



Department of Commerce

Safety & Buildings Division

201 West Washington Avenue

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Madison, WI 53701-2658

Approval # 200006-I (Replaces 940009-I)

Wisconsin Material Approval

Material

"R-Wall" (EIFS)
Exterior Insulation and Finish System

Manufacturer

Sto Corporation
3800 Camp Creek Pkwy., Ste. 120
Atlanta, GA 30331

SCOPE OF EVALUATION

The STO "R-Wall" Exterior Insulation and Finish System has been evaluated for use as an exterior wall covering over combustible and noncombustible, hourly-rated and 0-hour-rated exterior walls in compliance with s.COMM 51.06(1), (2), (3)(a) of the current edition of the Wisconsin Administrative Building And Heating, Ventilating And Air Conditioning Code.

DESCRIPTION AND USE

The "R-Wall" Exterior Wall Insulation and Finish System is a nonstructural wall system intended for application to a vertical substrate of concrete, masonry, gypsum sheathing, exterior grade or exposure 1 wood based sheathing, or gypsum sheathed wood or steel studs. A thermal barrier is required as an interior finish if substrates other than concrete or masonry are used. The five components of the "R-Wall" system are an adhesive or mechanical attachment system; a rigid expanded polystyrene board, a fiberglass reinforcing fabric; a base coat, and a synthetic plaster finish.

There are three adhesive types:

- **Primer/Adhesive** is a acrylic based adhesive intended to be mixed with Type I Portland Cement and is used to bond the insulation board to substrates of concrete, masonry and water-resistant gypsum sheathing.
- **Primer/Adhesive-B** is a polymer modified cement based bagged product, used as an adhesive on the same substrates as Primer/Adhesive.
- **One Part/Adhesive** is premixed and is used to bond the insulation board to substrates of exterior grade or exposure 1 wood based sheathing and gypsum sheathing. Either Primer/Adhesive or Primer/Adhesive-B may be used as a base coat to embed mesh onto polystyrene insulation. One Part/Adhesive is not to be used as a base coat. A mechanical attachment system developed by STO Industries may also be used to attach the polystyrene board to substrates of block, concrete and gypsum sheathed wood or steel studs.

The polystyrene board has a nominal density of 1.0 pcf, a flame spread rating of 25 or less and a smoke density rating of 450 or less. The polystyrene board has a minimum thickness of 3/4-inch and a maximum thickness of 4-inches. The normal width used in the STO "R-Wall" EIFS is 24-inches wide, and 48-inches long.

The reinforcing mesh is an open-weave fiberglass fabric with an alkali- resistant coating. The fabric is attached to the insulating board by embedment in R-Wall Primer/Adhesive or Primer/Adhesive-B. The fabric is continuous around corners and overlaps a minimum of 2 1/2-inches at all fabric edges.

After the base coat has dried for 24 hours, the finish coat is applied.

TEST RESULTS

Modified ASTM E108 tests were performed on a full scale "R-Wall" system in its end use condition for all three attachment systems used to bond the polystyrene board to the substrate. The results of all tests indicated that the "R-Wall" system did not propagate flames over the surface or through the core.

Additional testing was conducted to evaluate weather resistant performance properties, bond strength, moisture resistance and wind-driven rain tests. The results of these tests indicate adequate performance of the "R-Wall" system.

LIMITATIONS OF APPROVAL

The composite material shall be installed in strict accordance with the manufacturer's recommendation procedures and this approval.

The rigid insulation component of the "R-Wall" system shall be of polystyrene with a flame spread rating of 25 or less and a smoke developed rating of 450 or less when tested in accordance with ASTM E84.

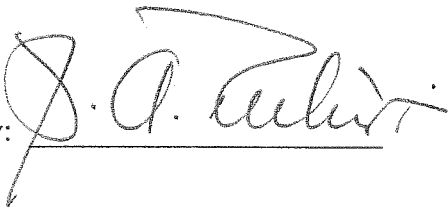
The foam plastic substrate shall not exceed a thickness of 4-inches.

The foam plastic insulation shall be separated from the interior of the building by 1/2-inch gypsum wall board or equivalent thermal barrier material.

This approval will be valid through December 31, 2005, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Reviewed by: 

Approval Date: JAN. 21, 2000 By: 

Lee Finley, Jr.
Product/Material & Building Plan Review
Integrated Services Bureau