

# Sto EmeraldCoat®

80264 Sto EmeraldCoat®

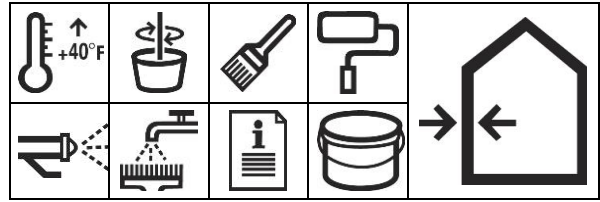
Fluid-applied high perm air barrier

ASHRAE 90.1 Compliant

ICC Code Recognition

ASHRAE 189.1 Compliant

ASTM E-2357 Evaluated



## Technical Data

REPORT	TEST METHOD	TEST CRITERIA	TEST RESULTS
<b>Air Leakage of Air Barrier Assembly</b>	ASTM E-2357	≤ 0.2 L / s·m <sup>2</sup> at 75 Pa) (≤ 0.04 cfm / ft <sup>2</sup> at 1.57 psf)	0.0008 L/s·m <sup>2</sup> (0.0002 cfm/ft <sup>2</sup> )
<b>Water Penetration Resistance after UV Exposure and Heat Aging</b>	AC 212, Section 4.8 AATCC 127 (Water Column Method)	210 hours UV exposure, then 25 cycles drying [120°F (49°C)], then 21.6 in (55 cm) hydrostatic head for 5 hours without cracking, bond failure or water penetration	No cracking, no bond failure, no water penetration after UV exposure and heat aging
<b>Transverse Load/Racking/Restrained Environmental Cycling/Water Penetration</b>	ASTM E-1233 ASTM E-72 AC 212 ASTM E-331	No cracking after structural and restrained environmental cycle loading and no water penetration	No cracking and no water penetration after loading
<b>Water Penetration Resistance</b>	ASTM E-331	No leakage after 15 minutes at 2.86 psf (136 Pa)	No leakage
<b>Water Resistance</b>	ASTM D-2247	No deleterious effects after 14 days	No deleterious effects after 14 days exposure period
<b>Cyclic Pressure/Water Penetration Testing</b>	ASTM E-283 ASTM E-331	No water penetration or evidence of elevated moisture levels in plywood sheathing after 10 cycles of conditioning at 299 Pa (6.24 psf) positive and negative pressure followed by 75 minutes water spray at 6.24 psf (299 Pa) pressure differential with water spray rate of 5 gal/ft <sup>2</sup> ·hr (3.4 L/m <sup>2</sup> ·min)	No water penetration, no elevated moisture levels
<b>Resistance to Mold Growth</b>	ASTM D-3273	No mold growth after 28 days	No mold growth after 28 day exposure
<b>Freeze/Thaw Resistance</b>	AC 212, Section 4.2	No deleterious effects after 10 cycles	No deleterious effects after 10 cycle exposure
<b>Water Vapor Permeance</b>	ASTM E-96 Method B (Water Method)	>5 US perms (287 ng/Pa·s·m <sup>2</sup> )	>10 US perms (575 ng/Pa·s·m <sup>2</sup> )
<b>Air Barrier</b>	ASTM E-2178	< 0.02 L/s·m <sup>2</sup> @ 75 Pa (< 0.004 cfm/ft <sup>2</sup> @ 1.57 psf)	0.001 L/s·m <sup>2</sup> (0.0002 cfm/ft <sup>2</sup> )
<b>Structural Integrity</b>	ASTM E-330	2 inches (51 mm) water pressure (positive and negative) for 1 hour	No loss of structural integrity
<b>Nail Sealability</b>	ASTM D-1970		Pass
<b>Flexibility</b>	ASTM D-522	No cracking or delamination using 1/8" (3 mm) mandrel at 14° F (-10° C) before & after aging	No cracking or delamination before & after aging
<b>Tensile Adhesion</b>	ASTM C-297	> 15 psi (103 kPa) or exceed strength of substrate	Exposure 1 OSB: 32 psi (221 kPa) Ext. Plywood: 86 psi (592 kPa) Glass-Mat Sheathing: exceeds strength of substrate Ext. Gypsum Sheathing: exceeds strength of substrate
<b>Tensile Bond:</b>	ASTM D-4541	Dow 790 to Sto EmeraldCoat Dow 795 to Sto EmeraldCoat	55 psi 89 psi
<b>Surface Burning</b>	ASTM E-84 (with StoGuard Fabric)	Flame Spread: ≤25 Smoke Developed: ≤450	Flame Spread: <15 Smoke Developed: <35 ICC & NFPA Class A Building Material
<b>Fire Testing</b>	NFPA 285 and UBC 26-9	No increase in fire hazard	Pass

Sto EmeraldCoat® is a ready-mixed, flexible waterproof air barrier membrane. It is applied directly to wall sheathing and functions as a vertical above grade waterproof air barrier when combined with StoGuard® joint and rough opening treatment. Sto EmeraldCoat® is one component of the StoGuard Assembly, which is a fluid-applied membrane that offers a superior waterproof air barrier. StoGuard can be used beneath various claddings including Portland cement stucco, vinyl, cement board siding and brick.

### Coverage per Pail

Glass-Mat Sheathing: 425-525 ft<sup>2</sup> (39-49 m<sup>2</sup>)  
Exterior Gypsum: 550-650 ft<sup>2</sup> (51-60 m<sup>2</sup>)  
Plywood: 425-525 ft<sup>2</sup> (39-49 m<sup>2</sup>)  
OSB: 400-500 ft<sup>2</sup> (37-46 m<sup>2</sup>)  
CMU (2 coats): 100-300 ft<sup>2</sup> (9.3-28 m<sup>2</sup>)  
Coverages may vary depending on application technique and surface conditions

### When used with StoGuard Fabric to treat the sheathing joints and rough openings:

Glass-Mat Sheathing\*: 400-500 ft<sup>2</sup> (37-46 m<sup>2</sup>)  
Exterior Gypsum: 500-600 ft<sup>2</sup> (46-56 m<sup>2</sup>)  
Plywood: 400-500 ft<sup>2</sup> (37-46 m<sup>2</sup>)  
OSB: 350-450 ft<sup>2</sup> (33-42 m<sup>2</sup>)  
CMU (2 coats): 100-300 ft<sup>2</sup> (9.3-28 m<sup>2</sup>)  
Coverages may vary depending on the number of rough openings as well as surface conditions.

\*Coverage may vary by brand of glass-mat sheathing.

### Packaging

5 gallon (19 L) pail.

### Shelf Life

18 months, if properly stored and sealed.

### Storage

Keep containers covered to protect from skinning. If material skins, remove skinned material from container.

# Sto EmeraldCoat®

## Technical Data continued

REPORT	TEST METHOD	TEST CRITERIA	TEST RESULTS
VOC (g/L)		This product complies with US EPA (40 CFR 59) and South Coast AQMD (Rule 1113) VOC emission standards for architectural coatings. VOC less than 100 g/L.	
% Solids (by volume)	Calculated		65%

Notes: 1. IBC: International Building Code. 2. NFPA: National Fire Protection Association. 3. Sto EmeraldCoat complies with ICC-ES AC 212, acceptance criterion for water-resistive coatings used as water-resistive barriers over exterior sheathing.

Features	Benefits
1 <b>Waterproof</b>	Minimizes risk of water damage and associated repair or replacement costs
2 <b>Vapor Permeable</b>	Minimizes risk of condensation in wall from water vapor diffusion
3 <b>Structural</b>	No air leakage between the sheathing and StoGuard; rigid and stable under air pressure loads; does not tear or blow off the wall with wind
4 <b>Seamless</b>	No tears, holes, or mislapped joints that can compromise performance in service
5 <b>Durable</b>	Does not tear or lose its effectiveness with exposure to weather during construction or while in service
6 <b>Spray Applied via Airless Spray Equipment</b>	Easy, fast installation; does not require specialized spray equipment
7 <b>Liquid Formulation -Water Based</b>	Safe non-toxic, VOC compliant, saves time and money when installing the product, does not require highly skilled labor
8 <b>Safe for Interior and Exterior Use</b>	Low VOC, low flame spread and smoke development
9 <b>Developed to be somewhat translucent at the recommended application thickness so sheathing logos may show through the product</b>	Allow for better quality control as you will see that the joint treatment has been installed

## Surface Preparation

Surfaces must be clean, dry, and free of frost, damage and all bond-inhibiting materials, including dirt, efflorescence, form oil and other foreign matter. Damaged sheathing must be removed and replaced. Avoid application over irregular surfaces.

Substrate to be coated must be continuous without joints, holes, etc. exceeding 1/32" (0.8 mm) in size. Sheathing must be properly installed as required by applicable building codes or sheathing manufacturer.

## Mixing

Mix with a clean, rust-free electric drill and paddle to a uniform consistency.

PRODUCT MUST NOT BE THINNED OR DILUTED.

## Application

Apply only to sound and clean, dry, properly prepared, frost free surfaces. Sheathing joints, inside and outside corners and rough openings must be treated with StoGuard joint and rough opening treatment. If using StoGuard Fabric pre-spot any overdriven fasteners with Sto EmeraldCoat. Spot surface defects such as overdriven fasteners, knots or other voids in sheathing surface with Sto Gold Fill, StoGuard RapidSeal or StoGuard RapidFill.

**Over Exterior Gypsum Sheathing, Glass-Mat Sheathing, Exterior Plywood and Oriented Strand Board (OSB):** Apply Sto EmeraldCoat to the prepared substrate using spray equipment such as Sto's M-8 Spray Pump or airless spray equipment that can support a minimum 1 Gallon per minute (GPM) and a .031 mil tip at 3000+ psi, or with the appropriate size nap roller in a single, uniform coating at a wet thickness of 10 mils. For roll application over OSB, glass-mat gypsum sheathing, and plywood: use a 1/2" (13 mm) nap roller.

OSB sheathing may require touch-up with a second coat of Sto EmeraldCoat where wood strands are raised from the surface. Inspect surface after initial application of Sto EmeraldCoat and touch-up as needed.

### Over Concrete Masonry Wall Construction:

Concrete masonry wall construction must be structurally sound, clean, dry, and free from damage, frost, and all bond-inhibiting

material, including dust, dirt, mold, algae, and efflorescence. Repair non-structural cracks up to 1/8 inch (3 mm) wide by filling with Sto Gold Fill or up to 1/2 inch (13 mm) wide by filling with Sto RapidGuard. Rake the crack with a sharp tool to remove loose or friable material, and blow clean with oil-free compressed air. Apply Sto Gold Fill or Sto RapidGuard by trowel or putty knife over the crack and smooth with the knife or trowel. For moving cracks consult a structural engineer. Do not use Sto Gold Fill or Sto RapidGuard to repair moving cracks or to fill expansion joints in construction. Protect crack repair materials from rain and freezing until dry.

**For Air and Moisture Barrier: Spray-applied over CMU:** Apply Sto EmeraldCoat uniformly with the Sto M-8 pump, airless spray, or other suitable spray equipment. Back-roll to fill the surface and allow to dry. Apply a second uniform coat of Sto EmeraldCoat and back-roll to achieve a void and pinhole free surface. Depending on the condition of the surface a minimum of 10 wet mils up to a maximum of 30 wet mils per coat is required. Apply additional coats if needed to achieve a VOID AND PINHOLE FREE surface.

## Sto EmeraldCoat®

## Application (cont.)

**Roller-applied over CMU:** Apply Sto EmeraldCoat uniformly with a 3/4 inch (19 mm) nap roller and allow to dry. Apply a second uniform coat of Sto EmeraldCoat to achieve a void and pinhole free surface. Depending on the condition of the surface a minimum of 10 wet mils up to a maximum of 30 wet mils per coat is required. Apply additional coats if needed to achieve a VOID AND PINHOLE FREE surface.

**IMPORTANT NOTE:** Sto EmeraldCoat functions as a waterproof air barrier on normal weight concrete masonry unit wall construction with flush (struck flush with the surface of the CMU) or concave joints when a minimum of two liberal coats are applied. Additional coats may be necessary depending on the condition of the CMU wall surface, CMU porosity, joint profile, and other variables that may exist. For "rough" CMU wall surfaces, skim coat the entire surface with one of Sto's cementitious levelers (Sto Leveler, Sto BTS® Plus, Sto BTS® Silo, or Sto Primer/Adhesive B before

application of Sto EmeraldCoat. A VOID AND PINHOLE FREE SURFACE must be achieved for Sto EmeraldCoat to properly function as a waterproof air barrier on CMU wall surfaces.

**Curing/Drying**

Sto EmeraldCoat is dry to touch and can be over coated within 2-4 hours under normal conditions [70°F (21°C), 50% RH]. Final drying varies depending on temperature / humidity and surface conditions. Protect from rain and freezing until completely dry.

**Material Storage**

Keep containers covered to protect from skinning. If skin forms, remove the skinned material from container; remaining material is unaffected by skinned material.

**Clean Up**

Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

## Limitations

- Apply only when the surface and ambient temperatures are above 40°F (4°C) and below 100°F (38°C) during application and drying period.
- Not recommended for use when cool, damp conditions exist for prolonged periods. Cool, damp conditions retard drying and may require extended periods of protection against rain or freezing.
- Do not use on damp surfaces, below grade, or on surfaces subject to water immersion.
- Fire-retardant treated or pressure treated plywood substrates must be dry and free of all bond-inhibiting materials.
- Not recommended for spanning holes or sheathing joints in excess of 1/8" (3 mm) wide.
- Maintain temperatures above 40°F (4°C) during drying period for at least 24 hrs.
- Provide adequate ventilation during application and drying period.
- Ventilate temporary heaters to the exterior to prevent water vapor from accumulating on or within the wall assembly materials.
- Sto EmeraldCoat can be left exposed to weather for up to 6 months. Install cladding over Sto EmeraldCoat within 6 months of installation.
- For sheathing use a slip sheet (typically one layer of building paper) between Sto EmeraldCoat and metal lath in Portland cement stucco and similarly constructed wall assemblies. Paper may be omitted when paperbacked stucco lath is used.
- See Tech Hotline 0614-BSc for additional information regarding coverage over different brands of glass-mat sheathing.
- NOT RECOMMENDED FOR USE BENEATH EIFS

## Health And Safety

**Health Precautions**

Product is water-based. As with any chemical construction product, exercise care when handling.

**WARNING!**

Causes eye and skin irritation.

**Precautionary Statement**

Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

**FIRST AID MEASURES**

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.

**Skin Contact:** Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. **Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

**Ingestion:** If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

**Spills:** Collect with suitable absorbent material such as cotton rags. Then dispose in accordance with applicable local regulations.

**Disposal:** Dispose in accordance with local, state or federal regulations.

**Warning:** KEEP CONTAINER CLOSED WHEN NOT IN USE. KEEP OUT OF THE REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. Consult Safety Data Sheet on [www.stocorp.com](http://www.stocorp.com) for further health and safety information.

## Precautions

Exercise care when attaching metal lath or other wall assembly components through StoGuard so that fasteners go into (not between) framing supports. Seal all penetrations through the wall. Do not use power, powder actuated or other fastening tools/methods that can damage the air barrier, water resistive barrier or substrate. Test assemblies when necessary to verify performance.

**LIMITED WARRANTY**

This product is subject to a written limited warranty which can be obtained free of charge from Sto Corp.

Refer to Sto Specifications for more complete information on proper use and handling of this product.

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**Attention**

This product is intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. It should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of this product or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. **STO CORP. DISCLAIMS ALL WARRANTIES EXPRESSED OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.** For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, [www.stocorp.com](http://www.stocorp.com).