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ICC-ES Evaluation Report

ESR-2986

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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
SECTION: 07 65 00—FLEXIBLE FLASHING

REPORT HOLDER:

BASF CORPORATION

**3550 SAINT JOHNS BLUFF ROAD SOUTH
JACKSONVILLE, FLORIDA 32224**

EVALUATION SUBJECT:

**SENERSHIELD-R, FINESTOP-RA AND ACROSTOP R AIR AND WATER-RESISTIVE
BARRIERS AND FLEXIBLE FLASHING**



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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
Section: 07 65 00—Flexible Flashing

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EVALUATION SUBJECT:

SEBERSHIELD-R, FINESTOP-RA AND ACROSTOP R AIR AND WATER-RESISTIVE BARRIERS AND FLEXIBLE FLASHING

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2009 *International Building Code*® (IBC)
- 2009 *International Residential Code*® (IRC)
- 2009 *International Energy Conservation Code*® (IECC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]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:

- Physical properties
- Water resistance
- Air Leakage
- Surface burning characteristics
- Fire-resistance-rated construction
- Types I, II, III and IV construction

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)

Attributes verified:

- See Section 3.1

2.0 USES

Senershield-R, Finestop-RA and Acrostop R factory-mixed, liquid-applied, water-resistive barriers are used as alternatives to the water-resistive barrier specified in IBC Section 1404.2 and IRC Section R703.2 in any type of construction. Senershield-R, Finestop-RA or Acrostop R combined with 4-inch or 9-inch (102 mm or 229 mm) Sheathing Fabric (flexible flashing) may be used as an alternative flashing under Section 1405.3 of the IBC and Section R703.8 of the IRC, when installed in accordance with Section 4.3.1 of this report. Use as flashing is limited to Type V construction.

Senershield-R, Finestop-RA and Acrostop R may be used to provide an air barrier material in accordance with IRC Section N1102.4.1 and IECC Sections 402.4.1 and 502.4.3 in any type of construction.

The liquid-applied, water-resistive coatings, when installed at a maximum thickness of 20 mils [0.02 inch (0.5 mm)], may be used in fire-resistance-rated exterior wall assemblies recognized in IBC Table 720.1(2), that specify use of building paper, without changing the assigned hourly rating of the assembly.

Senershield-R, Finestop-RA and Acrostop R installed as water-resistive barriers and air barrier materials are recognized for use on Types I, II, III, IV and Type V construction.

3.0 DESCRIPTION

3.1 General:

Senershield-R, Finestop-RA and Acrostop R are factory-mixed, liquid-applied, water-resistive barriers that are applied over substrates described in Section 3.3. The products are packaged in 5-gallon (19 L) pails which weigh 60 pounds (27.2 kg). The products have a shelf life of two years when stored at temperatures no lower than 40°F (4.4°C). The water vapor transmission value of Senershield-R, Finestop-RA and Acrostop R [in accordance with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38)] is at least 35 grams/m² per 24 hours, making the products equivalent to a Grade D barrier. Senershield-R, Finestop-RA and Acrostop R have an air leakage rate not exceeding 0.004 cfm/ft² at 0.3 inch w.g. (1.57 psf) (0.02 L/s-m² at 75 Pa). Senershield-R, Finestop-RA and Acrostop R have a flame-spread index of

25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84.

The attributes of the 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 Sections 602.1.8, 11.602.1.8 and 12.6.602.1.8; (v) ICC 700-2012 Sections 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 provisions that may be contingent upon meeting 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 Sheathing Fabric:

Sheathing Fabric is a balanced mesh of twisted multi-end glass-fiber strands that is used with Senersshield-R, Finestop-RA and Acrostop R as a treatment for substrate joints and wrapping of rough openings for windows, doors and through-wall penetrations. The fabric is supplied in 4-inch and 9-inch (102 mm and 229 mm) widths and must be stored in a dry location at temperatures no lower than 40°F (4.4°C).

3.3 Exterior Sheathing or Substrate:

3.3.1 Flexible Flashing: Installation of the Flexible Flashing system is limited to use with:

- Glass-mat faced gypsum sheathing complying with ASTM C1177 and having a minimum $\frac{1}{2}$ -inch (12.7 mm) thickness
- Exposure 1 plywood complying with U.S. DOC PS-1 or PS-2; or Exposure 1 oriented strand board (OSB) complying with U.S. DOC PS-2, and having a minimum $\frac{7}{16}$ -inch (11.1 mm) thickness
- Uncoated aluminum
- PVC complying with ASTM D1784
- Concrete and concrete masonry complying with the applicable sections of the applicable codes

3.3.2 Water-resistive Barrier and Air Barrier: Installation of the coating is limited to use with:

- Exterior-grade water-resistant core gypsum sheathing complying with ASTM C79 or ASTM C1396 and having a minimum $\frac{1}{2}$ -inch (12.7 mm) thickness
- Glass-mat faced gypsum sheathing complying with ASTM C1177 and having a minimum $\frac{1}{2}$ -inch (12.7 mm) thickness
- Cement board sheathing complying with ASTM C1325 and having a minimum $\frac{1}{2}$ -inch (12.7 mm) thickness
- Exposure 1 plywood complying with U.S. DOC PS1 or PS-2; or Exposure 1 oriented strand board (OSB) complying with U.S. DOC PS-2, and having a minimum $\frac{7}{16}$ -inch (11.1 mm) thickness
- Concrete and concrete masonry complying with the applicable sections of the applicable codes

4.0 INSTALLATION

4.1 General:

Installation of Senersshield-R, Finestop-RA and Acrostop R 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 Exterior Sheathing or Substrate Preparation:

Surfaces must be dry, clean, sound, and free of releasing agents, paint, or other residue or coatings. Substrate must be flat, and free of fins or planar irregularities greater than $\frac{1}{4}$ inch in 10 feet (6.4 mm in 3 m).

4.3 Coatings Application:

4.3.1 Flexible Flashing: Rough openings must be wrapped with Sheathing Fabric by applying mixed Senersshield-R, Finestop-RA or Acrostop R to all surfaces and immediately embedding 4- or 9-inch (102 mm or 229 mm) Sheathing Fabric in accordance with the manufacturer's published installation instructions. A second coat of Senersshield-R, Finestop-RA or Acrostop R can be applied over the Sheathing Fabric to ensure a continuous, void- and wrinkle-free membrane application. All fasteners must be spotted and sheathing joints, terminations, and inside and outside corners must be pre-coated with Senersshield-R, Finestop-RA or Acrostop R using a spray brush or a 4-inch-wide-by- $\frac{3}{4}$ -inch (101 mm by 20 mm) nap roller. Immediately, Sheathing Fabric must be placed and centered over wet Senersshield-R, Finestop-RA or Acrostop R at all sheathing joints, terminations, and inside and outside corners, as well as over knot holes and check cracks that may exist in plywood or OSB. Sheathing Fabric must be lapped a minimum of $2\frac{1}{2}$ inches (63.5 mm) at intersections. For roller or brush applications, the material must be dry to the touch before application of Senersshield-R, Finestop-RA or Acrostop R to the entire wall surface.

4.3.2 Water-resistive Barrier: A minimum of two 10-mil [0.01 inch (0.2 mm)] wet coats of Senersshield-R, Finestop-RA or Acrostop R is required over OSB, plywood, concrete and concrete masonry. Senersshield-R, Finestop-RA or Acrostop R can be applied to Exposure 1 plywood, Exposure 1 OSB, concrete or concrete masonry substrate with a $\frac{3}{4}$ -inch (20 mm) nap roller or brush to a nominal, uniform wet-film thickness of 10 mils. Prior to application of the second coat, a visual inspection must be done to assure the sheathing surface is blister-free and the coating is free of voids and pinholes. The sheathing and/or coating is repaired, if needed, and then a second coat is applied after the initial coating is sufficiently dry. Senersshield-R, Finestop-RA or Acrostop R may be sprayed, in one wet application, using manufacturer-recommended spray equipment to a 20-mil [0.02 (0.4 mm)] thickness over OSB, plywood, concrete and concrete masonry.

Senersshield-R, Finestop-RA or Acrostop R can be applied to glass-mat faced gypsum sheathing complying with ASTM C1177, cement board sheathing complying with ASTM C1325, exterior grade gypsum sheathing complying with ASTM C79 or ASTM C1396, or uncoated aluminum or PVC complying with ASTM D1784, with a $\frac{3}{4}$ -inch (20 mm) nap roller, spray or brush, to a nominal, uniform wet-film thickness of 10 mils that is free of voids and pinholes.

4.4 Curing and Drying:

The material is allowed to dry for at least two to ten hours before installation of the approved cladding. Curing time varies depending on temperature/humidity and surface conditions. During the curing, the material must be protected from rain and from temperatures below 40°F (4°C) for 24 hours.

4.5 Air Barrier Material:

Installation as an air barrier material must be in accordance with the manufacturer's published installation instructions.

5.0 CONDITIONS OF USE

The Senersshield-R, Finestop-RA and Acrostop R described in this report comply with, or are suitable alternatives 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 Installation must be done by applicators approved by the manufacturer.
- 5.3 Special inspection of the water-resistive barrier coating is required at the jobsite in accordance with IBC Sections 1704.1 and 1704.14.1.
- 5.4 The barriers must be covered with an exterior wall covering complying with the applicable code or a current evaluation report. A single layer of Grade D building paper to serve as a slip sheet is required when the barriers are used behind cement plaster (stucco).
- 5.5 Repairing joints and cracks wider than $\frac{1}{8}$ inch, using Senersshield-R, Finestop-RA or Acrostop R barrier, is outside the scope of this report.
- 5.6 For EIFS applications, fire-resistance-rated construction must comply with Section 4.6 of [ESR-1878](#) (Senersshield-R), Section 4.6 of [ESR-2186](#) (Finestop-RA) or Section 4.6 of [ESR-2188](#) (Acrostop R).

5.7 When used with Sheathing Fabric as flexible flashing, installation is limited to use in buildings of Type V construction.

5.8 The air leakage rate noted in Section 3.1 is for the product used as an air barrier material only. The design and evaluation of an air barrier assembly, with this product as a component, is outside the scope of this 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 November 2012.

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Flexible Flashing Materials (AC148), dated February 2011 (editorially revised February 2014).

6.3 Report containing results of testing in accordance with ASTM E84.

6.4 Report containing results of testing in accordance with ASTM E2178.

7.0 IDENTIFICATION

Each container of material is identified by the manufacturer's name; the product name; the production date and batch number; shelf life; and the evaluation report number (ESR-2986).