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ICC-ES Evaluation Report

ESR-3310

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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

**889 VALLEY PARK DRIVE
SHAKOPEE, MINNESOTA 55379**

EVALUATION SUBJECT:

**MASTERSEAL® AWB 660 I VAPOR RETARDER, AIR AND WATER-RESISTIVE BARRIER
AND FLEXIBLE FLASHING**



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■ 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

REPORT HOLDER:

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2.0 USES

MasterSeal® AWB 660 I coating is used as an alternative to the water-resistive barrier specified in IBC Section 1404.2 and IRC Section R703.2.

MasterSeal® AWB 660 I combined with MasterSeal® AWB 975 FIB may be used as a self-adhering flexible flashing under Section 1405.4 of the IBC and Section R703.8 of the IRC, when installed in accordance with Section 4.4.1. Use as a self-adhering flexible flashing material is recognized for Type V construction under the IBC and construction under the IRC.

MasterSeal® AWB 660 I may be used as an air barrier material under IRC Section N1102.4.1 and IECC Sections 402.4 and 502.4.

When installed at a maximum thickness of 26 wet mils [0.026 inch (0.66 mm)], MasterSeal® AWB 660 I 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.

MasterSeal® AWB 660 I installed as a water-resistive barrier or an air barrier material, is recognized for use on Types I, II, III, IV and Type V construction.

EVALUATION SUBJECT:

MASTERSEAL® AWB 660 I VAPOR RETARDER, AIR AND WATER-RESISTIVE BARRIER AND FLEXIBLE FLASHING

3.0 DESCRIPTION

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
- Surface-burning characteristics
- Air permeability
- Water-resistive barrier
- Water vapor transmission
- Fire-resistance-rated 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

3.1 General:

MasterSeal® AWB 660 I coating is a factory-mixed, liquid-applied air and water-resistive barrier that can be applied over substrates described in Section 4.2. The coating is available in 5-gallon (19L) pails, weighing 60 pounds (27.2 kg). The product has a shelf life of two years when stored at temperatures above 40°F (4.5°C). At a minimum thickness of 26 wet mils [0.026 inch (0.66 mm)], the membrane has a vapor permeance of less than 0.1 perm [5.7×10^{-12} kg/(Pa·s·m²)], when tested in accordance with the ASTM E96, and qualifies as a Class I vapor retarder. MasterSeal® AWB 660 I has 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). The coating, at a maximum thickness of 0.04 inch (1.0 mm) has 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 Enershield™-I coating have been verified as conforming to the requirements of (i) 2CALGreen 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 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 MasterSeal® AWB 975 FIB :

MasterSeal® AWB 975 FIB is a balanced mesh of twisted multi-end glass-fiber that is used with MasterSeal® AWB 660 I 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 or 9-inch-widths (102 mm and 229 mm) and must be stored in a dry location at temperatures above 40°F (4.5°C).

4.0 INSTALLATION

4.1 General:

Installation of MasterSeal® AWB 660 I must comply with this report, the manufacturer's published installation instructions and the applicable code. The manufacturer's published installation instructions must be available at the job site at all times during installation.

4.2 Substrate:

4.2.1 Use as Flexible Flashing: When used as a flashing material, installation of the MasterSeal® AWB 660 I is limited to the following substrates:

- Glass-mat faced gypsum sheathing complying with ASTM C1177 and having a minimum $\frac{1}{2}$ -inch thickness (13 mm);
- 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, having a minimum $\frac{7}{16}$ -inch (11 mm) thickness;
- Uncoated aluminum;
- Polyvinyl chloride (PVC) complying with ASTM D1784; and
- Concrete and concrete masonry complying with the applicable code.

4.2.2 Use as Water-resistive Barrier and Air Barrier: When used as a water-resistive barrier and air barrier, installation of the MasterSeal® AWB 660 I is limited to the following substrates:

- Exterior-grade water-resistant core gypsum sheathing complying with ASTM C79 or ASTM C1396 and having a minimum $\frac{1}{2}$ -inch (13 mm) thickness;
- Glass-mat faced gypsum sheathing complying with ASTM C1177 and having a minimum $\frac{1}{2}$ -inch thickness (13 mm);
- Cement board sheathing complying with ASTM C1325 and having a minimum $\frac{1}{2}$ -inch (13 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, having a minimum $\frac{7}{16}$ -inch (11 mm) thickness; and

- Concrete and concrete masonry complying with the applicable code.

4.3 Substrate Preparation:

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

4.4 Coating Application:

4.4.1 Flexible Flashing: Rough openings must be wrapped with MasterSeal® AWB 975 FIB by applying pre-mixed MasterSeal® AWB 660 I coating to all surfaces and immediately embedding 4-inch- or 9-inch-width (102 mm and 228 mm) MasterSeal® AWB 975 FIB in accordance with the manufacturer's published installation instructions. A second coat of MasterSeal® AWB 660 I must be applied over the MasterSeal® AWB 975 FIB to ensure a continuous, void- and wrinkle-free membrane. All fasteners must be spotted and sheathing joints, termination, and inside and outside corners must be pre-coated with MasterSeal® AWB 660 I using spray, brush or a 4-inch-wide-by- $\frac{3}{4}$ -inch (102 mm by 19 mm) nap roller. MasterSeal® AWB 975 FIB must be placed immediately and centered over wet MasterSeal® AWB 660 I coating at all sheathing joints, terminations and inside and outside corner, as well as over knot holes and cracks that may exist in plywood or OSB. MasterSeal® AWB 975 FIB 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 touch before application of MasterSeal® AWB 660 I membrane to the surface.

4.4.2 Water-resistive Barrier: A minimum of two coatings of MasterSeal® AWB 660 I must be applied at 13 wet mils [0.013 inch (0.33 mm)] per coat over any substrates in accordance with BASF Corporation's published product bulletin for different substrates. The coating may be applied with a $\frac{3}{4}$ -inch (19 mm) nap roller or brush. Prior to application of the second 13-mil [0.013 inch (0.33 mm)] coat of MasterSeal® AWB 660 I, a visual inspection must be done to assure the sheathing surface is blister-free and the coating is free of voids or pinholes. The sheathing and/or coating must be repaired, if needed, and then a second coat of MasterSeal® AWB 660 I must be applied after the initial coating is dry to touch or dried for a minimum of 2 hours. The minimum drying time may have to be increased in accordance with the manufacturer's recommendations. MasterSeal® AWB 660 I may be sprayed, using the manufacturer's recommended spray equipment, in one wet application, to a minimum 26-wet-mil [0.026-inch (0.66 mm)] thickness over all substrates.

4.5 Curing and Drying:

The MasterSeal® AWB 660 I coating must be allowed to dry for at least two to ten hours before installation of the approved exterior wall finish or covering. Drying time varies depending on temperature/humidity and surface conditions. After application, surfaces must be protected from rain and from temperatures below 40°F (4.5°C) for a minimum of 24 hours. Once the coating is dry, it can be exposed to lower temperatures or rain.

4.6 Air Barrier:

When used as an air barrier material, the MasterSeal® AWB 660 I coating must be installed in accordance with

the BASF Corporation's published installation instructions and this report.

5.0 CONDITIONS OF USE

The MasterSeal® AWB 660 I vapor retarder, air and water-resistive barrier and flexible flashing 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 by applicators approved by BASF Corporation.
- 5.3 Special inspection of the water-resistive barrier coating is required at the jobsite in accordance with the Section 1704.14.1 of the IBC.
- 5.4 The MasterSeal® AWB 660 I must be covered with an exterior wall finish or covering complying with the applicable code or a current evaluation report. A slip sheet consisting of a single layer of Grade D building paper or other acceptable material is required when the coating is used behind cement plaster (stucco).

- 5.5 Use of the MasterSeal® AWB 660 I to repair joints and cracks wider than $\frac{1}{8}$ inch (3.2 mm) is outside the scope of this report.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with 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 ICC-ES Acceptance Criteria for Flexible Flashing Materials (AC148), dated February 2011 (editorially revised February 2014).
- 6.3 Report of testing in accordance with ASTM E84.
- 6.4 Report of testing in accordance with ASTM E2178.

7.0 IDENTIFICATION

Each container of MasterSeal® AWB 660 I coating and package of MasterSeal® AWB 975 FIB is identified by the manufacturer's name (BASF Corporation); the product name (MasterSeal® AWB 660 I); the production date, batch number; shelf life and the ICC-ES evaluation report number (ESR-3310).

ICC-ES Evaluation Report

ESR-3310 FBC Supplement

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that MasterSeal® AWB 660 I vapor retarder, air and water-resistive barrier and flexible flashing, recognized in ICC-ES master evaluation report ESR-3310, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2010 *Florida Building Code—Building*
- 2010 *Florida Building Code—Residential*

2.0 CONCLUSIONS

MasterSeal®, as described in Sections 2.0 through 7.0 of the master evaluation report ESR-3310, complies with the 2010 *Florida Building Code—Building* and the 2010 *Florida Building Code—Residential*, provided the design and installation are in accordance with the *International Building Code*® (IBC) provisions noted in the master report.

Use of the MasterSeal® AWB 660 I for compliance with the High-Velocity Hurricane Zone provisions of the 2010 *Florida Building Code* has not been evaluated, and is outside the scope of this evaluation report.

For products falling under Florida Rule 9N-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report, reissued July 2017.