

# MasterSeal® AWB 660 I

Air/water-resistive barrier membrane Class 1 Vapor retarder  
FORMERLY ENERSHIELD® I

## PACKAGING

MASTERSEAL® AWB 660 I

- 5-gallon pail (18.9 L) pail

## ACCESSORIES

MasterSeal® AWB 971 FIB:

- 4": 4" x 180 ft (101.5 mm x 54.8 m) roll
- 6": 6" x 180 ft (152.4 mm x 54.8 m) roll
- 9": 9" x 180 ft (228.5 mm x 54.8 m) roll
- 56 MasterSeal® AWB 975 FIB pieces per dispenser box

MasterSeal® AWB 970 FIB 4: 4" x 100'  
(10.2 cm x 30.5 m) rolls - 9 rolls per carton

MasterSeal® AWB 970 FIB 9: 9" x 100'  
(22.9 cm x 30.5 m) rolls - 4 per carton

MasterSeal® AWB 950 P 19 liter (5 gallon)  
pails, 3.8 liter (1 gallon) bottles with  
4 bottles per carton

MasterSeal® AWB 960 AC 0.95L (1 quart)  
plastic bottles with 8 bottles per carton

MasterSeal® AWB 900 20 oz. propak with  
20 propaks per carton

## SHELF LIFE

MasterSeal® AWB 660 I has 2 years  
shelf life when properly stored

## STORAGE

Store in unopened containers in clean,  
dry place protected liquid system  
components from freezing. Store at no less  
than 4 °C (40 °F) and below 49 °C (120 °F).  
Protect from extreme heat and direct  
sunlight. Do not stack pallets.

## VOC CONTENT

21 g/l, or 0.17 lbs/gal less water and  
exempt solvents per ASTM D2369  
(based in part on EPA method 24).

## SOLIDS

74%

## COLOR

Reddish Brown

## DESCRIPTION

MasterSeal® AWB 660 I is a one-component fluid-applied air/water-resistive barrier that can also function as a Class I vapor retarder. It is based on Silica Fortified Rubber™ chemistry. This water-resistant, resilient membrane may be spray-, roller-, or brush- applied directly to approved above grade wall substrates. It provides excellent secondary moisture protection behind most wall claddings including brick, siding, metal panels, EIFS and stucco. A slipsheet is required for stucco claddings.

## APPLICATION/APPROVED SUBSTRATE

For use over the following exterior wall substrates:

Poured concrete/unit masonry, poured concrete/unit masonry treated with MasterSeal® AWB 600 FL, ASTM C1177 type sheathings, including DensGlass™ or DensElement exterior sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, PermaBase™ cement-board by National Gypsum and other cement-boards (ASTM C1325 Type A Exterior), untreated Exposure I or exterior plywood sheathing (grade C-D or better), untreated Exposure I OSB, gypsum sheathing (ASTM C79/ASTM C1396), Fire resistive sheathing such as MagTec, LP FlameBlock

**Do not use MasterSeal® AWB 660 I for below-grade applications or on surfaces subject to water immersion**

## COVERAGE

Substrate

**ASTM C1177 Type Sheathing**

290 ft<sup>2</sup> (27 m<sup>2</sup>) per pail

**Cement Board**

290 ft<sup>2</sup> (27 m<sup>2</sup>) per pail

## Plywood\*

265 ft<sup>2</sup> (24 m<sup>2</sup>) per pail

**Oriented Strand Board (OSB)\***

265 ft<sup>2</sup> (24 m<sup>2</sup>) per pail

**Concrete Masonry Units (CMU)\***

230 ft<sup>2</sup> (21 m<sup>2</sup>) per pail

**Poured Concrete\***

290 ft<sup>2</sup> (27 m<sup>2</sup>) per pail

**Concrete / Masonry with MasterSeal®**

**AWB 600 FL Block Filler**

290 ft<sup>2</sup> (27 m<sup>2</sup>) per pail

Embed Sheathing Fabric

4" Sheathing Fabric: 630 ft (192 m) per pail

6" Sheathing Fabric: 420 ft (128 m) per pail

9" Sheathing Fabric: 280 ft (85 m) per pail

\*Roll or spray / backroll for optimum coverage rate. Other application methods may provide less coverage. Actual results may vary depending on surface porosity, roughness, moisture uptake or other factors.

Note:

MasterSeal® AWB 971 FIB saturated with MasterSeal® AWB 660 I, when applied per manufacturer instructions, self gauges to a 30-40 mil thickness.

**MasterSeal® AWB 660 I complies with the air barrier requirements of the Massachusetts State Energy Code**

FEATURES	BENEFITS
ICC-ESR 3310 evaluation report	Confirms compliance with IBC, IRC, and IECC requirements
ABAA evaluated	Approved for projects requiring ABAA specifications and quality assurance
<1% of allowable air leakage per ASTM E2357 Air Leakage of Building assemblies test	Easily meets air tightness requirements defined by ASHRAE 189.1, ASHRAE 90.1 and ABAA
Meets ASTM D1970 nail sealability requirements with and without sheathing fabric	Self sealing performance
One component, low-VOC formulation	Easy to apply, meets VOC requirements in all 50 states
Nonflammable as applied	Workplace safety
Mineral oil and plasticizer free	Will not dry out or crack due to loss of oil / plasticizer over time
Water based	Cleans up with water; solvents and citrus based cleaners not required
Tough, abrasion resistant	Rugged membrane resists damage after installation
Approved for use with BASF EIFS and stucco systems	Full system warranty, seamless membrane for buildings with multiple claddings
Low temperature performance with MasterSeal® AWB 960 AC	Extends minimum application temperature to -4 °C (25 °F)
180 day outdoor exposure rating	Flexible construction scheduling

**TEST DATA**

PROPERTY	RESULTS	TEST METHOD
<b>Air Leakage of Air Barrier Assemblies</b>	0.0007 l/s.m <sup>2</sup> (0.0001 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) positive/post conditioning 0.0014 l/s.m <sup>2</sup> (0.0003 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) negative/post conditioning	ASTM E 2357
<b>Air Permeance of Building Materials</b>	0.0049 l/s.m <sup>2</sup> @ 75 Pa (0.00098 cfm/ft <sup>2</sup> @ 1.57 psf) (.00098 cfm/ft(2) @ 1.57 psf	ASTM E 2178
<b>Rate of Air Leakage</b>	0.0185 l/s.m <sup>2</sup> @ 75 Pa (0.0037 cfm/ft <sup>2</sup> @ 1.57 psf)	ASTM E 283
<b>Water Vapor Transmission</b>	0.09 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 26 mils wet film thickness 0.18 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 10 mils wet film thickness	ASTM E 96 Method A
<b>Pull-Off Strength of Coatings</b>	Pass - Min. 110 kPa (15.9 psi) or substrate failure (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood; pvc and galvanized flashing)	ASTM D 4541
<b>Nail Sealability</b> (without Sheathing Fabric)	Pass - No water penetration at galvanized roofing nail penetration under 127 mm (5") head of water after 3 days at 4 °C (40 °F)	ASTM D 1970
<b>Compound Stability</b> (Elevated Temperature)	No flowing, dripping or drop formation up to 177 °C (350 °F)	ASTM D 5147 Section 15
<b>Surface Burning</b>	Class A Flame Spread (<25) Class A Smoke Developed Spread (<450)	ASTM E 84
<b>Radiant Heat Multi-Story Tests</b>	Passed using numerous wall assemblies. Engineering analyses available upon request.	NFPA 285

**ICC-ES AC 212: Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers over Exterior Sheathing**

PROPERTY	RESULTS	TEST METHOD
<b>Sequential Testing</b>		
1. Structural	No cracking at joints or interface of flashing	ASTM E 1233 Procedure A
2. Racking	No cracking at joints or interface of flashing	ASTM E 72
3. Restrained Environmental Conditioning	No cracking at joints or interface of flashing	ICC-ES AC 212
4. Water Penetration	No water penetration after 90 min @ 299 Pa (6.24 psf) Tested over OSB and gypsum sheathing	ASTM E 331
<b>Sequential Testing - Weathering</b>		
1. UV Light Exposure	No cracking or bond failure to substrate	ICC-ES AC 212
2. Accelerated Aging	No cracking or bond failure to substrate	ICC-ES AC 212
3. Hydrostatic Pressure	No water penetration at 55 cm (21.7") water column for 5 hours	AATCC 127-1985
<b>Freeze-Thaw</b>	No sign of deleterious effects after 10 cycles (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood)	ASTM E 2485 (Method B)
<b>Water Resistance</b>	No sign of deleterious effects after 14 day exposure (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood)	ASTM D 2247
<b>Tensile Bond</b>	>103 kPa (15 psi) Tested over exterior gypsum sheathing, ASTM C1177 glassmat sheathing, cement board, OSB, plywood, CMU; pvc and galvanized flashing	ASTM C 297
<b>Tensile Bond</b> (before & after freeze-thaw)	>103 kPa (15 psi) avg; no failure of the lamina after 10 cycles freeze-thaw (Tested over various substrates)	ASTM C 297

**ICC-ES AC 148: Acceptance Criteria for Flexible Flashing Materials**

PROPERTY	RESULTS	TEST METHOD
<b>Sequential Testing – Weathering</b>		
1. UV Light Exposure	No cracking or bond failure to substrate	ICC-ES AC 148
2. Accelerated Aging	No cracking or bond failure to substrate	ICC-ES AC 148
3. Hydrostatic Pressure Test	No water penetration at 55 cm (21.7") water column for 5 hours	AATCC 127-1985
<b>Peal Adhesion</b>	Tested over ASTM C1177 glass-mat sheathing, OSB, plywood, pvc and uncoated aluminum	ASTM D 3330 Method F
After UV Exposure	Pass	ASTM D 3330 Method F
After Accelerated Aging	Pass	ASTM D 3330 Method F
After Elevated Temperature Exposure	Pass	ASTM D 3330 Method F
After Water Immersion	Pass	ASTM D 3330 Method F
<b>Nail Sealability after Thermal Cycling</b>	Pass	ASTM D 1970 (Modified), AAMA 711
<b>Tensile Strength after UV Exposure</b>	All samples meet the minimum requirement of 3.5N/mm (20 lbs/in)	ASTM D 5034, AAMA 711
<b>Cold Temperature Pliability</b>	No cracking after bending around a 25 mm (1") mandrel after 2 hour exposure to -18 °C (0 °F)	ASTM D 1970, AAMA 711
<b>Resistance to Peeling</b>	No signs of distress or failure after 24 hours of exposure at room temperature, 50 °C (122 °F), 65 °C (149 °F), 80 °C (176 °F)	AAMA 711

## MIXING

1. Use directly from original packaging or prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product.
2. Mix MasterSeal® AWB 660 I with a clean, rust-free paddle and drill until thoroughly blended. Dilution of MasterSeal® AWB 660 I is not recommended.
3. Additives other than MasterSeal® AWB 960 AC are not permitted.
4. Close container when not in use.
5. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

## APPLICATION

### JOB CONDITIONS

To apply MasterSeal® AWB 660 I at ambient temperatures below 4 °C (40 °F) but greater than -4 °C (25 °F), thoroughly blend 1 full quart of MasterSeal® AWB 960 AC with one full 5-gallon pail of MasterSeal® AWB 660 I. When using MasterSeal® AWB 960 AC, extended drying time can be expected. Do not apply MasterSeal® AWB 660 I to frozen or frost-laden substrates.

Do not apply MasterSeal® AWB 660 I in ambient temperatures below 4 °C (40 °F) or onto substrates below 4 °C (40 °F) unless MasterSeal® AWB 960 AC is used.

Walls shall be capped to prevent moisture and precipitation from entering wall during construction.

Limit the weather exposure of MasterSeal® AWB 660 I to a maximum of 180 days

### SURFACE PREPARATION

Substrate shall be dry, clean, sound and free of release agents, paint or other residue or coatings.

Unsatisfactory conditions shall be reported to the general contractor and corrected before application of MasterSeal® AWB 660 I.

### EQUIPMENT

Use a 20 mm (¾") nap roller or paint brush. If spraying, refer to *Spray Application of MasterSeal® AWB 660 I / MasterSeal® AWB*

*660 I / MasterSeal® AWB 665 / MasterSeal® AWB 600 FL* technical bulletin for spray application equipment and application instructions.

Note: If using roller application, it is necessary to pre-wet the synthetic roller pad with water and spin out the excess water. The pre-wetting only needs to be done once at the start of application.

### PROCEDURE

1. Substrate shall be of a type acceptable by BASF and shall be installed per substrate manufacturer's instructions and local code requirements.
2. Apply MasterSeal® AWB 660 I and/or MasterSeal® AWB 900 Liquid Flashing Membrane to fasteners, sheathing joints, and rough openings as outlined in *MasterSeal® AWB Application Guidelines for Joint Treatment and Flashing Rough Openings on Framed Construction* technical bulletin or *MasterSeal® AWB Application Guidelines for Flashing Rough Openings on Concrete and Masonry Construction* technical bulletin.
3. A. Immediately place and center MasterSeal® AWB 971 FIB over wet MasterSeal® AWB 660 I at knot holes and check cracks that may exist in plywood or OSB. Completely saturate MasterSeal AWB 971 FIB with MasterSeal® AWB 660 I.  
B. If using roller, brush, or trowel application, allow to dry to the touch before applying MasterSeal® AWB 660 I to entire wall surface. If spraying, "wet on wet" application is acceptable.
4. Refer to *Spray Application of MasterSeal® AWB 660 I / MasterSeal® AWB 660 I / MasterSeal® AWB 665 / MasterSeal® AWB 600 FL* technical bulletin for spray application equipment and application instructions
5. A. Apply MasterSeal® AWB 660 I to DensGlass™ exterior sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, PermaBase™ cement-board by National Gypsum and other cement-boards (ASTM C1325 Type A Exterior), gypsum sheathing (ASTM C79/ASTM C1396) plywood, OSB, concrete or CMU substrate(s) with a 20

mm (¾") nap roller or spray to a consistent, minimum 13 wet mil thickness. Prior to application of the second coat, visually inspect to assure that the surface is blister free and coating is free of voids and pinholes. Repair if needed and then apply a second coat after the initial coating is sufficiently dry. A minimum of two (2) 13 mil wet coats of MasterSeal® AWB 660 I is required. MasterSeal® AWB 660 I may be sprayed onto ASTM C1177 sheathing to a 26-mil thickness in one wet application. Note: Refer technical bulletin for spray application equipment and application instructions.

B. One application of MasterSeal® AWB 660 I at a minimum of 26-mil wet film thickness on concrete/masonry substrates that have been treated with a fully cured coat of MasterSeal® AWB 600 FL. For concrete/masonry substrates that have not been treated with MasterSeal® AWB 600 FL, two (2) minimum 13-mil applications of MasterSeal® AWB 660 I are required. Note: Lightweight CMU or other CMU with high porosity may require additional MasterSeal® AWB 660 I to produce an acceptable result.

C. Visually inspect the MasterSeal® AWB 660 I for voids, pinholes, surface deficiencies, etc. Repair deficiencies and areas that are not intact. Apply additional MasterSeal® AWB 660 I as necessary such that MasterSeal® AWB 660 I is free of voids, pinholes, etc. All sheathing joints, terminations, inside and outside corners must be reinforced with 4" or 9" MasterSeal® AWB 971 FIB or MasterSeal® AWB 970 FIB 4 or 9.

### Drying Time

Allow to dry completely, typically 2 to 4 hours at 25 °C (77 °F) and 50% relative humidity. Protect from rain and from temperatures less than 4 °C (40 °F) until dry.

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### TECHNICAL SUPPORT

Consult the BASF Construction Systems Technical Services Department for specific recommendations concerning all other applications. Consult the Master Builders website, [www.master-builders-solutions.basf.com](http://www.master-builders-solutions.basf.com), for additional information about products and systems and for updated literature.

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#### HEALTH AND SAFETY

Follow good safety and industrial hygiene practices during handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read Safety Data Sheet (SDS) and related literature on this product before specification and/or installation.

#### Solids

74% solids

#### VOC Content

21 g/l, or 0.17 lbs/gal less water and exempt solvents per ASTM D2369 (based in part on EPA method 24)

**For medical emergencies only,  
call CHEMTREC at (800) 424-9300.**

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#### WARRANTY

BASF warrants this product to be free from manufacturing defects and to meet the technical properties on the current Product Bulletin, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. **BASF MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS.** The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of BASF. In the absence of an extended warranty issued by BASF, any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. **BASF WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.**

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