

GENERAL

INVESTIGATION:

The scope of this investigation was to evaluate formed steel stone coated roofing panels identified as "Spany", "Roserbond" and "Rowood". Additionally, formed copper roofing panel identified as "Spany" was evaluated. Due to previous data on file, it was judged by Underwriters Laboratories that testing on the copper panel would be waived.

DESCRIPTION

PRODUCT COVERED:

The products covered by this Report are stone-coated roofing panels.

The products in this Report intended for use in Roofing Systems are Classified as to external fire exposure only.

USE:

The products are intended for use as building materials as permitted by authorities having jurisdiction.

TEST RECORD NO. 1

EXAMINATION OF MATERIALS:

The materials used in this investigation were produced under the Classification Program of Underwriters Laboratories Inc., as evidenced by the Classification Marking on the products. The composition of the finished materials is of a proprietary nature. Data on the composition is on file at the laboratories for use in the Follow-Up Service Program.

Various physical and chemical tests were conducted on the components and finished products. The results developed from these tests were employed in establishing specifications for use in the factory Follow-Up Service Program.

FIRE TESTS:

SAMPLES

SYSTEMDESCRIPTION OF SYSTEMS

- | | |
|---|---|
| 1 | <ul style="list-style-type: none"><input type="checkbox"/> Plywood Deck<input type="checkbox"/> Nominal 2-in x 2-in. x 96-in. battens mechanically fastened to the test deck with long dimension of battens parallel to long dimension of test deck with an on-center spacing of 14-$\frac{5}{8}$ in.<input type="checkbox"/> 1 ply 30 lb asphalt saturated felt mechanically fastened to 2-in x 2-in. x 96-in. battens<input type="checkbox"/> Nominal 1-in x 4-in. x 40-in. battens mechanically fastened to the 2-in x 2-in. x 96-in. battens with long dimension of battens parallel to short dimension of test deck with an on-center spacing of 3-in.<input type="checkbox"/> "Stone Coated Panels" mechanically fastened to the 1-in x 4-in. x 40-in. battens |
| 2 | <ul style="list-style-type: none"><input type="checkbox"/> Plywood Deck<input type="checkbox"/> Nominal 2-in x 2-in. x 96-in. battens mechanically fastened to the test deck with long dimension of battens parallel to long dimension of test deck with an on-center spacing of 14-$\frac{5}{8}$ in.<input type="checkbox"/> 1 ply Type G3 mineral surfaced cap sheet mechanically fastened to 2-in x 2-in. x 96-in. battens<input type="checkbox"/> Nominal 1-in x 4-in. x 40-in. battens mechanically fastened to the 2-in x 2-in. x 96-in. battens with long dimension of battens parallel to short dimension of test deck with an on-center spacing of 3-in.<input type="checkbox"/> "Stone Coated Panels" mechanically fastened to the 1-in x 4-in. |

x 40-in. battens

METHOD

Class B fire tests were conducted on the above samples. These tests were conducted in accordance with the Test Standard ANSI/UL 790, "Tests for Fire Resistance of Roof Covering Materials," (ASTM E-108 and NFPA 256).

In the spread of flame and intermittent flame tests described in this Report, the temperature of the test flame, as measured by a No. 14 gauge chromel-alumel wire thermocouple located as described in ANSI/UL Standard 790, was found to be 1400 ± 50 F. The physical appearance of the test flame when the test apparatus was calibrated for flame temperature, was generally triangular in shape, being about 3 ft wide at the deck's leading edge and gradually narrowing to a width of approximately 6 in. at the top of the 52 in. long calibration deck, with licks of flame extending approximately another 1 ft.

The wind velocity required by ANSI/UL 790 was determined by taking readings on a smooth deck (40 in. wide and 52 in. long) midway up the deck at the center and 3 in. from each vertical edge with a vane type anemometer and timer. The velocity measured at an incline of 5 in./ft was found to be 1050 ± 50 ft/min ($12 \pm 1/2$ mi./h) with the carriage in position.

RESULTS

The results of these tests are summarized on the following pages:

SPREAD OF FLAME TEST

System No.	Slope of Deck, in./ft	Maximum Flame Spread, ft	Exposure of Roof Deck
1	5	5	NA
1	5	5	NA

NA - Not applicable for systems limited to noncombustible deck.

At no time during these tests were any flying flaming brands of roof covering material produced. Also, there was no significant lateral spread of flame from the path directly exposed to the test flame.

INTERMITTENT FLAME TEST - CLASS B

System No.	Class	Slope Of Deck, in./ft	Time of Smoke Underside, min:s	Asphalt Dripping Underside, min:s	Time of Glow Underside, min:s	Depth Of Char, in.	Duration Of Test, min
1	B	5	2:10	-	none	none	35:00
1	B	5	1:24	-	none	none	35:00

At no time during these tests were any flying flaming brands of the roof covering material produced or did exposure of the roof deck occur. Also, at no time during these tests were any sparks or flames noted on the underside of the deck.

BURNING BRAND TEST - CLASS B

System No.	Class	Slope Of Deck, in./ft	Time of Smoke Underside, min:s	Asphalt Dripping Underside, min:s	Time of Glow Underside, min:s	Depth Of Char, in.	Duration Of Test, min
2	B	5	4:10	3:02	none	none	20:08
2	B	5	3:15	2:53	none	none	20:00
2	B	5	3:27	3:06	none	none	20:00
2	B	5	2:10	2:32	none	none	20:00

At no time during these tests were any flying flaming brands of the roof covering material produced or did exposure of the roof deck occur. Also, at no time during these tests were any sparks or flames noted on the underside of the deck.

PRACTICABILITY:

The construction materials used in the roofing systems were readily installed by qualified workers with tools and methods commonly used for construction work of similar nature. Materials and installation procedures in accordance with those previously described in this Report are significant factors in the exterior fire performance of the construction.

CONCLUSION

The following conclusion represents the judgment of Underwriters Laboratories Inc. based upon the results of the examination; tests and data analysis presented in this Report, as they relate to established principles and previously recorded data.

The products covered by this Report are judged to be eligible for Classification and Follow-Up Service. The manufacturer is authorized to use the Laboratories' Classification Marking as shown below on such products, which comply with the Follow-Up Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only Underwriters Laboratories Inc considers those products, which properly bear the Laboratories' Classification Marking, as Classified.

CLASSIFICATION MARKING

The Classification Marking to be used with the stone-coated panels are illustrated below:

PREPARED ROOF COVERING MATERIALS FOR
ROOFING SYSTEMS
AS TO AN EXTERNAL FIRE EXPOSURE

CLASSIFICATION

Roofing System Classification will be promulgated as described below:

Formed steel and copper panel coverings, for installation as Class B prepared roof coverings. Limited to 15/32-in. min. plywood decks or spaced sheathing covered with one layer of Type G3 mineral surface cap sheet. Followed by nominal 2 in. x 2 in. battens strips mechanically fastened to the deck with the panels nailed to the batten strips.

Report by:

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File R21541
Project 04CA21754

August 18, 2004

REPORT

on

ROOFING SYSTEMS/PREPARED ROOF COVERING MATERIAL

Under The

CLASSIFICATION/LISTING PROGRAM

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