

MasterSeal® AWB 665

Vapor permeable air/water-resistive barrier

PACKAGING

MASTERSEAL® AWB 665

- 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 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 .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 665 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

12 g/l, or 0.10 lbs/gal less water and exempt solvents per ASTM D3960 (based in part on EPA method 24).

SOLIDS

73%

COLOR

Light Gray

DESCRIPTION

MasterSeal® AWB 665 is a one-component, fluid-applied vapor permeable air/water-resistive barrier. This waterproof, resilient coating 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 and metal panels.

PRODUCT HIGHLIGHTS

- ICC ESR-3209 Evaluation Report
- <1% of allowable air leakage per ASTM E2357 Air Leakage of Building Assemblies Test
- Meets ASTM D1970 nail sealability requirements with and without Sheathing Fabric
- Water-based, one-component, low-VOC formulation
- Nonflammable as applied. Class A Fire Rated (ASTM E84)
- Mineral oil and plasticizer free
- 180 Day UV Exposure
- 99% Drainage Efficiency per ASTM E 2273
- Meets NFPA 285 requirements when part of a tested assembly

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™ 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 665 for below-grade applications or on surfaces subject to water immersion

YIELD

Substrate

ASTM C1177 Type Sheathing

525 ft² (48 m²) per pail

Cement Board

575 ft² (53 m²) per pail

Plywood*

295 ft² (27 m²) per pail

Oriented Strand Board (OSB)

295 ft² (27 m²) per pail

Concrete Masonry Units (CMU)*

Standard Weight 265 ft² (24 m²) per pail

Medium Weight 180 ft² (17 m²) per pail

Light Weight 125 ft² (12 m²) per pail

Poured Concrete*

575 ft² (46m²) 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.

Concrete/Masonry with Enershield-Fil

Block Filler

500 ft² (46 m²) 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

Note: Coverage for C1177 sheathing, cement board, poured concrete is at 12 mils WFT; for plywood, OSB and CMU are at 24 mils WFT. Sheathing Fabric saturated with MasterSeal® AWB 665, when applied per manufacturer instructions, self gauges to a 30–40 mil thickness.

Technical Data Composition

MasterSeal® AWB 665 is based on Silica Fortified Rubber™ chemistry.

Compliances

- ICC ESR-3209 Evaluation Report
- ICC-IBC, ICC-IRC, ICC- IECC, and ABAA compliant material

TEST DATA

PROPERTY	RESULTS	TEST METHOD
Air Leakage of Air Barrier Assemblies	0.0007 l/s.m ² (0.0001 cfm/ft ²) @ 75 Pa (1.57 psf) positive/post conditioning 0.0014 l/s.m ² (0.0003 cfm/ft ²) @ 75 Pa (1.57 psf) negative/post conditioning	ASTM E 2357
Air Permeance of Building Materials	0049 l/s.m ² @ 75 Pa (0.00098 cfm/ft ² @ 1.57 psf) (.00098 cfm/ft ² @ 1.57 psf)	ASTM E 2178
Rate of Air Leakage	0.0185 l/s.m ² @ 75 Pa (0.0037 cfm/ft ² @ 1.57 psf)	ASTM E 283
Water Vapor Transmission	18 Perms (grains/Hr. in Hg. ft ²) @ 12 mils wet film thickness 14 Perms (grains/Hr. in Hg. ft ²) @ 20 mils wet film thickness	ASTM E 96 Method B
Pull-Off Strength of Coatings	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
Nail Sealability (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
Compound Stability (Elevated Temperature)	No flowing, dripping or drop formation up to 177 °C (350 °F)	ASTM D 5147 Section 15
Surface Burning	Class A Flame Spread (<25) Class A Smoke Developed Spread (<450)	ASTM E 84
Radiant Heat Multi-Story Tests	Passed using numerous wall assemblies. Engineering analyses available upon request.	NFPA 268, NFPA 285
Fire Resistance	Will not add or detract from the rating of a fire resistive wall assembly	ASTM E 119/UL 263
Drainage Efficiency	99%	ASTM E 2273

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

PROPERTY	RESULTS	TEST METHOD
Sequential Testing		
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
Sequential Testing - Weathering		
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 55cm (21.7") water column for 5 hours	AATCC 127-1985
Freeze-Thaw	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)
Water Resistance	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
Tensile Bond	>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
Tensile Bond (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
Sequential Testing – Weathering		
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
Peal Adhesion	Tested over ASTM C1177 glass-mat sheathing, OSB, plywood, pvc and uncoated aluminum	ASTM D3330 Method F
After UV Exposure	Pass	ASTM D3330 Method F
After Accelerated Aging	Pass	ASTM D3330 Method F
After Elevated Temperature Exposure	Pass	ASTM D3330 Method F
After Water Immersion	Pass	ASTM D3330 Method F
Nail Sealability after Thermal Cycling	Pass	ASTM D 1970 (Modified), AAMA 711
Tensile Strength after UV Exposure	All samples meet the minimum requirement of 3.5N/mm (20 lbs/in)	ASTM D 5034, AAMA 711
Cold Temperature Pliability	No cracking after bending around a 25 mm (1") mandrel after 2 hour exposure to -18 °C (0 °F)	ASTM D 1970, AAMA 711
Resistance to Peeling	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

HOW TO APPLY SURFACE PREPARATION

Substrates shall be dry, clean, sound and free of dust, release agents, paint or other residue or coatings. Verify substrate is, free of fins or planar irregularities greater than 6.4 mm in 3 m (¼" in 10').

Unsatisfactory conditions shall be reported to the general contractor and corrected before application of MasterSeal® AWB 665.

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 665 with a clean, rust-free paddle and drill until thoroughly blended. Dilution of MasterSeal® AWB 665 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 665 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 665 . When using MasterSeal® AWB 960 AC, extended drying time can be expected. Do not apply MasterSeal® AWB 665 to frozen or frost-laden substrates.

Walls should be capped to prevent moisture and precipitation from entering wall during construction. Limit UV and weather exposure of MasterSeal® AWB 665 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. Verify substrate is flat, free of fins or planar irregularities greater than 6.4 mm in 3 m (¼" in 10'). Unsatisfactory conditions shall be reported to the general contractor and corrected before application of MasterSeal® AWB 665.

EQUIPMENT

Airless spray equipment capable of spraying a minimum of 1 gallon per minute with a minimum size reversible tip of 0.019 is required. Airless equipment capable of greater deliveries can use larger tips. Tip sizes of 0.021 to 0.025 are recommended. Tip sizes greater than 0.025 provide too much material and effect the overall consumption of the material effecting the coverage rates. If pump filters are used, minimum size of filter recommended is a 60 mesh filter. When spraying over Plywood and OSB, back rolling is recommended to completely encapsulate and create a pinhole free application. For roller application, use a 13 mm (½") nap roller.

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. Rough openings and sheathing joints can be treated with MasterSeal® AWB 900 Liquid Flashing Membrane or MasterSeal® AWB 971

FIB saturated with MasterSeal® AWB 665.

See following sections for additional steps.

USING MASTERSEAL® AWB 900

Flashing Rough Openings:

- A. Apply a bead of MasterSeal® AWB 900 in each corner of the rough opening and tool MasterSeal® AWB 900 into corners, ensuring that corners are fully sealed. Where wood bucks are used, tool MasterSeal® AWB 900 into gaps between bucks and between the building structure.
- B. Apply additional MasterSeal® AWB 900 in a zigzag pattern onto head, sill, jambs and exterior substrate. Spread MasterSeal® AWB 900 evenly across the rough opening to form a uniform, continuous, void- and pinhole-free membrane with a 12-20 mil thickness. Spread MasterSeal® AWB 900 before it skins, typically within 2-3 minutes of application.
- C. Extend MasterSeal® AWB 900 membrane minimum 4-inches onto the exterior wall, maintaining 12-30 mil thickness.
- D. Allow MasterSeal® AWB 900 to skin before applying MasterSeal® AWB 665 to sheathing. Lap air/water-resistive barrier a minimum of 2-inches onto MasterSeal® AWB 900, creating a continuous, monolithic air/water-resistive barrier.
- E. Allow MasterSeal® AWB 900 to cure before installing windows.

Sheathing Joints:

MasterSeal® AWB 900 can be used to fill sheathing joints up to ½" wide.

- A. Apply a thick bead of MasterSeal® AWB 900 to sheathing joints.
- B. Spread MasterSeal® AWB 900 evenly 1-inch beyond the joint on either side. Apply 20 mils of MasterSeal® AWB 900 across the sheathing joint.
- C. Spot fastener heads with MasterSeal® AWB 900 or MasterSeal® AWB 665.
- D. Allow MasterSeal® AWB 900 to skin before applying subsequent coat of air/water-resistive barrier.

See the MasterSeal® AWB 900 product bulletin for coverages and additional product highlights.

– OR –

USING MasterSeal® AWB 971 FIB

Flashing Rough Openings:

To wrap openings with MasterSeal® AWB 971

FIB. Apply a generous amount of mixed MasterSeal® AWB 665 to all surfaces and immediately embed MasterSeal® AWB 971, completely saturating the MasterSeal® AWB 971. If necessary, apply a second coat of MasterSeal® AWB 665 to ensure a complete, void-free membrane.

Sheathing Joints:

- A. Spot all fasteners and precoat sheathing joints, terminations, inside and outside corners with mixed MasterSeal® AWB 665 using a 101 mm (4") wide by 13 mm (½") nap roller, brush or spray.
 - B. Immediately place and center MasterSeal® AWB 971 FIB over wet MasterSeal® AWB 665 at all sheathing joints, terminations, inside and outside corners, as well as knot holes and check cracks that may exist in plywood or OSB. Ensure MasterSeal® AWB 971 FIB extends evenly on both sides of the sheathing joint. Completely saturate MasterSeal® AWB 971 FIB with MasterSeal® AWB 665.
 - C. Lap MasterSeal® AWB 971 FIB 63.5 mm (2 ½") minimum at intersections.
 - D. If using roller or brush application, allow to dry to the touch before applying MasterSeal® AWB 665 to entire wall surface. If spraying, "wet on wet" application is acceptable.
3. A. Apply MasterSeal® AWB 665 to concrete, 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) and gypsum sheathing (ASTM C79/ASTM C1396) with airless spray equipment by roller, or brush to a consistent, minimum 12 wet mil thickness that is free of voids and pin holes. If rolling, a fully loaded roller pad is required to obtain a consistent, minimum 12 wet mil thickness.
Note: Refer to Spray Application technical bulletin for spray application instructions and equipment requirements.
 - B. Apply MasterSeal® AWB 665 to plywood, OSB or CMU substrate(s) with airless spray equipment or 13 mm (1/2") nap roller a consistent, minimum 12 wet mil thickness. Prior to application of the second coat, visually inspect to assure coating is free of voids and pinholes. Then apply a second coat after the initial coating is sufficiently dry. Note:

A minimum of two (2) 12 mil wet coats of MasterSeal® AWB 665 is required over OSB, plywood and CMU. MasterSeal® AWB 665 may be sprayed to a 24-mil thickness over OSB and plywood in one wet application. Backrolling may be needed to produce a pinhole-free film.

- C. When spraying keep the spray gun as close to 90° angle to the substrate as possible. Overlap spray patterns to ensure uniform coverage, free from pinholes.
- D. Verify thickness using a wet film mil gauge.

Drying Time

Allow to dry completely, typically 2 to 10 hours, before proceeding with cladding installation. Protect from rain and from temperatures less than 4 °C (40 °F) for 24 hours.

Performance

Prior to installation of insulation and/or cladding materials, visually inspect the MasterSeal® AWB 665 for voids, pinholes, surface deficiencies, etc. Repair deficiencies and areas that are not intact. Apply additional MasterSeal® AWB 665 as necessary such that MasterSeal® AWB 665 is free of voids, pinholes, etc. All sheathing joints, terminations, inside and outside corners must be reinforced with 4", 6" or 9" MasterSeal® AWB 971 FIB embedded in MasterSeal® AWB 665; MasterSeal® AWB 970 FIB 4 or 9; or MasterSeal® AWB 900. Reference Air/Vapor/Water-Resistive Barrier Guidelines technical bulletin for proper treatment of rough openings and sheathing joints.

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, for additional information about products and systems and for updated literature.

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

73% solids

VOC Content

12 g/l, or 0.10 lbs/gal less water and exempt solvents per ASTM D3960 (based in part on EPA method 24)

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

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

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