification for Flat Glass
- 4.2.11 CPNI Test Standard Explosion Resistance of Curtain Walling Part 1: Requirements and Classification
- 4.2.12 CPNI Test Standard Explosion Resistance of Curtain Walling Part 2: Test Method
- 4.2.13 NFPA 285-12: Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components
- 4.2.14 Testing Application Standard (TAS) 201-94: Impact Test Procedures
- 4.2.15 Testing Application Standard (TAS) 202-94: Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components Using Uniform Static Air Pressure
- 4.2.16 Testing Application Standard (TAS) 203-94: Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

#### 4.3 Regulations

- 4.3.1 IBC 15, 18, 21, 24: International Building Code®
- 4.3.2 IRC 15, 18, 21, 24: International Residential Code®
- 4.3.3 IECC 15, 18, 21, 24: International Energy Conservation Code®
- 4.3.4 FBC-B 20, 23: Florida Building Code Building<sup>25</sup> (FL 47006)
- 4.3.5 FBC-R 20, 23: Florida Building Code Residential<sup>25</sup> (FL 47006)
- 4.3.6 Miami-Dade County, Florida Department of Regulatory and Economic Resources Product Control Section – Checklist #0285 for the Approval of: Wall Panels, Sheathing, Siding & Soffit (When Made with Other than Metal)

# 5 Listed<sup>26</sup>

5.1 Equipment, materials, products, or services included in a List published by a <u>nationally recognized testing</u> <u>laboratory</u> (i.e., CBI), an <u>approved agency</u> (i.e., CBI and DrJ), and/or and <u>approved source</u> (i.e., DrJ), or other organization(s) concerned with product evaluation (i.e., DrJ), that maintains periodic inspection (i.e., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

# 6 Tabulated Properties Generated from Nationally Recognized Standards

- 6.1 General
  - 6.1.1 The StoVentec Glass Rainscreen System is used as an exterior wall covering in accordance with <u>IBC</u> <u>Section 1404<sup>27</sup></u> and <u>IRC Section R703</u>.
    - 6.1.1.1 StoVentec Glass Rainscreen System can be installed over wood-framed, steel-framed, masonry, or concrete walls capable of supporting the imposed loads in accordance with <u>IBC Section 1609</u>.





### 6.2 Structural Design

- 6.2.1 Walls incorporating StoVentec Glass Rainscreen System shall be designed to resist wind loads per <u>IBC</u> Section 1609, IRC Section R301.2.1, and ASCE/SEI 7 Chapter 30.
- 6.2.2 StoVentec Glass Rainscreen System assembly details are shown below in **Table 2**, and allowable wind loads shown are shown in **Table 3**.

	Wall Details			StoVentro Sub-Construction Details			Glass Details		
Assembly ID	Framing Member Type and Size	Framing Member Spacing	Exterior Sheathing Material	Bracket Spacing (Vertical)	T-Rail Spacing (Horizontal)	Agraffe Rail Spacing	Thickness	Glass Panel (Wall) Size	
#1				od 24" o.c.			18" o.c.		40" y 1003/-"
#2					16" o.c.	40" o.c.	1/4"	40 X 102°/8	
#3	18-gauge, CFS Stud: 1⁵/₀" x 6" Track: 1¹/₄" x 6"	16" o.c.	16" o.c. <sup>5</sup> /8" Plywood		24" o.c.	24" and 17 <sup>11/</sup> 16" o.c.		48" x 125"	
#4					2011	18" o.c.	5/ "	945/ " > 1003/ "	
#5			32 O.C.	40" o.c.	°/16	04% x 102%			
SI: 1 in = 25.4 mm									

#### Table 2. StoVentec Glass Rainscreen System Assembly Details

#### Table 3. Allowable Wind Load Resistance<sup>1</sup>

Assembly		Allowable Design	Vult, Exposure Category <sup>3</sup> (mph)			V <sub>asd</sub> , Exposure Category <sup>4</sup> (mph)		
ID <sup>2</sup> Direction	Direction	Load (psf)	В	С	D	В	С	D
#1	Negative	145	200	200	200	155	155	155
#1	Positive	155	200	200	200	155	155	155
#2	Negative	85	200	200	190	155	155	145
#2	Positive	155	200	200	200	155	155	155
#2	Negative	115	200	200	200	155	155	155
#3	Positive	170	200	200	200	155	155	155
#1	Negative	105	200	200	200	155	155	155
#4	Positive	140	200	200	200	155	155	155
#5	Negative	55	195	165	150	150	130	115
#5	Positive	135	200	200	200	155	155	155

SI: 1 in = 25.4 mm, 1 psf = 0.0479 kN/m<sup>2</sup>, 1 mph = 1.61 km/h

1. Tested in accordance with ASTM E330.

2. See **Table 2** for assembly details.

3. Wind speeds are based on the methodology detailed in ASCE 7-22 and the following assumptions:

a. A building height of 30-ft, GC<sub>p</sub>= -1.4 for Zone 5 and an Effective Wind Area of 10 ft<sup>2</sup>, Topographic Factor: K<sub>2t</sub>=1.0, Ground Elevation Factor: K<sub>e</sub>=1.0, Internal Pressure Coefficient, GC<sub>p</sub>=+/-0.18 for an enclosed building, K<sub>d</sub> = 0.85 for "Component and Cladding"

b. V<sub>ult</sub> is limited to 200 mph.

4

 $V_{asd} = V_{ult} \sqrt{0.6} V_{asd}$  is limited to 155 mph  $200\sqrt{0.6}$ .





#### 6.3 High Velocity Hurricane Zone (HVHZ) – Wind and Impact Testing

- 6.3.1 Pursuant to Note 3 in <u>Miami-Dade County, Florida Department of Regulatory and Economic Resources</u> <u>Product Control Section – Checklist #0285</u>, StoVentec siding and cladding products are exempt from impact and positive pressure tests if one of the following conditions is met:
  - 6.3.1.1 The product is installed on exterior walls that are at minimum, comprised of either nominal 2x wood studs or 2 x 6 18-gauge CFS framing members. The members are spaced a maximum of 16" o.c., and are sheathed with 5/8" plywood.
  - 6.3.1.2 The product is installed in front of a concrete block structure with construction complying with ASTM C90.
  - 6.3.1.3 StoVentec Glass Rainscreen System installed on walls other than the ones described in **Section** 6.3.1.1 and **Section 6.3.1.2** for HVHZ are outside the scope of this report.
- 6.3.2 StoVentec Glass Rainscreen System was evaluated in accordance with TAS 202 and meets the uniform static air pressure criteria for HVHZ in accordance with <u>FBC-B Section 1620</u>.
- 6.3.2.1 The allowable static design pressure for each assembly is shown in **Table 5**.
- 6.3.3 StoVentec Glass Rainscreen System was evaluated in accordance with TAS 203 and met the fatigue load test criteria for HVHZ in accordance with <u>FBC-B Section 1625</u>.
  - 6.3.3.1 The assemblies resisted cyclic loading per <u>FBC-B Table 1625.4</u> for the design loads shown in **Table 5** for each assembly.
- 6.3.4 StoVentec Glass Rainscreen System assembly details for HVHZ evaluation are shown in **Table 4**. The assessment of the HVHZ testing is summarized in **Table 5**.

#### Table 4. StoVentec Glass Rainscreen System HVHZ Assembly Details

	Wall Details			StoVentro Sub-Construction Details			Glass Details	
Assembly ID	Framing Member Type and Size	Framing Member Spacing	Exterior Sheathing Material	Bracket Spacing (Vertical)	T-Rail Spacing (Horizontal)	Agraffe Rail Spacing	Thickness	Glass Panel (Wall) Size
#1	18-gauge, CFS Stud: 15/s" x 6"	FS				18" o.c.	6 mm or	48" x 102 <sup>3</sup> /8"
#2	Track and Flange: 11/4" x 6"	16" o.c.	<sup>5</sup> /8" plywood	24" o.c.	16" o.c.	40" o.c.	8 mm	48" x 102 <sup>3</sup> /8"
SI: 1 in = 25.4 m	ım					•		

#### Table 5. High Velocity Hurricane Zone Application Assessment

Assembly Design Load1		TAS 201		TAS	TAS 203	
ID	(psf)	Large Missile Impact	Small Missile Impact	Water Penetration	Uniform Static Load	Cyclic Wind
#1	100	Evenuet2	Exempt <sup>2</sup>	Pass	Pass	Pass
#2	70	⊏xempl²		Pass	Pass	Pass
SI: 1 psf = 0.048	3 kPa					

1. Design load values are for both positive and negative loading directions.

2. Exemption based on Miami-Dade County, Florida Department of Regulatory and Economic Resources Product Control Section - Checklist #0285.





#### 6.4 Flame Spread Index and Smoke Developed Index

6.4.1 The flame spread and smoke developed index performance of StoVentec Glass Rainscreen System components are shown in **Table 6**.

Table 6. Surface Burning Characteristics of the StoVentec Glass Rainscreen System Components<sup>1</sup>

StoVentec Glass Rainscreen System Component	Flame Spread	Smoke Developed Index	Classification	
Sto AirSeal	≤ 25	≤ 450	Class A	
StoGuard VaporSeal	≤ 25	≤ 450	Class A	
Sto Gold Coat	≤ 25	≤ 450	Class A	
Sto Carrier Board	≤ 25	≤ 450	Class A	
1. Laminate and XPS tested in accordance with ASTM E84/ UL723.				

6.5 *Moisture Vapor Permeance* 

6.5.1 The moisture vapor permeance of StoVentec Glass Rainscreen System components are shown in **Table 7**.

Table 7 Moisture	Vapor Permeance	of Components <sup>1</sup>
	vapor i enneance	or components

StoVentec Glass Rainscreen System Component	Vapor Permeance	Classification
Sto AirSeal	<10 perms <sup>2</sup>	Class III
Sto VaporSeal	<0.1 perm <sup>2</sup>	Class I
Sto Gold Coat	<10 perms <sup>2</sup>	Class III
<ol> <li>Tested in accordance with ASTM E96.</li> <li>Procedure A, Desiccant Method.</li> </ol>		

6.6 Air Barrier

- 6.6.1 Air leakage of the StoVentec Glass Rainscreen System was evaluated in accordance with ASTM E283.
  - 6.6.1.1 StoVentec Glass Rainscreen System complies with <u>IECC Section C402.6.2.3.2</u>.<sup>28</sup>
- 6.6.2 As listed in **Table 8**, StoVentec Glass Rainscreen System components meet the requirements of <u>IECC</u> <u>Section C402.6.2.3.1</u><sup>29</sup> for use as an air barrier when installed in accordance with the manufacturer installation instructions and this report. The air barrier properties are shown in **Table 8**.

Table 8. Air Barrier Properties of StoVentec Glass Rainscreen System Components<sup>1,2</sup>

StoVentec Glass Rainscreen System Component	Air Leakage L/(s⋅m²)	
Sto AirSeal	< 0.02	
StoGuard VaporSeal	< 0.02	
Sto Gold Coat	< 0.02	
<ol> <li>Tested in accordance with ASTM 2178.</li> <li>Values are taken at 75 Pa.</li> </ol>		





### 6.7 Weather Protection

- 6.7.1 StoVentec Glass Rainscreen System assemblies were evaluated in accordance with AAMA 509.
  - 6.7.1.1 StoVentec Glass Rainscreen System achieved a V2/W1 Classification.
- 6.8 Vertical and Lateral Fire Propagation
  - 6.8.1 Vertical and lateral fire propagation of StoVentec Glass Rainscreen System was evaluated in accordance with NFPA 285.
  - 6.8.2 The assemblies described in **Table 9** meet the conditions of acceptance of NPFA 285.

Component	Description
Exterior Wall Assembly/Framing	<ol> <li>Cast concrete walls</li> <li>CMU concrete walls</li> <li>CMU concrete walls</li> <li>18-gauge, 6" deep by 1<sup>5</sup>/<sub>8</sub>" flange steel studs and 20-gauge tracks installed with <sup>1</sup>/<sub>2</sub>" pan head framing screws spaced 16" o.c.</li> <li>Optional: Fill or partially fill steel stud wall cavity with non-combustible insulation, mineral fiber or fiberglass insulation meeting FSI 25 and SDI 450 when tested in accordance with ASTM E84.</li> </ol>
Interior Gypsum	<ol> <li>For steel stud wall framing:         <ul> <li>ASTM C1369 compliant, <sup>5</sup>/<sub>8</sub>" thick Type X gypsum board installed with long dimension perpendicular to steel studs using #14 x 1<sup>1</sup>/<sub>4</sub>" self-tapping bugle head screws spaced 8" o.c. at the edge and 12" in the field. All joints and screw heads shall receive a Level 2 finish.</li> </ul> </li> </ol>
Exterior Sheathing/Construction	<ol> <li>For steel stud wall framing:         <ul> <li>Glass mat: ASTM C1177 or ASTM C1658 compliant, <sup>1</sup>/<sub>2</sub>" thick Georgia Pacific DensGlass Gold Exterior Sheathing installed with long dimension perpendicular to steel studs using #14 x 1<sup>1</sup>/<sub>4</sub>" self-tapping bugle head screws spaced 8" o.c. at the edge and 12" in the field. All joints covered with one layer of StoGuard 80207 Fabric embedded in Sto AirSeal 81210. Rough opening covered with StoGuard 80209 Redicorner and StoGuard 80208 Fabric embedded in Sto AirSeal 81210.</li> </ul> </li> <li>Note: Exterior wall construction may also be concrete or masonry of sufficient structural capacity to support the weight of the StoVentec Glass Rainscreen System.</li> </ol>
Air and Moisture Barrier (Apply one according to manufacturer instruct- ions, to exterior side of the structural wall assembly)	<ol> <li>Sto AirSeal: a fluid-applied polymeric air and water-resistive barrier rolled or sprayed over gypsum board joints and wall edges at a nominal thickness of 20 wet mils and embed StoGuard Fabric in wet material. Spray-apply Sto AirSeal vapor permeable air barrier over the entire wall area, including joints and edges, at a nominal thickness of 50 to 70 wet mils.</li> <li>StoGuard VaporSeal R: a fluid-applied polymeric air, vapor and water-resistive barrier rolled or sprayed in a two-coat process at a wet film thickness of 15 mils per coat and embed StoGuard Fabric in wet material.</li> <li>Sto Gold Coat (81636 or 80265): a fluid-applied polymeric air and water-resistive barrier applied at a wet film thickness of 10-20 mils and embed StoGuard Fabric in wet material.</li> <li>Where the air and moisture barrier is applied over sheathing, (as an alternative to StoGuard Fabric) joints are to be first treated with Sto Gold Fill<sup>®</sup> and mesh reinforcement, StoGuard RapidFill<sup>™</sup> or Sto RapidGuard<sup>™</sup> in accordance with manufacturer instructions.</li> </ol>

#### Table 9. StoVentec Glass Rainscreen System NFPA 285 Assembly Details





Table 9 StoVentoe Class Painceroon	System NEDA 285 Assembly Datails
Table 9. Sloveniec Glass Rainscreen a	System NEFA 200 Assembly Details

Component	Description
Exterior Insulation	<ol> <li>ASTM C612 and ASTM E136 compliant, minimum 2" thick non-combustible mineral wool insulation having a density between 3<sup>1</sup>/<sub>2</sub> and 4<sup>1</sup>/<sub>2</sub> pcf installed onto wall using 16-gauge pins at a minimum of five (5) locations per insulation section (one at each corner and one at the approximate center). Pins shall be <sup>1</sup>/<sub>2</sub>" to 1" longer than the thickness of insulation.</li> </ol>
	<ul> <li>Note: Thickness of insulation shall be based on depth of wall brackets (minimum ventilation cavity space between the insulation and the wall bracket (bottom surface of the StoVentro T-Profile) shall be minimum 20 mm (approximately <sup>13</sup>/<sub>16</sub>") and maximum 50 mm (approximately 2"). Cavity, when measured from the face of the insulation to the inward facing side of the StoVentec Panel is 90 mm max (approximately 3<sup>9</sup>/<sub>16</sub>"). Pins can be secured onto wall via adhesive or one #10x1<sup>3</sup>/<sub>8</sub>" self-tapping bugle-head screw per pin base at steel stud locations (screws shall be a minimum <sup>3</sup>/<sub>8</sub>" longer than the combined sheathing and stud thickness).</li> </ul>
Window Header, Floorline Insulation and Intumescing Gasket	<ol> <li>ASTM C612 and ASTM E136 compliant, non-combustible mineral wool insulation having a density of 6 pcf, installed as continuous strip on top of the window header and at the floor line extending 4" either wide of the window using 16-gauge pins. Thickness based on depth of cavity which extends from the substrate to be within 1", but no closer than 9/16" from the inward facing side of the panel.</li> <li>ROKU® Strip 4" wide x 5/64" thick installed at the front face of each of the two mineral wool sections located at the window header and floor line using #12 x 6" self-tapping sheet metal screws spaced approximately 32" and 48" o.c. Two screws were used at each location.</li> <li>Minimum 28-gauge metal fire breaks spanning the cavity. Metal break may be supported by underlying structure or StoVentro T-Profiles in combination with ancillary wall brackets and shall either penetrate the wall insulation by 50 mm or be used in conjunction with the wall insulation and the metal fire break.</li> </ol>
Rainscreen Cladding	1. StoVentec Glass cladding panels bonded to StoVentec Carrier Board A+ or Sto Carrier Hydro.
Joint System	1. All joints, vertical and horizontal, between panels to be 5 mm to 12 mm.
	Note: Joints can be open (dry) or sealed.
Opening Head and Sill Flashing	<ol> <li>Minimum 26-gauge steel head flashing adhered with silicone or mechanically fixed to top of opening treated with weather barrier. Minimum 26-gauge steel still flashing adhered with silicone to bottom of opening with supplemental fasteners.</li> </ol>
	<b>Note:</b> ASTM C1177 compliant gypsum sheathing may be used to line opening prior to application of weather barrier.
Opening Jamb	<ol> <li>Minimum 26-gauge steel jamb profile bridging the gap between the opening and the edge of the panel.</li> <li>StoVentec Glass Panel, no less than 100 mm wide, may be used to create the return bridging the gap between the opening and the outward facing panel.</li> </ol>
Floorline Firestopping	1. Provide floor line fire stopping as required per building code.
SI: 1 in = 25.4 mm	





#### 6.9 *Fire-Rated Assemblies*

- 6.9.1 StoVentec Glass Rainscreen System may be installed over existing 1-hour fire-resistance rated wall assemblies, either load bearing or non-load bearing, and will be able to maintain the fire resistance rating of the wall assemblies.
- 6.10 Impact Resistance
  - 6.10.1 StoVentec Glass Rainscreen System was evaluated for impact resistance in accordance with BS 6206, BS 8200, BS EN 356, and BS EN 12600.
    - 6.10.1.1 StoVentec Glass Panels were able to resist the 100 mm  $(3^{15}/_{16}")$  diameter, solid steel impactor with a mass of 4.11 kg (9.1 lb) from penetrating through at a vertical drop-height of 9 m  $(29^{1}/_{2}")$ .
    - 6.10.1.2 StoVentec Glass Panels comply with BS 6206 Class A at a drop height of 1,219 mm (48") with a soft body having a total mass of 45 kg (100 lb).
    - 6.10.1.3 StoVentec Glass Panels comply with BS EN 12600 Class 1 at a drop height of 1,200 mm (47<sup>1</sup>/<sub>4</sub>") with a soft body having a total mass of 50 kg (110 lb).
    - 6.10.1.4 StoVentec Glass Panels comply with BS 8200 Category B.
      - 6.10.1.4.1 Impact energy of 10 N·m (7.4 lb·ft) with a hard body.
      - 6.10.1.4.2 Impact energy of 500 N·m (369 lb·ft) with a soft body.
- 6.11 Blast Resistance
  - 6.11.1 StoVentec Glass Rainscreen System was evaluated for blast resistance in accordance with CPNI Test Standard Explosion Resistance of Curtain Walling.
    - 6.11.1.1 Loading Category, VXRU (user defined):
      - 6.11.1.1.1 Peak Reflected Pressure, Pr: 594 kPa
      - 6.11.1.1.2 Peak Reflected Specific Impulse, Ir: 791 kPa·ms
      - 6.11.1.1.3 Values exceed Loading Category VXR4. The following ratings are applicable to Loading Category VXR4 and below:
        - 6.11.1.1.3.1 Per Table A.1 in Annex A of NPSA TEST STANDARD Explosion Resistance of Windows and Curtain Walling Part 1: Requirements and Classification, a charge mass (TNT equivalent) of 100 kg (220 lb) and a stand-off distance of 20 m (65 ft) are likely to create the blast load for the VXR4 Loading Category.
    - 6.11.1.2 StoVentec Glass Rainscreen System achieved an:
      - 6.11.1.2.1 Internal Hazard Rating of B no hazard
      - 6.11.1.2.2 External Hazard Rating of Y limited hazard
- 6.12 Where the application falls outside of the performance evaluation, conditions of use, and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science, and fire science.

# 7 Certified Performance<sup>30</sup>

- 7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.<sup>31</sup>
- 7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.<sup>32</sup>





# 8 Regulatory Evaluation and Accepted Engineering Practice

- 8.1 StoVentec Glass Rainscreen System complies with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:
  - 8.1.1 Exterior wall covering in accordance with <u>IBC Section 1402</u>, <u>IBC Section 1403</u>, <u>IBC Section 1404</u>, and <u>IRC Section R703</u> for use in Types I-IV construction defined in <u>IBC Section 602</u>.
  - 8.1.2 Structural design in accordance with <u>IBC Section 1609</u> per <u>IBC Section 1402.3</u> and <u>IRC Section R301.2.1</u> per <u>IRC Section R703.1.2</u> for wind loads.
  - 8.1.3 Weather resistance in accordance with <u>IBC Section 1402.2</u> and <u>IRC Section R703.1.1</u>.
  - 8.1.4 NFPA 285 full scale tests in accordance with <u>IBC Section 1402.5</u>.
- 8.2 StoVentec Glass Rainscreen System was tested in accordance with TAS 202 and TAS 203 to determine its suitability for use in the High Velocity Hurricane Zone (HVHZ) in accordance with the <u>FBC-B Section 1620</u>, <u>FBC-B Section 1625</u>, and <u>FBC-B Section 1626</u>.
  - 8.2.1 Evaluation of TAS 201 impact testing in accordance with <u>FBC-B Section 1626</u> was exempted pursuant to Note 3 in <u>Miami-Dade County</u>, Florida Department of Regulatory and Economic Resources Product <u>Control Section – Checklist #0285</u> and the assembly described in **Table 4**.
    - 8.2.1.1 Subject to conditions specified in **Section 12** of this report.
- 8.3 Use of StoVentec Glass Rainscreen System as part of a 1-hour fire-rated wall assembly shall only be permitted when installed over existing fire-resistance rated wall assemblies. This includes both steel and wood framed wall assemblies that have gypsum wallboard installed on both faces of the stud framing, CMU block exterior wall assemblies or cast concrete wall assemblies.
- 8.4 Use of StoVentec Glass Rainscreen System for interior applications is outside the scope of this report.
- 8.5 Any building code, regulation and/or accepted engineering evaluations (i.e., <u>research reports</u>, <u>duly</u> <u>authenticated reports</u>, etc.) that are conducted for this Listing were performed by DrJ, which is an <u>ISO/IEC</u> <u>17065 accredited certification body</u> and a professional engineering company operated by <u>RDP</u> or <u>approved</u> <u>sources</u>. DrJ is qualified<sup>33</sup> to practice product and regulatory compliance services within its <u>scope of</u> <u>accreditation and engineering expertise</u>,<sup>34</sup> respectively.
- 8.6 Engineering evaluations are conducted with DrJ's ANAB <u>accredited ICS code scope</u> of expertise, which is also its areas of professional engineering competence.
- 8.7 Any regulation specific issues not addressed in this section are outside the scope of this report.

# 9 Installation

- 9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.
- 9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.
- 9.3 General
  - 9.3.1 StoVentec Glass Rainscreen System shall be installed over exterior wall assemblies complying with <u>IBC</u> <u>Section 1402.3</u> using the StoVentro sub-construction described in **Table 1**.
    - 9.3.1.1 Exterior wall assemblies shall include flashing, a water-resistive barrier (Sto AirSeal), water drainage (ventilation cavity), and protection against condensation in accordance with <u>IBC Section 1402.2</u> and <u>IRC Section R703.1.1</u>.





- 9.3.2 Components of the StoVentro sub-construction shall be installed in accordance with the following:
  - 9.3.2.1 StoVentro Bracket to Structural Wall Assembly:
    - 9.3.2.1.1 #14 x 2" stainless steel screw.
    - 9.3.2.1.2 A minimum of three threads shall protrude from the CFS framing member when screw is installed flush with the StoVentro Bracket.
    - 9.3.2.1.3 Fastener penetration into wood framing members shall be a minimum of 1".
    - 9.3.2.1.4 Engineered calculation for minimum fastener size and penetration may be required in order to resist the desired wind speed.
  - 9.3.2.2 StoVentro T-Profile to StoVentro Bracket:
    - 9.3.2.2.1  $\#12 \times 7/8"$  stainless steel screw.
    - 9.3.2.2.2 A minimum of three threads shall protrude from the main member when screw is installed flush with either of the StoVentro sub-construction component.
  - 9.3.2.3 StoVentro Agraffe Rail to StoVentro T-Profile:
    - 9.3.2.3.1  $\#12 \times \frac{7}{8}$ " stainless steel screw.
    - 9.3.2.3.2 A minimum of three threads shall protrude from the main member when screw is installed flush with either of the StoVentro sub-construction component.

#### 10 Substantiating Data

- 10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:
  - 10.1.1 Wind load resistance testing in accordance with ASTM E330
  - 10.1.2 Wind testing for use in a HVHZ in accordance with TAS 202 and TAS 203
  - 10.1.3 Full scale fire resistance testing and analysis in according to NFPA 285
  - 10.1.4 Surface burning testing in accordance with ASTM E84
  - 10.1.5 Air barrier testing in accordance with ASTM E2178
  - 10.1.6 Water vapor transmission testing in accordance with ASTM E96
  - 10.1.7 Engineering evaluation performed by Jensen Hughes
  - 10.1.8 Impact resistance testing in accordance with BS 6206, BS 8200, BS EN 356, and BS EN 12600
  - 10.1.9 Blast resistance testing in accordance with CPNI Test Standard Explosion Resistance of Curtain Walling, Part 2
- 10.2 Information contained herein may include the result of testing and/or data analysis by sources that are <u>approved agencies</u>, <u>approved sources</u>, and/or an <u>RDP</u>. Accuracy of external test data and resulting analysis is relied upon.
- 10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as <u>being equivalent</u> to the regulatory provision in terms of quality, <u>strength</u>, effectiveness, <u>fire resistance</u>, durability, and safety.





- 10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or <u>duly authenticated reports</u> from <u>approved</u> <u>agencies</u> and/or <u>approved sources</u> provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this <u>duly</u> <u>authenticated report</u>, may be dependent upon published design properties by others.
- 10.5 Testing and Engineering Analysis:
  - 10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.<sup>35</sup>
- 10.6 Where additional condition of use and/or regulatory compliance information is required, please search for StoVentec Glass Rainscreen System on the <u>DrJ Certification website</u>.

#### **11 Findings**

- 11.1 As outlined in **Section 6**, StoVentec Glass Rainscreen System has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.
- 11.2 When used and installed in accordance with this <u>duly authenticated report</u> and the manufacturer installation instructions, StoVentec Glass Rainscreen System shall be approved for the following applications:
  - 11.2.1 Use as an exterior wall covering in accordance with <u>IBC Section 1402</u>, <u>IBC Section 1403</u>, and <u>IBC Section 1404</u>, and <u>IBC Section 1404</u>, for Types I-V construction.
  - 11.2.2 Use in High Velocity Hurricane Zone (HVHZ) in accordance with the <u>FBC-B Section 1620</u>, <u>FBC-B Section 1626</u>, and <u>Miami-Dade County</u>, <u>Florida Department of Regulatory and Economic</u> Resources Product Control Section – Checklist #0285.
  - 11.2.3 Use on buildings of Type I-V construction that are greater than 40 ft in height above grade plane in accordance with <u>IBC Section 1402.5</u>.
  - 11.2.4 Fireblocking is not required pursuant to <u>IBC Section 718.2.6</u>, Exception 3.
- 11.3 Unless exempt by state statute, when StoVentec Glass Rainscreen System is to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an <u>RDP</u>.
- 11.4 Any application specific issues not addressed herein can be engineered by an <u>RDP</u>. Assistance with engineering is available from Sto Corporation.
- 11.5 <u>IBC Section 104.2.3<sup>36</sup> (IRC Section R104.2.2<sup>37</sup> and IFC Section 104.2.3<sup>38</sup> are similar) in pertinent part state:</u>

**104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.

- 11.6 Approved: <sup>39</sup> Building regulations require that the building official shall accept duly authenticated reports.<sup>40</sup>
  - 11.6.1 An <u>approved agency</u> is *"approved"* when it is <u>ANAB ISO/IEC 17065 accredited</u>.
  - 11.6.2 An <u>approved source</u> is *"approved"* when an <u>RDP</u> is properly licensed to transact engineering commerce.
  - 11.6.3 Federal law, <u>Title 18 US Code Section 242</u>, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.





- 11.7 DrJ is a licensed engineering company, employs licensed <u>RDP</u>s and is an <u>ANAB Accredited Product</u> <u>Certification Body</u> – <u>Accreditation #1131</u>.
- 11.8 Through the <u>IAF Multilateral Arrangement</u> (MLA), this <u>duly authenticated report</u> can be used to obtain product approval in any <u>jurisdiction</u> or <u>country</u> because all ANAB ISO/IEC 17065 <u>duly authenticated reports</u> are equivalent.<sup>41</sup>

### 12 Conditions of Use

- 12.1 Material properties shall not fall outside the boundaries defined in **Section 6**.
- 12.2 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.
- 12.3 As listed herein, StoVentec Glass Rainscreen System shall be subject to the following conditions:
  - 12.3.1 Installation shall be in accordance with manufacturer instructions and this report.
  - 12.3.2 Installation of StoVentec Glass Rainscreen System complies with the requirements of <u>FBC Section 1626</u> for use in the High Velocity Hurricane Zone when installed over one of the following assemblies:
    - 12.3.2.1 Exterior walls framed with nominal 2x wood studs or minimum 2 x 6, 18-gauge CFS studs spaced 16" o.c. and sheathed with <sup>5</sup>/<sub>8</sub>" plywood,
    - 12.3.2.2 Exterior concrete walls having a minimum nominal thickness of 8" and constructed in accordance with <u>FBC Chapter 21</u> (High-Velocity Hurricane Zones).
    - 12.3.2.3 Exterior reinforced concrete elements constructed of solid normal weight concrete (no voids), designed in accordance with <u>FBC Chapter 19</u> (High-Velocity Hurricane Zones) and having a minimum of 2" thickness.
  - 12.3.3 The structural wall or underlying support structure/substrate shall be adequate to resist the wind loads shown in **Table 3** and **Table 5**.
  - 12.3.4 The allowable capacity of the connection system used for installation shall be meet or exceed the wind loads shown in **Table 3** and **Table 5**, and shall be capable of supporting the weight of the StoVentec Glass Rainscreen System.
- 12.4 When required by adopted legislation and enforced by the <u>building official</u>, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:
  - 12.4.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an <u>approved source</u>, shall be approved when signed and sealed.
  - 12.4.2 This report and the installation instructions shall be submitted at the time of <u>permit</u> application.
  - 12.4.3 This innovative product has an internal quality control program and a third-party quality assurance program.
  - 12.4.4 At a minimum, this innovative product shall be installed per Section 9.
  - 12.4.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.
  - 12.4.6 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.
  - 12.4.7 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by <u>IBC</u> <u>Section 110.3</u>, <u>IRC Section R109.2</u>, and any other regulatory requirements that may apply.





- 12.5 The approval of this report by the AHJ shall comply with <u>IBC Section 1707.1</u>, where legislation states in part, *"the <u>building official</u> shall make, or cause to be made, the necessary tests and investigations; or the <u>building</u> <u>official</u> shall accept duly authenticated reports from <u>approved agencies</u> in respect to the quality and manner of use of new materials or assemblies as provided for in <u>Section 104.2.3</u>", all of <u>IBC Section 104</u>, and <u>IBC Section 105.3</u>.*
- 12.6 <u>Design loads</u> shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., <u>owner</u> or <u>RDP</u>).
- 12.7 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the <u>owner</u>.

# 13 Identification

- 13.1 The innovative product listed in **Section 1.1** is identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.
- 13.2 Additional technical information can be found at <u>www.stocorp.com</u>.

# 14 Review Schedule

- 14.1 This report is subject to periodic review and revision. For the latest version, visit <u>www.drjcertification.org</u>.
- 14.2 For information on the status of this report, please contact DrJ Certification.





Issue Date: August 28, 2024 Subject to Renewal: October 1, 2026

# FBC Supplement to Report Number 2312-07

### **REPORT HOLDER:** Sto Corporation

#### 1 Evaluation Subject

1.1 StoVentec Glass Rainscreen System

# 2 Purpose and Scope

- 2.1 Purpose
  - 2.1.1 The purpose of this Report Supplement is to show StoVentec Glass Rainscreen System, recognized in Report Number 2312-07, has also been evaluated for compliance with the codes listed below as adopted by the Florida Building Commission.
- 2.2 Applicable Code Editions
  - 2.2.1 FBC-B—20, 23: Florida Building Code Building (FL 47006)
  - 2.2.2 FBC-R—20, 23: Florida Building Code Residential (FL 47006)

# 3 Conclusions

- 3.1 StoVentec Glass Rainscreen System, described in Report Number 2312-07, complies with the FBC-B and FBC-R and is subject to the conditions of use described in this supplement.
- 3.2 Where there are variations between the IBC and IRC and the FBC-B and FBC-R applicable to this report, they are listed here:
  - 3.2.1 FBC-B Section 104 is reserved.
  - 3.2.2 FBC-B Section 110.4 is reserved and replaces IBC Section 110.4.
  - 3.2.3 FBC-B Section 104.6 is reserved and replaces IBC Section 104.4.
  - 3.2.4 FBC-B Section 104.11 replaces IBC Section 104.2.3 and Section 104.2.3.2.
  - 3.2.5 FBC-B Section 105.3 replaces IBC Section 105.3.
  - 3.2.6 FBC-B Section 105.3.1 replaces IBC Section 105.3.1.
  - 3.2.7 FBC-B Section 718.2.6 replaces IBC Section 718.2.6.s
  - 3.2.8 FBC-B Section 110.3 replaces IBC Section 110.3.
  - 3.2.9 FBC-B Section 1403 replaces IBC Section 1402.
  - 3.2.10 FBC-B Section 1403.2 replaces IBC Section 1402.2.
  - 3.2.11 FBC-B Section 1403.3 replaces IBC Section 1402.3.
  - 3.2.12 FBC-B Section 1404 replaces IBC Section 1403.
  - 3.2.13 FBC-B Section 1405 replaces IBC Section 1404.
  - 3.2.14 FBC-B Section 1707.1 replaces IBC Section 1707.1.
  - 3.2.15 FBC-B Section 2306.1 replaces IBC Section 2306.1.
  - 3.2.16 FBC-B Section 2306.3 replaces IBC Section 2306.3.





- 3.2.17 FBC-R Section R104 and Section R109 are reserved.
- 3.2.18 FBC-R Section R301.2.1 replaces IRC Section R301.2.1.
- 3.2.19 FBC-R Section R703.1.1 replaces IRC Section R703.1.1.
- 3.2.20 FBC-R Section R703.1.2 replaces IRC Section R703.1.2.

# 4 Conditions of Use

- 4.1 StoVentec Glass Rainscreen System, described in Report Number 2312-07, must comply with all of the following conditions:
  - 4.1.1 All applicable sections in Report Number 2312-07.
  - 4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.





# Notes

- <sup>1</sup> For more information, visit <u>dricertification.org</u> or call us at 608-310-6748.
- <sup>2</sup> Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of <u>TPI1</u>, the <u>NDS</u>, <u>AISI S202</u>, <u>US</u> professional engineering law, <u>Canadian building code</u>, <u>Canada professional engineering law</u>, <u>Qualtim External Appendix A: Definitions/Commentary</u>, <u>Qualtim External Appendix B:</u> <u>Project/Deliverables</u>, <u>Qualtim External Appendix C: Intellectual Property and Trade Secrets</u>, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.
- <sup>3</sup> https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702
- <sup>4</sup> Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review <u>https://www.justice.gov/atr/mission</u> and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3
- 5 <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests</u>
- 7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-andtests#1707.1;~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B %20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%2 0and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.
- 8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2
- 9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved\_agency
- <sup>10</sup> https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved\_source
- https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of \$5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The <u>federal government</u> and each state have a <u>public records act</u>. To follow DTSA and comply state public records and trade secret legislation requires approval through <u>ANAB ISO/IEC 17065 accredited certification bodies</u> or <u>approved sources</u>. For more information, please review this website: <u>Intellectual Property and Trade Secrets</u>.
- 12 <u>https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineeringboards-in-each-state-archive/</u>
- 13 https://www.cbitest.com/accreditation/
- 14 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code
- <sup>15</sup> <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3</u> AND <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1</u>
- <sup>16</sup> https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1
- https://iaf.nu/en/about-iafmla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20 and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of %20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope
- <sup>18</sup> True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
- <sup>19</sup> <u>https://www.justice.gov/crt/deprivation-rights-under-color-law</u> AND <u>https://www.justice.gov/atr/mission</u>
- <sup>20</sup> Unless otherwise noted, the links referenced herein use un-amended versions of the <u>2024 International Code Council (ICC)</u> 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the <u>IBC 2024</u> and the <u>IRC 2024</u> are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.
- <sup>21</sup> See <u>Adoptions by Publisher</u> for the latest adoption of a non-amended or amended model code by the local jurisdiction. <u>https://up.codes/codes/general</u>
- <sup>22</sup> See <u>Adoptions by Publisher</u> for the latest adoption of a non-amended or amended model code by state. <u>https://up.codes/codes/general</u>
- <sup>23</sup> https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14
- <sup>24</sup> <u>https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280</u>
- <sup>25</sup> All references to the FBC-B and FBC-R are the same as the 2024 IBC and 2024 IRC unless otherwise noted in the Florida Supplement at the end of this report.
- <sup>26</sup> <u>https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled</u>
- 27 2015 IBC Section 1405
- 28 2021 IECC Section C402.5.1.4
- <sup>29</sup> 2021 IECC Section C402.5.1.3
- <sup>30</sup> https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4
- <sup>31</sup> https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-

3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20liv able%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the% 20various%20trades

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- 32 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-
- 3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20 engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur
- <sup>33</sup> Qualification is performed by a legislatively defined <u>Accreditation Body</u>. <u>ANSI National Accreditation Board (ANAB)</u> is the largest independent accreditation body in North America and provides services in more than 75 countries. <u>DrJ</u> is an ANAB accredited <u>product certification body</u>.
- 34 <u>https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH</u>
- See Code of Federal Regulations (CFR) <u>Title 24 Subtitle B Chapter XX Part 3280</u> for definition: <u>https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280</u>
   <u>2021 IBC Section 104.11</u>
- <sup>37</sup> 2021 IRC Section R104.11
- 2021 IRC Section R104.11
- 38 2018: <u>https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9</u> AND 2021: <u>https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.9</u>
- Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (<u>https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4</u>) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.
- <sup>40</sup> <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1</u>
- <sup>41</sup> Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.