

ACCEPTANCE CRITERIA FOR WATER-RESISTIVE COATINGS USED AS WATER-RESISTIVE BARRIERS OVER EXTERIOR SHEATHING

AC212

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PREFACE

Evaluation reports issued by ICC Evaluation Service, LLC (ICC-ES), are based upon performance features of the International family of codes. (Some reports may also reference older code families such as the BOCA National Codes, the Standard Codes, and the Uniform Codes.) Section 104.11 of the *International Building Code*® reads as follows:

The provisions of this code are not intended to prevent the installation of any materials or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

This acceptance criteria has been issued to provide interested parties with guidelines for demonstrating compliance with performance features of the codes referenced in the criteria. The criteria was developed through a transparent process involving public hearings of the ICC-ES Evaluation Committee, and/or on-line postings where public comment was solicited.

New acceptance criteria will only have an “approved” date, which is the date the document was approved by the Evaluation Committee. When existing acceptance criteria are revised, the Evaluation Committee will decide whether the revised document should carry only an “approved” date, or an “approved” date combined with a “compliance” date. The compliance date is the date by which relevant evaluation reports must comply with the requirements of the criteria. See the ICC-ES web site for more information on compliance dates.

If this criteria is a revised edition, a solid vertical line (|) in the margin within the criteria indicates a technical change from the previous edition. A deletion indicator (→) is provided in the margin where wording has been deleted if the deletion involved a technical change.

ICC-ES may consider alternate criteria for report approval, provided the report applicant submits data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. ICC-ES retains the right to refuse to issue or renew any evaluation report, if the applicable product, material, or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause injury or unreasonable damage.

NOTE: The Preface for ICC-ES acceptance criteria was revised in July 2011 to reflect changes in policy.

Acceptance criteria are developed for use solely by ICC-ES for purposes of issuing ICC-ES evaluation reports.

ACCEPTANCE CRITERIA FOR WATER-RESISTIVE COATINGS USED AS WATER-RESISTIVE BARRIERS OVER EXTERIOR SHEATHING

1.0 INTRODUCTION

1.1 Purpose: The purpose of this criteria is to establish requirements for recognition of water-resistive coatings, used as water-resistive barriers over exterior sheathing, in ICC Evaluation Service, LLC (ICC-ES), evaluation reports under the 2009 *International Building Code*® (IBC), the 2009 *International Residential Code*® (IRC), and the 2009 *International Energy Conservation Code*® (IECC). The bases of recognition are IBC Section 104.11, IRC Section R104.11, when used as an alternate to the water-resistive barrier defined in IBC Section 1404.2 and IRC Section R703.2; and IBC Section 1408.4.1.1 and IRC Section R703.9.2.1, when used as a water-resistive coating with EIFS complying with IBC Section 1408.4.1 and IRC Section R703.9.2.

1.2 Scope: This criteria is limited to coatings that are used on exterior walls as alternatives to the water-resistive barriers specified in Sections 1404.2 and 1408.4.1.1 of the IBC, and Sections R703.2 and R703.9.2.1 of the IRC, and optionally as an air barrier material under IECC Sections 402.4.1 and 502.4.3. The coatings are covered with either a code-approved exterior wall covering, or one that is recognized in a current ICC-ES evaluation report. Substrates that can be considered under this criteria are wood-based and gypsum-based sheathings, and cementitious backer units complying with ANSI A118.9, or equivalent.

When the water-resistive coating is intended to be the intervening material between two layers of exterior cementitious coatings, detrimental relative movement of the system shall be considered.

This criteria is applicable to coatings that overlap flashing and accessories.

1.3 Definitions:

1.3.1 Water-resistive Barrier: For the purposes of this criteria, the term “water-resistive barrier” includes within its scope water-resistive barriers under Sections 1404.2 and 1408.4.1.1 of the IBC and Sections R703 and R703.9.2.1 of the IRC.

1.3.2 Air Barrier Material: A material in building construction that is designed and installed to reduce air leakage either into or through an opaque wall.

1.4 Codes and Referenced Standards:

1.4.1 2009 *International Building Code*® (IBC), International Code Council.

1.4.2 2009 *International Residential Code*® (IRC), International Code Council.

1.4.3 2009 *International Energy Conservation Code*® (IECC), International Code Council.

1.4.4 AATCC Test Method 127-1985, Water Resistance: Hydrostatic Pressure Test, American Association of Textile Chemists and Colorists.

1.4.5 ANSI A118.9-1999, Test Method and Specifications for Cementitious Backer Units, American National Standards Institute.

1.4.6 ASTM C 297-94, Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions, ASTM International.

1.4.7 ASTM D 2247-97, Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity, ASTM International.

1.4.8 ASTM E 72-02, Standard Test Methods of Conducting Strength Tests of Panels for Building Construction, ASTM International.

1.4.9 ASTM E 96-00^{e01}, Standard Test Method for Water Vapor Transmission of Materials, ASTM International.

1.4.10 ASTM E 331-00, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference, ASTM International.

1.4.11 ASTM E 1233-97, Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Cyclical Static Air Pressure Differential, ASTM International.

1.4.12 ASTM E 2178-03, Standard Test Method for Air Permeance of Building Materials, ASTM International.

1.4.13 ASTM E 2485-06, Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems, ASTM International.

1.4.14 ASTM E 2570-07, Standard Test Method of Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage, ASTM International.

2.0 BASIC INFORMATION AND REPORTS OF TESTS

2.1 The following information shall be submitted:

2.1.1 Product Description: A complete description of the water-resistive coating material, including base material and the thinning agent, shall be submitted and shall include the following, as applicable:

2.1.1.1 Percent-solids content of the water-resistive coating material.

2.1.1.2 Type and amount of priming material applied to the substrate prior to the application of the coating.

2.1.1.3 Amount of liquid material per shipping container, and density.

2.1.1.4 Statements on product-use limitations, including ultraviolet exposure.

2.1.2 Installation Instructions: Printed installation procedures, available to the installer, shall be submitted, and shall include information as indicated below:

2.1.2.1 Application rate of liquid material applied to the substrate, measured in gallons per square foot (l/m^2), and dry film thickness, shall be specified. Application procedures shall specify substrates. Conditions necessary for proper application, such as ambient temperature, site conditions (such as wet or muddy), and the material temperature, shall be included, as applicable.

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2.1.2.2 Substrate preparation shall address the following:

2.1.2.2.1 Removal of deleterious materials that may affect bond and performance.

2.1.2.2.2 Treatments of voids, cracks, substrate joints and other excessively rough areas.

2.1.2.2.3 Applications of primers and other substrate conditioning materials with the water-resistive coating material.

2.1.2.2.4 Age of substrate and substrate temperature at time of preparation and coating application.

2.1.2.3 Cure time, drying period and other time-related requirements shall be specified.

2.1.2.4 Preparation of materials prior to application, including components, proportions, temperature and humidity conditions, method of mixing and pot life of mixture, shall be specified.

2.1.2.5 Type, location, and installation procedures for all flashing, counterflashing, caulking and other special treatments shall be specified.

2.1.2.6 Illustrative details shall be provided, showing water-resistive coating application, including interface with terminations, openings, penetrations, and other discontinuities, as applicable.

2.1.2.7 If the material is to be evaluated as an air barrier material in addition to a water-resistive barrier, installation instructions shall identify specific installation provisions for air barrier material applications.

2.1.3 Packaging and Identification: A description of the method of packaging and identifying the material shall be submitted. Labeling for field identification shall include the following:

1. Name and address of manufacturer.
2. Product name.
3. Identification of components.
4. Lot or batch number.
5. Quantity of material in packaged mix.
6. Storage instructions and shelf life.
7. Expiration date (when applicable).
8. Evaluation report number.

2.2 Testing Laboratories: Testing laboratories shall comply with Section 2.0 of the ICC-ES Acceptance Criteria for Test Reports (AC85), and Section 4.2 of the ICC-ES Rules of Procedure for Evaluation Reports.

2.3 Test Reports: Test reports shall comply with the AC85.

2.4 Product Sampling: Test specimens shall be sampled in accordance with Sections 3.2, 3.3 and 3.4 of AC85.

3.0 TEST AND PERFORMANCE REQUIREMENTS

3.1 General:

3.1.1 For recognition of water-resistive coatings used as a water-resistive barrier under EIFS complying with Section 1408.4.1 of the IBC or Section R703.9.2 of

the IRC, testing of the water-resistive coating shall comply with the requirements found in ASTM E 2570. Testing shall be conducted on each sheathing substrate for which recognition is sought. For freeze-thaw testing under Method B of ASTM E 2485, minimum water immersion time shall be eight hours.

3.1.2 For recognition of water-resistive coating used as a water-resistive barrier under other than EIFS, as described above, exterior wall covering, testing of the water-resistive barrier must comply with Sections 3.2 through 3.9 of this criteria.

3.2 Report(s) of tensile bond testing as set forth in Section 4.1 of this criteria.

3.3 Report(s) of freeze-thaw testing as set forth in Section 4.2 of this criteria.

3.4 Report(s) of water-resistance testing as set forth in Section 4.3 of this criteria.

3.5 Report(s) of water-vapor transmission testing as set forth in Section 4.4 of this criteria.

3.6 Report(s) of water-penetration testing as set forth in Section 4.5 of this criteria. This requirement applies to exterior wall coverings capable of demonstrating water-penetration resistance in accordance with ASTM E 331 with a minimum 2.86 psf (137 Pa) static air pressure differential on a minimum 4-foot-by-8-foot (1219 mm by 2438 mm) sample.

3.7 Report(s) of structural, racking, and restrained environmental conditioning as set forth in Section 4.6 of this criteria. This requirement limits the products' use beneath exterior wall coverings capable of demonstrating water-penetration resistance in accordance with ASTM E 331 with a minimum 2.86 psf (137 Pa) static air pressure differential on a minimum 4-foot-by-8-foot (1219 mm by 2438 mm) sample.

3.8 Report(s) of structural, racking, restrained environmental conditioning and water-penetration tests as set forth in Section 4.7 of this criteria. This requirement permits use of water-resistive coatings beneath all exterior wall coverings.

3.9 Report(s) of ultraviolet light exposure and water resistance testing as set forth in Section 4.8 of this criteria.

3.10 When the product is to be evaluated as an air barrier material, reports of air permeance testing in accordance with ASTM E 2178 shall be submitted. A minimum of three specimens shall be tested. Three specimens of the water-resistive coating are prepared by applying the coating, at the recommended thickness, to a nonadhesive surface. After curing for a duration specified by the manufacturer, the films are removed from the surface and the average thickness determined from material density, area, and weight. Minimum conditions of acceptance shall be an air permeance less than or equal to 0.2 L / s.m² at 75 Pa (0.004 cfm/ft² at 0.3 inch w.g. (1.57 psf)) for each specimen.

4.0 TEST METHODS

4.1 Tensile Bond Testing:

4.1.1 Testing shall comply with ASTM C 297. Specimens shall be representative of those used in actual construction.

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4.1.1.1 For each sheathing substrate for which recognition is sought, five specimens are prepared by applying the water-resistive coating to the sheathing substrate. The purpose of this test is to determine the adhesive performance of the coating when applied to a substrate. If joint treatment material is the same material as is used on the substrate surface, only testing set forth in Section 4.1.1.2 of this criteria is required.

4.1.1.2 For each sheathing substrate for which recognition is sought, five specimens, with joints, are prepared by applying the water-resistive coating and the joint treatment material to the sheathing substrate. The purpose of this test is to determine the adhesive performance of the coating and joint treatment when applied to a substrate.

4.1.1.3 For each flashing (including weep screed) material for which recognition is sought, five specimens are prepared by applying the water-resistive coating, and the flashing treatment, to the flashing material. The purpose of this test is to determine the adhesive performance of the coating and flashing treatment when applied to flashing.

4.1.2 Conditions of Acceptance: The flatwise tensile strength of each specimen shall be a minimum of 15 psi (105 kPa).

4.2 Freeze-thaw Tests:

4.2.1 For each sheathing substrate for which recognition is sought, five 6-inch-square (23 226 mm²) specimens are tested. Sheathing specimens shall consist of two sheathing sections assembled with a $\frac{1}{8}$ -inch-wide (3.2 mm) joint. The joint is treated as it would be in the field and the water-resistive coating is applied to the substrate surface in accordance with the manufacturer's recommended application instructions. The backs and sides of the specimens shall be sealed with an impervious material that need not be the coating. Specimens shall be representative of those used in actual construction.

4.2.2 Specimens are subjected to 10 freeze-thaw cycles. Each cycle consists of air-drying at a temperature of 120°F (49°C) for a minimum of eight hours, followed by total immersion in water at 70°F to 80°F (21.1°C to 26.7°C) for eight hours, and exposure to a temperature of -20°F (-28.9°C) for 16 hours.

4.2.3 Conditions of Acceptance: Failure is defined as surface changes, as viewed by minimum 5× magnification, such as cracking, checking, crazing, erosion or other characteristics, that may affect performance as a water-resistive barrier. There shall be no delamination, or indications of delamination, between components.

4.3 Water-resistance Testing:

4.3.1 For each sheathing substrate for which recognition is sought, three specimens, a minimum of 4 inches by 6 inches (102 mm by 152 mm) in size, and containing a $\frac{1}{4}$ -inch-wide (6.4 mm) joint, are tested. Sheathing specimens shall consist of two sheathing sections assembled with a $\frac{1}{4}$ -inch-wide (6.4 mm) joint. The joint is treated as described in Section 2.1.2.2.2 of this criteria, and the water-resistive coating is applied to the substrate surface in accordance with the manufacturer's recommended application instructions. The backs and

sides of the specimens shall be sealed with the coating or other impervious material. Specimens shall be representative of those used in actual construction. The evaluation report shall include details for support of joints larger than those tested.

4.3.2 Testing shall be in accordance with ASTM D 2247. Periodic inspections shall be conducted. Testing may be concluded after 14 days, or after deleterious effects of exposure to water are observed.

4.3.3 Conditions of Acceptance: There shall be no deleterious effects from 14 days of exposure to water, such as cracking, checking, crazing, erosion or other characteristics, that may affect performance as a water-resistive barrier.

4.4 Water-vapor Transmission Testing:

4.4.1 Three specimens of the water-resistive coating are prepared by applying the coating, at the recommended thickness, to a nonadhesive surface. After curing for a duration specified by the manufacturer, the films are removed from the surface; the average thickness is determined from material density, area, and weight. The films are used to set up three wet cups in accordance with ASTM E 96, Water Method. Specimens are conditioned at 75°F ± 5°F (24°C ± 3°C) and 50 percent relative humidity for 40 hours before testing. Each cup is placed in a room with controlled conditions of 75°F ± 5°F (24°C ± 3°C) and 50 percent relative humidity. Reduction in weight is recorded daily. Water vapor transmission and permeance are calculated in accordance with Section 13 of ASTM E 96, and reported in grams per square meter per 24 hours and perms, respectively.

If the coating is applied such that a lap or seam occurs in the installed materials, an additional three specimens shall be tested with the lap or seam, applied in accordance with the manufacturer's recommended installation instructions.

4.4.2 Conditions of Acceptance: Water vapor transmission shall satisfy one of the grade requirements in Table 14-1-A of UBC Standard 14-1 or Table 1 of the ICC-ES Acceptance Criteria for Weather-resistive Barriers (AC38).

4.5 Water-Penetration Testing: Three samples are prepared by applying the water-resistive barrier coating to the substrate. The substrate shall be attached to the supporting framework as required by the substrate manufacturer. The test samples shall be a minimum of 4 feet by 8 feet (1219 mm by 2438 mm) in size, and shall include a minimum of two vertical joints and one horizontal joint within the sheathing substrate. Joints within the substrates shall be a minimum of $\frac{1}{8}$ inch (3.2 mm) wide.

Each sample shall be tested in accordance with ASTM E 331. A minimum 2.86 psf (137 Pa) air-pressure differential shall be maintained, across the test specimen, for 15 minutes.

4.5.1 Conditions of Acceptance: There shall be no visible water penetration at sheathing joints, as viewed from the back of the panel.

4.6 Structural, Racking and Restrained Environmental Conditioning Tests: (Limits product use to wall coverings demonstrating water-penetration

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resistance in accordance with ASTM E 331 with a minimum 2.86 psf (137 Pa) static air pressure differential)

4.6.1 Transverse Load (Structural): One specimen is prepared by applying the water-resistive coating to each applicable sheathing substrate. The substrate shall be attached to either steel or wood framing members (size of wood or size and gage of steel shall be specified).

The test specimen shall be a minimum of 8 feet by 8 feet (2438 mm by 2438 mm) in size, and substrates shall include a minimum of two vertical joints and one horizontal joint within the sheathing substrate. Joints within the substrate shall be a minimum of $\frac{1}{8}$ inch (3.2 mm) wide. If flashing is to be recognized, it shall be included in the specimen. The water-resistive coating is applied to the substrate surface, including joints, in accordance with the coating manufacturer's recommended application instructions. The specimen shall be tested in accordance with ASTM E 1233, Procedure A, at a specified deflection (specified by proponent) in accordance with Table 1604.3 of the IBC. The specimen shall be cycled for a minimum of 10 positive load cycles.

4.6.1.1 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing. If there is cracking, the racking test shall not go forward.

4.6.2 Racking: The intent of the racking procedure is to subject the water-resistive barrier (coating) to racking stress. Test setup, measurements and application of load shall comply with ASTM E 72.

4.6.2.1 Test shall be conducted on the same specimen used under Section 4.6.1 of this criteria. Application of load shall be in increments as described in the ASTM E 72 test method with or without hold-downs. Load shall be applied until a $\frac{1}{2}$ -inch (12.7 mm) net deflection without hold-downs or $\frac{1}{8}$ -inch (3.2 mm) net deflection with hold-downs is achieved. As an alternate, load shall be applied until the shear design value of the sheathing is achieved, except net deflection shall not exceed $\frac{1}{2}$ inch (12.7 mm) without hold-downs or $\frac{1}{8}$ inch (3.2 mm) with hold-downs. Throughout the test, the coated surface of the wall shall be inspected for signs of cracking or tearing of the water-resistive coating within the field of the panel, and at substrate joints, and at the interface of the flashing.

4.6.2.2 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing.

4.6.3 Restrained Environmental Conditioning: The intent of this test is to evaluate the cracking performance of the water-resistive coating after exposure to cycles of wetting and drying and change in temperature when the coating is applied to sheathing in a manner representative of in-service conditions.

4.6.3.1 The test shall be conducted on the same specimen used under Sections 4.6.1 and 4.6.2 of this criteria. There shall be a water spray apparatus capable of uniformly wetting the entire test surface, and a radiant

heater capable of providing a uniform radiant heat of $120^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($49^{\circ}\text{C} \pm 2.8^{\circ}\text{C}$) as measured on a 1 mm thick aluminum plate painted mat black and affixed to the test surface at a minimum of four locations, symmetrically distributed. Temperature shall be measured with a covered thermocouple attached to the surface of the black plate. The top edge of the water-resistive coating shall be flashed and the back side of the assembly protected from moisture. Periods of exposure to ambient conditions not exceeding 48 hours are permitted during the tests, to accommodate laboratory operations.

4.6.3.2 The entire surface is subjected to five cycles of the following uniform exposure conditions:

1. Water spray—24 hours
2. Radiant heat—24 hours

4.6.3.3 Throughout the test, the wall surface is inspected for signs of cracking of the coating within the field of the panel and at the substrate joints.

4.6.3.4 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing.

4.7 Structural, Racking, Restrained Environmental Conditioning, and Water Penetration Testing:

4.7.1 Transverse Load (Structural): One specimen is prepared by applying the water-resistive coating to each applicable sheathing substrate. The substrate shall be attached to either steel or wood framing members (size of wood or size and gage of steel shall be specified). The test specimen shall be a minimum of 8 feet by 8 feet (2438 mm by 2438 mm) in size, and substrates shall include a minimum of two vertical joints and one horizontal joint within the sheathing substrate. Joints within the substrate shall be a minimum of $\frac{1}{8}$ inch (3.2 mm) wide. If flashing is to be recognized, it shall be included in the specimen. The water-resistive coating is applied to the substrate surface, including joints, in accordance with the coating manufacturer's recommended application instructions. The specimen shall be tested in accordance with ASTM E 1233, Procedure A, at a specified deflection (specified by proponent) in accordance with Table 1604.3 of the IBC. The specimen shall be cycled for a minimum of 10 positive load cycles.

4.7.1.1 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing. If there is cracking, the racking test protocol shall not go forward.

4.7.2 Racking: The intent of the racking procedure is to subject the water-resistive barrier coating to racking stress. Test setup, measurements and application of load shall comply with ASTM E 72.

4.7.2.1 Test shall be conducted on the same specimen used under Section 4.7.1 of this criteria. Application of load shall be in increments as described in the ASTM E 72 test method with or without hold-downs. Load shall be applied until a $\frac{1}{2}$ -inch (12.7 mm) net deflection without hold-downs or $\frac{1}{8}$ -inch (3.2 mm) net

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deflection with hold-downs is achieved. As an alternate, load shall be applied until the shear design value of the sheathing is achieved, except net deflection shall not exceed $\frac{1}{2}$ inch (12.7 mm) without hold-downs or $\frac{1}{8}$ inch (3.2 mm) with hold-downs. Throughout the test, the coated surface of the wall shall be inspected for signs of cracking or tearing of the water-resistive coating within the field of the panel, and at substrate joints, and at the interface of the flashing.

4.7.2.2 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing. If there is cracking, the restrained environmental test protocol shall not go forward.

4.7.3 Restrained Environmental Cycling Test: The intent of this test is to evaluate the cracking performance of the water-resistive coating after exposure to cycles of wetting and drying and changes in temperature, when the coating is applied to sheathing in a manner representative of in-service conditions.

4.7.3.1 Test shall be conducted on the same specimen used under Sections 4.7.1 and 4.7.2 of this criteria. There shall be a water spray apparatus capable of uniformly wetting the entire test surface, and a radiant heater capable of providing a uniform radiant heat of $120^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($49^{\circ}\text{C} \pm 2.8^{\circ}\text{C}$) as measured on a 1 mm thick aluminum plate painted mat black and affixed to the test surface at a minimum of four locations, symmetrically distributed. Temperature shall be measured with a covered thermocouple attached to the surface of the black plate. The top edge of the water-resistive coating shall be flashed and the back side of the assembly protected from moisture. Periods of exposure to ambient conditions not exceeding 48 hours are permitted during the tests, to accommodate laboratory operations.

4.7.3.2 The entire exterior surface is subjected to five cycles of the following uniform exposure conditions:

1. Water spray—24 hours
2. Radiant heat—24 hours

4.7.3.3 Throughout the test, the wall surface is inspected for signs of cracking of the coating within the field of the panel and at the substrate joints.

4.7.3.4 Conditions of Acceptance: There shall be no cracking of the water-resistive coating as determined by visual examination within the field of the panel, at substrate joints and at the interface of the flashing.

4.7.4 Water Penetration Testing:

4.7.4.1 Test shall be conducted on the same specimen used under Sections 4.7.1, 4.7.2, and 4.7.3. The sample shall be tested in accordance with ASTM E 331. A minimum 2.86 psf (137 Pa) air pressure differential shall be maintained across the test specimen for 15 minutes.

4.7.4.2 Conditions of Acceptance: There shall be no visible water penetration at sheathing joints, as viewed from the back of the panel.

4.8 Weathering Test: Five specimens are prepared in accordance with Section 4.3.1, except the sides only shall

be sealed with an impervious material that need not be the coating. These samples shall be exposed to light from ultraviolet light, followed by accelerated aging in accordance with Sections 4.8.1 and 4.8.2 of this criteria, respectively. Following exposure, the specimens shall be tested in accordance with Section 4.8.3 of this criteria.

4.8.1 Ultraviolet Light Exposure: The samples shall be exposed to light from ultraviolet sun lamps for 210 hours (10 hours per day for 21 days) in an enclosure. Ultraviolet light exposure must be directed on the entire sample surfaces that will be exposed to sunlight in normal application. Lamps and enclosure shall be adjusted so the specimen temperature is between 135°F and 140°F (57°C and 60°C). Sunlamp bulbs shall be General Electric Type H275 RUV (275 W) or equivalent bulbs, providing UV characteristics of $5.0 \text{ W/m}^2/\text{nm}$ irradiance at a wavelength of 315 to 400 nm at 1 meter. Bulbs shall be located 2 feet (610 mm) above samples.

4.8.2 Accelerated Aging: The samples shall be subjected to 25 cycles of drying and soaking as follows:

1. Oven drying at 120°F (49°C) for three hours, with all surfaces exposed.
2. The coating surface shall be immersed in room temperature water for three hours.
3. After removal from the water, specimens are blotted dry, then air-dried for 18 hours at a $75^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($23.8^{\circ}\text{C} \pm 2.8^{\circ}\text{C}$) room temperature, with all surfaces exposed.

4.8.3 Hydrostatic Pressure Test: The samples shall be tested in accordance with AATCC Test Method 127-1985, except that the specimens shall be held at a hydrostatic head of 550 millimeters for a period of 5 hours.

4.8.4 Conditions of Acceptance: There shall be no cracking of the coating, or bond failure between the coating and the substrate. There shall be no water penetration on the plane of the exterior facing side of the substrate.

5.0 QUALITY CONTROL

5.1 Water-resistive coatings shall be manufactured under a quality control program documented in accordance with the ICC-ES Acceptance Criteria for Quality Documentation (AC10). The program shall include, but not be limited to, verification of coating properties described in Section 2.1 of this criteria.

5.2 Follow-up inspections by an inspection agency are not required under this criteria.

5.3 Field Inspection and Reporting:

5.3.1 Installation shall be by a contractor recognized by the evaluation report holder as being trained to perform such installations. A list of the names and addresses of recognized contractors shall be maintained by the evaluation report holder, and shall be made available to the building official or ICC-ES upon request.

5.3.2 For recognition under the IBC of water-resistive coatings used in EIFS applications, special inspections are required at the jobsite in accordance with IBC Section 1704.14.1. For other applications, special inspections are not required at the jobsite if installation is done by an installer or contractor trained by the

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manufacturer, and a certificate of installation is presented to the code official at the completion of each project; otherwise, special inspections are required at the jobsite in accordance with IBC Section 1704.15. Duties of the inspector include verifying field preparation of materials, expiration dates, installation of components, curing of components, installation of joints and sealants, applied dry-film thickness and interface of coating material with flashings.

6.0 EVALUATION REPORT RECOGNITION

The evaluation report shall include the following information:

1. Product description, installation instructions, and packaging and identification information, based on requirements in Section 2.1 of this criteria.
2. Permitted substrates qualified by the tests described in Section 4.0 of this criteria.
3. Water vapor transmission values, described in Section 4.4.2 of this criteria.
4. Special inspection based on Section 5.3.2 of this criteria. ■