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ICC-ES Evaluation Report

ESR-3983

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Reissued 06/2019
This report is subject to renewal 06/2020.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 25 00—WATER-RESISTIVE BARRIERS/WEATHER BARRIERS
SECTION: 07 27 00—AIR BARRIERS

REPORT HOLDER:

MOMENTIVE PERFORMANCE MATERIALS

EVALUATION SUBJECT:

GE ELEMEX 2600 AIR AND WATER RESISTIVE BARRIER



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



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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 25 00—Water-Resistive Barriers/Weather Barriers
Section: 07 27 00—Air Barriers

REPORT HOLDER:

MOMENTIVE PERFORMANCE MATERIALS

EVALUATION SUBJECT:

GE ELEMEX 2600 AIR AND WATER RESISTIVE BARRIER

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
- 2018, 2015, 2012 and 2009 *International Energy Conservation Code*® (IECC)

Property evaluated:

- Physical properties
- Water resistance
- Air Leakage
- Surface burning characteristics

1.2 Evaluation to the following green code(s) and/or standards:

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015 and 2012 *International Green Construction Code*® (IgCC)
- 2014 and 2011 ANSI/ASHRAE/USGBC/IES Standard 189.1-Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

2.0 USES

GE Elemax 2600 Air and Water Barrier is used as an alternative to the water-resistive barrier specified in 2018 IBC Section 1403.2 (2015, 2012 and 2009 IBC Section

1404.2) and IRC Section R703.2 when installed over wood and gypsum-based sheathing.

GE Elemax 2600 Air and Water Resistive Barrier may be used to provide an air barrier material in accordance with IRC Section N1102.4.1 and 2018 and 2015 IECC Sections C402.5 and R402.4, 2012 IECC C402.4.1 and R402.4, and 2009 IECC Sections 402.4.1 and 502.4.

GE Elemax 2600 Air and Water Resistive Barrier installed as water-resistive barriers and air barrier materials are recognized for use on Types I, II, III, IV and V construction. For use as a water-resistive barrier in Types I, II, III and IV construction GE Elemax 2600 must be installed in accordance with Section 4.4 of this report.

3.0 DESCRIPTION

3.1 General:

GE Elemax 2600 Air and Water Resistive Barrier is a silicone based, factory-mixed, liquid-applied, water-resistive barrier that is applied to substrates described in Section 3.2. The product is packed in 5-gallon (18.9 L) pails or 55-gallon (208 L) drums. The products have a shelf life of 18 months from the date of manufacture when stored below 109°F (43°C). Unheated storage in cold temperatures is acceptable. GE Elemax 2600 Air and Water Resistive Barrier has a flame-spread index and smoke-developed index of less than 25 and 450, respectively, when tested in accordance with ASTM E84.

The attributes of the GE Elemax 2600 Air and Water Resistive Barrier have been verified as conforming to the requirements of (i) CALGreen Section 5.407.1 for water-resistive barriers and Section A4.407.5 for air barriers; (ii) 2015 and 2012 IgCC Section 605.1.2.1 for air barriers; (iii) 2014 ASHRAE 189.1 Section 7.3.1.1 and 2011 ASHRAE 189.1 Section 7.4.2.9 for air barriers; (iv) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (v) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (vi) ICC 700-2008 Section 602.9 for water-resistive barriers. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Exterior Sheathing or Substrate:

GE Elemax 2600 Air and Water Resistive Barrier is limited to use with the following sheathings or substrates:

- Glass mat faced gypsum recognized in a current evaluation report as complying with ASTM C1177

- Exposure 1 oriented strand board (OSB) complying with U.S. DOC PS-2, and having a minimum $7/16$ -inch (11.1 mm) thickness
- Exposure 1 plywood complying with U.S. DOC PS1 or PS-2 and having a minimum $7/16$ -inch (11.1 mm) thickness
- Concrete and concrete masonry complying with the applicable code

3.2.1 Joints: Joints of all substrates and sheathings shall be flashed with GE Elemax 5000 and/or GE RF100 reinforcing fabric. Installation of Elemax 5000 liquid flashing and RF100 reinforcing fabric shall be in accordance the manufacturer's recommended installation instructions and as described in Section 4.2.

GE Elemax 5000 is a non-sag 100% silicone sealant for joints, seams, gaps, flashing and for adhering transition materials.

GE RF100 reinforcing fabric is a 100% polyester spun-laced reinforcing fabric used to treat rough openings, penetrations, corners, flashing, transition, changes in plane and joints. GE RF100 reinforcing fabric can be used to span static gaps up to $1/8$ -inch (13 mm) wide. It is available in 100 foot (30.5 m) long rolls in standard widths of 4 inches (102 mm), 6 inches (152 mm) and 12 inches (305 mm). Additional widths are available upon request.

3.3 Air Permeance:

When installed in accordance with Section 4.2 and tested in accordance with ASTM E2178, the Elemax 2600 has an air leakage rate of less than 0.02 L/(sm²) @ 74 Pa [0.004 cfm/ft² @ 0.3 inch w.g. (1.57 psf)].

3.4 Water Vapor Transmission:

The Water Method water vapor transmission (WVT) values as determined in accordance with ASTM E96 (wet cup procedure) are 69.9 g/m² per 24 hours (10.2 perm) for 17 mil dry film thickness layer of Elemax 2600. The Desiccant Method water vapor transmission (WVT) values as determined in accordance with ASTM E96 (dry cup procedure) are 54 g/m² per 24 hours (7.9 perm) for 17 mil dry film thickness layer of Elemax 2600.

4.0 DESIGN AND INSTALLATION

4.1 General:

Installation of GE Elemax 2600 Air and Water Resistive Barrier must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

4.2 Installation:

GE Elemax 2600 shall be applied with a brush, roller, power roller or spraying on the exterior side of undamaged wall substrates at a rate of approximately 80 square feet per gallon, and can be done with a single coat. An application rate of 80 square feet per gallon equates to an approximate 19 mil [0.019 inch (0.48 mm)] wet film thickness and a subsequent 17 mil [0.017 inch (0.43 mm)] dry film thickness.

Curing and tack-free condition of the product varies with temperature and humidity. Under basic conditions [72°F (22°C) and 50 percent relative humidity] the product exhibits a tack-free surface 1-2 hours after installation and full cure overnight.

Before application of Elemax 2600 coating, at joints in the sheathing, apply a $1\frac{1}{2}$ -inch (38 mm) wide by 20 to

40 mil [0.02 inch (0.5 mm) to 0.04 inch (1.0 mm)] thick layer of GE Elemax 5000 liquid flashing centered on the joints. As an alternate to the GE Elemax 5000, apply a 10 mil [0.010 inch (0.25 mm)] thick coat of GE Elemax 2600 over the joint. While the GE Elemax 2600 coat is still wet, set GE RF100 Reinforcing Fabric into the GE Elemax 2600 centered over the joint. Immediately apply a second 10 mil [0.010 inch (0.25 mm)] thick coat of GE Elemax 2600 over the GE RF100 Reinforcing Fabric.

Properly driven screw heads shall be covered with GE Elemax 2600 when uniformly applied at system film thickness. Under or over-driven screw heads must be treated with a troweled application of Elemax 5000 Liquid Flashing or an additional coat of GE Elemax 2600.

4.3 Fire and Heat Characteristics:

GE Elemax 2600 has a Class A (flame-spread index of 25 or less and smoke-developed index of 450 or less) fire classification when tested in accordance with ASTM E84.

GE Elemax 2600 has a peak heat release rate of 52.7 kW/m², a total heat release of 7.6 MJ/m² and an effective heat of combustion of 4.6 MJ/kg when tested in accordance with ASTM E1354.

4.4 Use on Exterior Walls in Types I, II, III and IV Construction:

4.4.1 Walls 40 feet or less above grade:

2018 and 2015 IBC: GE Elemax 2600 can be used in Types I, II, III and IV construction in wall heights less than 40 feet (12.2 m), and walls of any height when it is the only combustible component within the wall assembly in accordance with IBC Section 1403.5, Exception 1 or 2.

2012 IBC: GE Elemax 2600 can be used in Types I, II, III and IV construction for building walls that are less than or equal to 40 feet (12.2 m) in height above grade as indicated in 2012 IBC Section 1403.5.

2009 IBC: GE Elemax 2600 can be used in Types I, II, III and IV construction for any building height permitted by code.

4.4.2 Walls greater than 40 feet in height above grade: When used in exterior walls of Types I, II, III and IV construction that are greater than 40 feet (12.2m) and installed in accordance with this report, the assemblies shown in Table 1 of this report comply with NFPA 285.

5.0 CONDITIONS OF USE

The GE Elemax 2600 Air and Water Barrier described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 Substrates shall be free from bond inhibiting materials such as frost, moisture, oil, grease, debris or dirt.
- 5.3 GE Elemax 2600 shall not be applied when the temperature is below 0°F (-18°C) or above 150°F (66°C).
- 5.4 Application of this product is limited to the substrates listed in Section 3.2.
- 5.5 GE Elemax 2600 Air and Barrier system is recognized for above-grade wall applications. The system shall not be utilized in below-grade applications.

- 5.6 The GE Elemax 2600 Air and Barrier system must not be used for repairing moving cracks, joints or cracks wider than 1/8-inch (3.2 mm).
- 5.7 The system shall not be applied when it is raining or when inclement weather is imminent or likely within 2 hours.
- 5.8 The barriers must be covered with an exterior wall covering complying with the applicable building code or a current evaluation report.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive coatings Used as Water resistive Barriers over Exterior Sheathing (AC212), dated April 2018.
- 6.2 Report containing results of testing in accordance with ASTM E84, ASTM E1354, NFPA 285 and ASTM E2178.

7.0 IDENTIFICATION

- 7.1 Each container of material is identified by the manufacturer's name and address, quantity of material in each package, storage instructions, expiration date, the product name, the production date and batch number, and the evaluation report number (ESR-3983).
- 7.2 The report holder's contact information is the following:

MOMENTIVE PERFORMANCE MATERIALS
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TABLE 1—ASSEMBLIES FOR USE IN TYPES I, II, III AND IV CONSTRUCTION

ASSEMBLY 1⁷	
WALL COMPONENT	MATERIAL
Interior Sheathing ¹	One layer of minimum 5/8-inch thick ASTM C1396 Type X gypsum board
Steel Framing	3 ⁵ / ₈ -inch, minimum 20 gauge galvanized steel studs spaced at 24 inches on center
Water Resistive Barrier and Exterior Sheathing ^{1,9}	GE Elemax 2600 Air and Water Resistive Barrier applied at a nominal rate of 19 wet mils over one layer of 1/2-inch thick Georgia-Pacific DensGlass [®]
Insulation ^{3,8}	4 ¹ / ₂ -inch Rmaxx [®] TSX-8500 rigid Polyisocyanurate foam plastic insulation with aluminum foil facers on both sides
Air Gap	2 inches
Cladding ³	3 ⁵ / ₈ -inch Grade A cored bricks
ASSEMBLY 2⁵	
WALL COMPONENT	MATERIAL
Interior Sheathing ¹	One layer of minimum 5/8-inch thick ASTM C1396 Type X gypsum board
Steel Framing ⁶	4, 6 or 8 inch, minimum 16 gauge steel studs spaced at 16 inches on center
Water Resistive Barrier and Exterior Sheathing ^{1,9}	GE Elemax 2600 Air and Water Resistive Barrier applied at a nominal rate of 19 wet mils over one layer of 5/8-inch thick Georgia-Pacific DensGlass [®] Gold Fireguard exterior sheathing board
Insulation ²	3-inch thick, 4.5 pounds per cubic foot mineral fiber exterior insulation
Air Gap	1 inch
Cladding ⁴	8 mm thick Swisspearl [®] fiber-cement panels with an 8 mm gap between panels

1 inch = 25.4 mm; 1 lb/ft³ = 16.0 kg/m³

¹Sheathing is attached to wall framing with #6 x 1 1/4-inch long flat head screws spaced at 8 inches on center around the perimeter of the board and 12 inches on center within the field. All screw heads to be treated with joint compound. All joints to be treated with paper tape and joint compound. Sheathing shall be oriented perpendicular to the wall framing.

²Rigid insulation will be attached with #10 x 5 1/2-inch long self-drilling screws with a 1 1/4-inch diameter grip-plate plastic washer.

³Brick cladding shall be attached to the wall assembly with 4 1/2-inch long 2-Seal[™] Thermal Concrete Wing Nut Anchors by Hohmann & Barnard, Inc., at every stud location at intervals of 16 inches.

⁴Swisspearl[®] panels are to be attached to 4-inch deep galvanized steel hat channels or Z-Sections with steel rivets with an 18 mm mandrel and 15 mm diameter cap spaced at 24-inches vertically and 16-inches horizontally. Hat channels and Z-Sections shall be attached through the exterior sheathing to each stud with 1/4-inch diameter by 1 1/4-inch long self-drilling screws.

⁵4-inch thick Thermafiber[®] mineral wool (4 pcf density) is to be secured at each floor line with the stud cavity using manufacturer recommended clips.

⁶(Optional) Stud cavity may be filled with un-faced fiberglass blanket insulation.

⁷Johns-Manville MinWool[®] Safing (4 pcf density) is to be friction fitted into stud cavities at all floor lines.

⁸(Optional) After installation is complete, the exterior sheathing shall be coated with GE Elemax 2600 Air and Water Resistive Barrier at a nominal rate of 19 wet mils.

⁹Joints shall be constructed in accordance with Section 3.2.1 of this report.