

ICC-ES Evaluation Report

ESR-1233

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**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION**
**Section: 07 25 00—Water-Resistive Barriers/Weather
Barriers**
REPORT HOLDER:

STO CORP.
6175 RIVERSIDE DRIVE, S.W.
ATLANTA, GEORGIA 30331
(404) 346-3666
www.stocorp.com

ADDITIONAL LISTEE:

PROSOCO, INC.
3741 GREENWAY CIRCLE
LAWRENCE, KANSAS 66046

EVALUATION SUBJECT:
**STO GUARD® WITH GOLD COAT® AND STO GUARD®
WITH EMERALDCOAT® WATER-RESISTIVE BARRIERS**
1.0 EVALUATION SCOPE
Compliance with the following codes:

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2009 *International Energy Conservation Code*® (2009 IECC)
- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- 2006 *International Energy Conservation Code*® (2006 IECC)

Properties evaluated:

- Surface-burning characteristics
- Water-resistive barrier
- Air leakage

2.0 USES

Sto Guard® with Gold Coat® and Sto Guard® with EmeraldCoat® are used as alternatives to the water-resistive barrier specified in the IBC and IRC when installed over wood and gypsum-based sheathing in exterior walls of non-fire-resistance-rated construction of any construction type. They are also used as air barrier materials in accordance with the IRC Section N1102 and IECC Sections 402.4 and 502.4.

Sto Guard® with Gold Coat® complying with ASTM E 2570 is used over sheathing where EIFS cladding is to be used. Sto Guard® with Gold Coat® may be used behind other wall covering materials, but requires a single layer of building paper to serve as a slip sheet when used behind portland cement plaster (stucco).

Sto Guard® with EmeraldCoat® is used over sheathing where EIFS cladding will not be used.

3.0 DESCRIPTION
3.1 General:

The Sto Guard® water-resistive coating system consists of a sheathing joint treatment, a rough opening treatment and a water-resistive barrier coating. The joint treatment consists of: 266 Sto Gold Fill® and 919 Sto Detail Mesh (interchangeable with 276 Sto Guard Mesh or 278 Sto Guard Mesh, which vary in width only). An alternative joint treatment is 207/208 StoGuard Fabric. The water-resistive barrier coating is either Sto Gold Coat® or Sto EmeraldCoat®. Sto Guard® has a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84.

3.1.1 266 Sto Gold Fill®: 266 Sto Gold Fill® is a ready-mixed, flexible joint compound packaged in 5-gallon (19 L) pails, having a one-year shelf life when stored at temperatures between 38°F and 90°F (3.3°C and 32.2°C). The product is also sold under the name PROSOCO R-Guard Fill.

3.1.2 265 Sto Gold Coat®: 265 Sto Gold Coat® is a ready-mixed, flexible, polymer-based liquid coating packaged in 5-gallon (19 L) pails, having a one-year shelf life when stored at temperatures between 38°F and 90°F (3.3°C and 32.2°C). The product is also sold under the name PROSOCO R-Guard Spray Wrap.

3.1.3 919 Sto Detail Mesh: 919 Sto Detail Mesh is a 4.2 oz/yd² (142 g/m²), polymer-coated, glass-fiber reinforcing mesh packaged in 9-inch-wide-by-150-foot-long (229 mm by 46 m) rolls. The product is also sold under the name PROSOCO R-Guard Tape 9.5 (interchangeable with PROSOCO R-Guard 4.25).

3.1.4 207/208 StoGuard Fabric: The fabric is a nonwoven cloth reinforcement packaged in 4-inch (102 mm) and 6-inch (152 mm) rolls. The product is also sold under the name PROSOCO R-Guard Joint Fabric.

3.1.5 264 Sto EmeraldCoat®: Sto EmeraldCoat® is a ready-mixed, flexible, polymer-based liquid coating packaged in 5-gallon (19 L) pails and having a one-year shelf life when stored at temperatures between 38°F and 90°F (3.3°C and 32.2°C). The product is also sold under the name PROSOCO R-Guard MVP.

3.2 Water Vapor Transmission:

The desiccant method water vapor transmission (WVT) values as determined in accordance with ASTM E 96 are as follows:

Sto EmeraldCoat®:

- Single layer 8.5 Perms = 58.7 g/m² per 24 hours
- Double layer 3.5 Perms = 24.5 g/m² per 24 hours

Sto Gold Coat®:

- Single layer 7.7 Perms = 53.1 grams/m² per 24 hours
- Double layer 3.1 Perms = 21.8 grams/m² per 24 hours

Sto Gold Fill® with Sto Detail Mesh: 7.10 perm = 119 grams/m² per 24 hours

3.3 Sheathing:

The use of Sto Guard® is limited to applications over the following sheathing materials:

- Gypsum sheathing board complying with ASTM C 79 or ASTM C 1396.
- Glass mat faced gypsum recognized in a current evaluation report as complying with ASTM C 1177.
- Plywood, Exposure 1 exterior grade, complying with U.S. DOC PS-1.
- Oriented Strand Board (OSB), Exposure 1, complying with U. S. DOC PS-2.

4.0 INSTALLATION

4.1 General:

Installation of Sto Guard® water-resistive coating system must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

4.2 Substrate Preparation:

Sto Guard® must be installed on the exterior side of vertical exterior walls over the exterior sheathing. Surfaces must be free of all bond-inhibiting materials, including dirt, oil and other foreign matter. Sto Guard® must be applied only when the surface and ambient temperatures are 40°F (4°C) and rising during the application and drying period. Working time will decrease as surface and ambient temperatures increase.

Sto Guard® must not be installed on damp surfaces, below-grade surfaces, or on surfaces subject to water immersion. Damaged sheathing must be removed and replaced. Sheathing must be installed as required by the applicable code. Sto Guard® water-resistive coating system must be covered with an exterior wall finish complying with the requirements of the applicable code or a current evaluation report. See Figures 1 through 8 for installation details.

Sto Gold Fill® must be troweled over all sheathing joints, rough openings, and inside and outside building corners. Sto Detail Mesh shall be immediately embedded in the Sto Gold Fill® and troweled smooth. Sheathing joints require a minimum 4-inch (101 mm) width of mesh. Rough openings and corners require a minimum 9-inch (228 mm) width of mesh. Fastener heads and surface defects must be spot-coated with Sto Gold Fill®. The system must not be applied over irregular surfaces. The substrate to be coated must be continuous, without joints, holes, etc., exceeding 1/32 inch (0.8 mm) in size. Surface defects larger than 1/32 inch (0.8 mm) must be treated with Sto Gold Fill® prior to application of Sto Gold Coat®. The application thickness of Sto Gold Fill™ must not exceed 1/16 inch (1.6 mm).

StoGuard Fabric may be used in lieu of Sto Gold Fill as a joint treatment. Sto Gold Coat or Sto EmeraldCoat is applied by spray, brush or roller to the joint area, and StoGuard Fabric is immediately embedded in the wet material by placing the fabric and then brushing or rolling over it. After drying, a second coat of Sto Gold Coat or Sto EmeraldCoat is applied over the joint as described in Section 4.3 or 4.4.

4.3 Coating Sto Gold Coat® Application:

4.3.1 Sto Gold Coat® Application over Exterior Gypsum Sheathing, Glass Mat Faced Gypsum or Exterior Plywood: The substrate must be prepared as described in Section 4.2. Sto Gold Coat® must be applied with a nap roller in a single, uniform coat to a wet thickness of 10 mils [0.01 inch (0.25 mm)]. For application over glass mat faced gypsum sheathing, a 3/4-inch (19.1 mm) nap roller must be used. For application over plywood and gypsum sheathing, a 1/2-inch (12.7 mm) nap roller must be used. The coating must not be applied in rainy conditions.

4.3.2 Sto Gold Coat® Application over Oriented Strand Board (OSB): A two-coat application of Sto Gold Coat® is required over OSB. The first coat of Sto Gold Coat® must be applied over the substrate prior to treatment of sheathing joints, rough openings, and corners. The second coat of Sto Gold Coat® must be applied to the prepared substrate, as described in Section 4.2, with a 3/4-inch (19.1 mm) nap roller. The substrate receiving the second coat of Sto Gold Coat® must be continuous, without joints, holes, etc., exceeding 1/32 inch (0.8 mm) in size. The second coat of Sto Gold Coat® must be applied over the treated surface in a single, uniform coating to a wet thickness of 10 mils [0.01 inch (0.25 mm)]. The coating must not be applied in rainy conditions.

4.3.3 Curing and Drying: Sto Gold Coat® must be dry to the touch and may be over-coated within two to four hours after application, under normal conditions. Drying time varies depending on temperature/humidity and surface conditions. A minimum of 24 hours is required before any adhesive attachment of exterior finish to the final Sto Guard® system surface is made, if required. Surfaces must be protected from rain and freezing until completely dry.

4.4 Sto EmeraldCoat® Application:

4.4.1 Sto EmeraldCoat® Application over Sheathing: The substrate must be prepared as described in Section 4.2. Sto EmeraldCoat® is applied with a nap roller or appropriate spray equipment in a single uniform coat to a wet thickness of 10 mils [0.01 inch (0.25 mm)]. For application over glass mat faced gypsum sheathing and orientated strand board (OSB) a 3/4-inch (19.1 mm) nap roller is used. OSB sheathing may require touch-up with a second application of Sto EmeraldCoat® where wood strands are raised. Surfaces must be inspected and touched up as needed before installation of wall covering materials. For application over plywood and gypsum sheathing, a 1/2-inch (12.7 mm) nap roller is used. The coating must not be applied in rainy conditions.

4.4.2 Curing and Drying: Sto EmeraldCoat® must be dry to the touch and may be over-coated within two to four hours after application. Drying time varies depending on temperature/humidity and surface conditions. Surfaces must be protected from rain and freezing until completely dry.

5.0 CONDITIONS OF USE

The Sto Guard® water-resistive coating system described in this report complies with, or is a suitable alternative 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 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 For EIFS applications, special inspections are required at the jobsite in accordance with 2009 IBC Section 1704.14.1 (2006 IBC Section 1704.13, which also applies to the 2006 IRC). For other applications, special inspections are not required at the jobsite if installation is done by an installer or contractor trained by the manufacturer, and a certificate of installation (see Figure 9) 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. Special inspections are not required under the 2009 IRC.
- 5.3 The Sto Guard® system is limited to installations on vertical walls and must not be used on parapets or on sloped or horizontal surfaces.
- 5.4 The Sto Guard® system must be covered with an

exterior wall finish or covering complying with the applicable code or a current evaluation report.

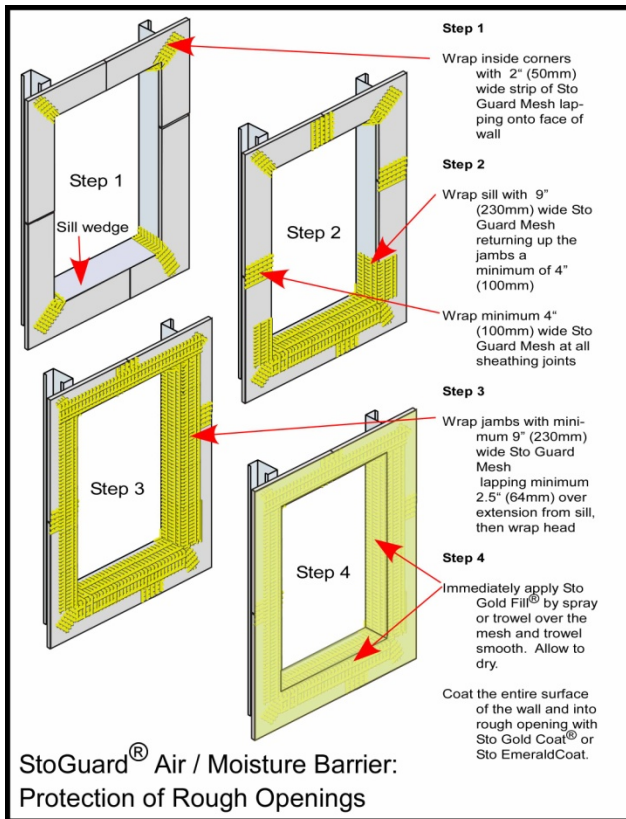
- 5.5 The Sto Guard® system must not be used for repairing moving cracks, joints or cracks wider than $\frac{1}{8}$ inch (3.2 mm).

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive Coatings Used as Weather-resistive Barriers over Exterior Sheathing (AC212), dated June 2011.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive Coatings Used as Weather-resistive Barriers over Exterior Sheathing (AC212), dated February 2005 (editorially revised October 2008).

7.0 IDENTIFICATION

Packages of the products described in this report must be identified by a label bearing the manufacturer's name (Sto Corp.) and address, product name, identification of components, lot or batch number, quantity of material in packaged mix, storage instructions and shelf life, expiration date (when applicable) and the evaluation report number (ESR-1233).



For SI: 1 inch = 25.4 mm

Figure 1

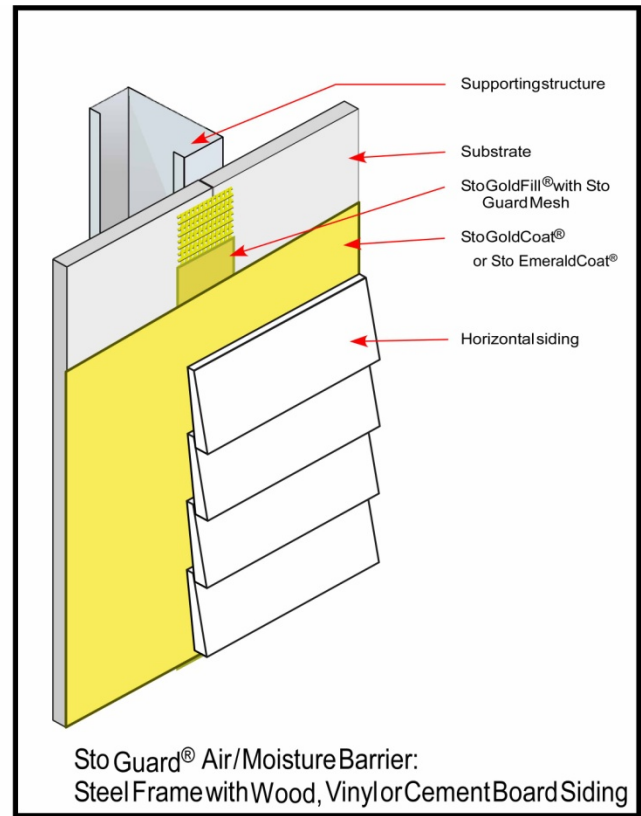


Figure 2

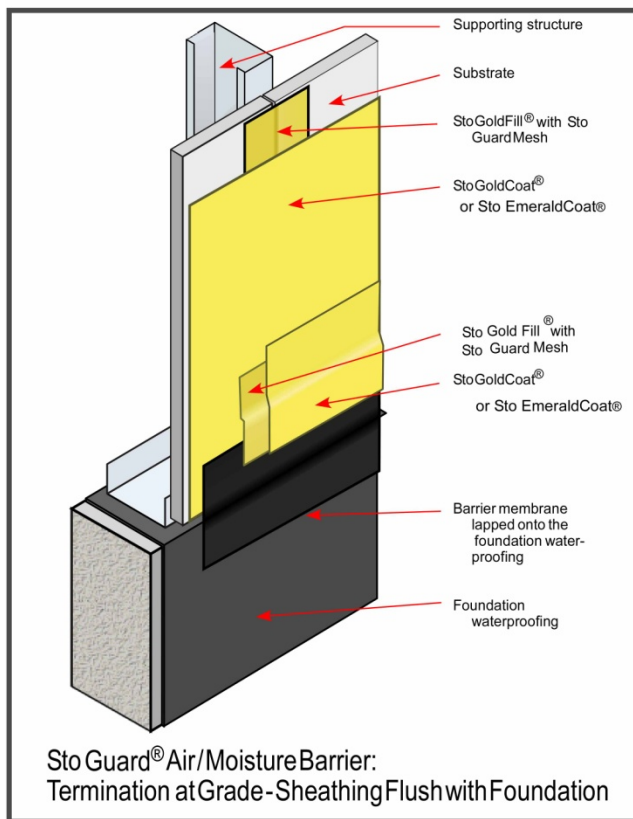


Figure 3

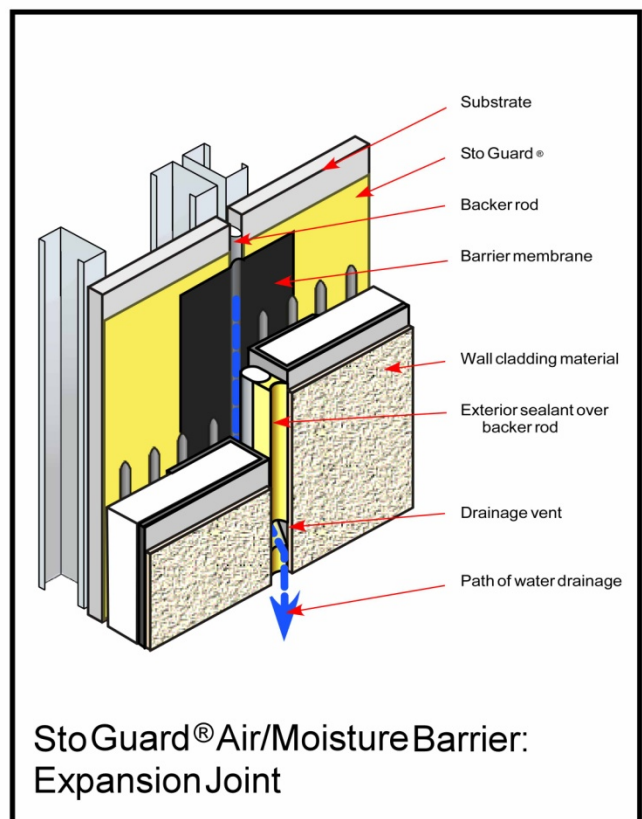


Figure 4

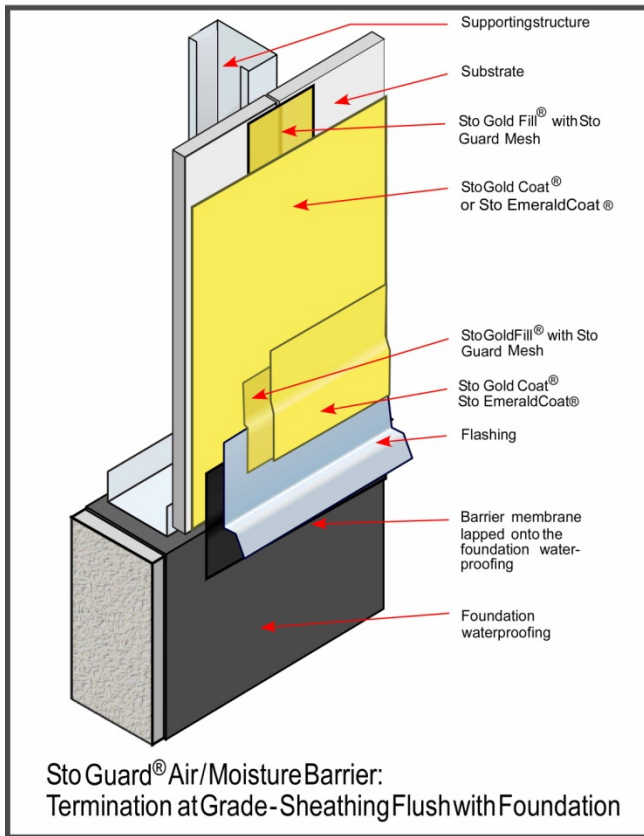


Figure 5

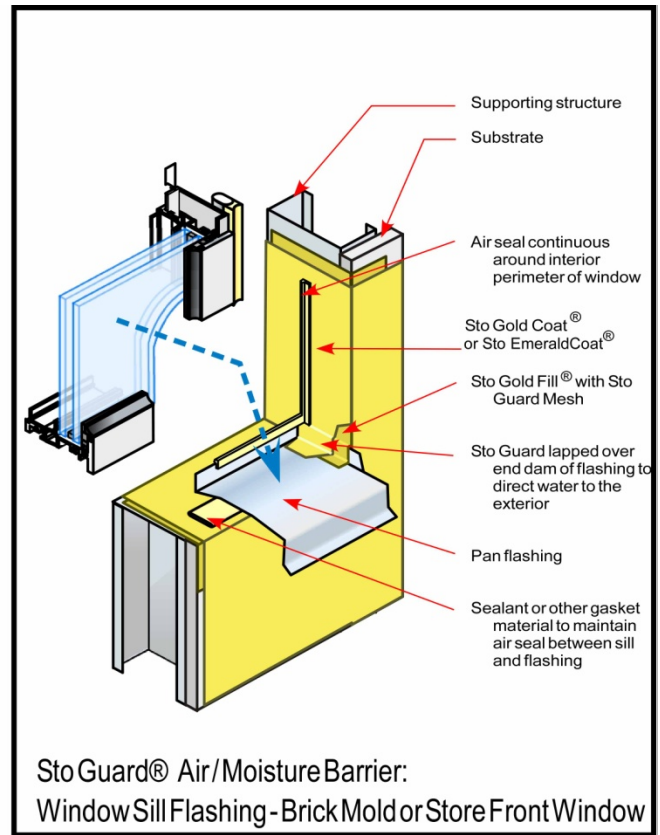


Figure 6

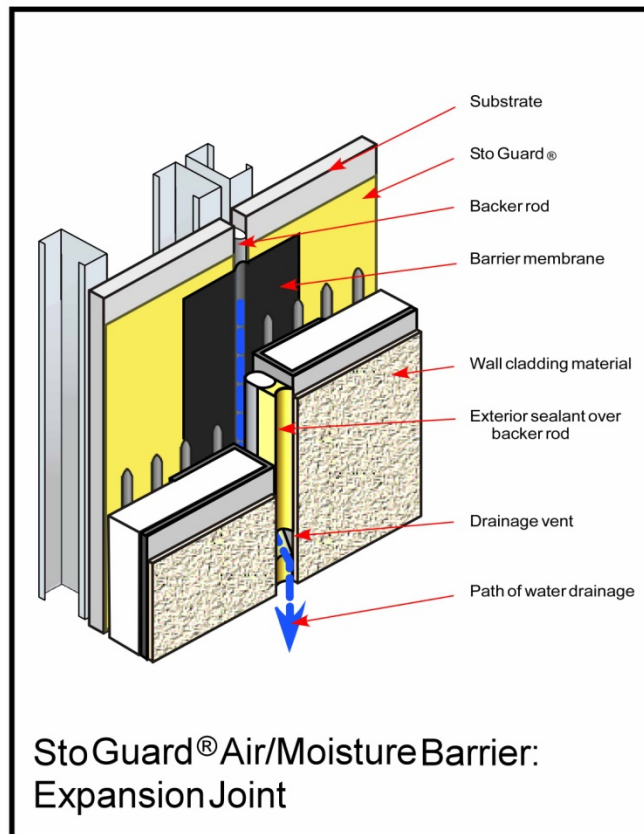


Figure 7

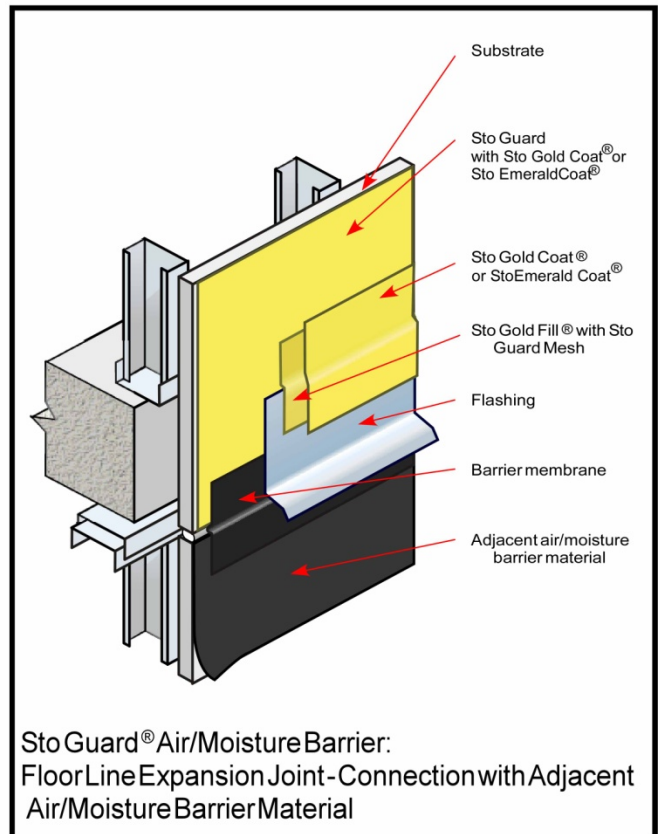


Figure 8

(WATER-RESISTIVE COATING CONTRACTOR NAME)

Completion Date: _____

THE WATER-RESISTIVE COATING INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

_____ CONFORMS

TO (WATER-RESISTIVE COATING MANUFACTURER NAME) RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) _____ OF EVALUATION REPORT ESR-_____.

Address of Structure:

Product Component Names:

Reinforcing Fabric _____
Coating _____

INSTALLATION

CONFORMS

A. Substrate Type and Tolerance

B. Water-resistive Coating

C. The information entered above is offered in testimony that the water-resistive coating application conforms with the manufacturer's installation methods and procedures, and the water-resistive coating manufacturer's evaluation report.

NOTE: An installation card shall be received from the water-resistive coating installer indicating that the water-resistive coating application conforms with the water-resistive coating evaluation report and water-resistive coating manufacturer's installation methods and procedures must accompany this declaration.

Water-resistive Coating Contractor Company Name and Address:

Signature of responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (_____) _____

cc: Original: Building Department
Copy: Water-resistive Coating Manufacturer

FIGURE 9