

APPROVAL REPORT

APPROVAL TESTING OF RUST GRIP AND SUPER THERM ROOF COATINGS OVER METAL PANEL ROOFS

Prepared for:

**Superior Products International II, Inc.
10835 West 78th Street
Shawnee, KS 66214**

**Project ID: 3016478
Class: 4470
Date: November 20, 2003**

**APPROVAL TESTING OF RUST GRIP AND
SUPER THERM ROOF COATINGS
OVER METAL PANEL ROOFS**

from

**Superior Products International II, Inc.
10835 West 78th Street
Shawnee, KS 66214**

I INTRODUCTION

- 1.1 Superior Products International II, Inc. submitted their RUST GRIP and SUPER THERM roof coatings to determine if they meet the Approval requirements of the **Standard** listed below when installed over metal panel roof covers.
- 1.2 This Report may be reproduced only in its entirety and without modification.
- 1.3 **Standard:**

Title	Class Number	Date
Approval Standard for Class 1 Roof Covers	4470	April, 1986

- 1.4 The examination consisted of ASTM E108-00 Spread of Flame testing as well as initial in plant quality control inspections of the manufacturing facilities that produce these products.
- 1.5 Tests show that the RUST GRIP and SUPER THERM roof coatings meet the Approval requirements of the **Standard** listed above.
- 1.6 **Listings:** The tested constructions meet the Approval criteria of FM Approvals when installed as specified in the **CONCLUSIONS** of this report. The product will be listed in the FM Approval Guide as follows:

Liquid Applied Roof Coverings

Trade Name: RUST GRIP
Substrate: Insulated or protected metal roof panels
Application: Brush, roller or spray applied at 0.5 gal/sq. (0.2 L/m²). The nominal dry thickness is 3 mils (0.08 mm).
ASTM E 108: Class A noncombustible at 2 in 12 slope

Trade Name: SUPER THERM
Substrate: Insulated or protected metal roof panels
Application: Brush, roller or spray applied at 1.0 gal/sq. (0.4 L/m²). The nominal dry thickness is 10 mils (2.5 mm).
ASTM E 108: Class A noncombustible at 2 in 12 slope

FM APPROVALS
3016478

II DESCRIPTION

- 2.1 RUST GRIP is a one part polyurethane coating that combines with atmospheric moisture to cure. Upon curing, it provides a protective coating with adhesion, flexibility and abrasion resistant properties. It is designed for application on prepared metal roof substrates. The application rate is 0.5 gal/sq (0.2 L/m²).
- 2.2 SUPER THERM is a combination of aliphatic urethanes, elastomeric acrylics, standard acrylics and resin additives in a water-borne formula. It is designed for application on prepared metal roof substrates. The application rate is 1 gal/sq (0.4 L/m²).
- 2.3 Proprietary formulations of the above products are on file at FM Approvals.
- 2.4 Production of the coatings used in this program were witnessed by a representative of FM Approvals.

III EXAMINATIONS AND TESTS

- 3.1 Samples were submitted for examination and testing as shown below. Test samples were prepared by FM Approvals personnel. All data is on file at FM Approvals under J.I 3016478 along with other documents and correspondence applicable to this program.
- 3.2 ASTM E108-00 Spread of Flame Tests
- 3.2.1 The fire tests from above the roof cover were conducted in accordance with ASTM E108-00 Spread of Flame Tests.
- 3.2.2 Sample size was 3-1/3 by 8 ft. (1.0 by 2.4 m).
- 3.2.3 The wind velocity over the top of the standard panel was adjusted to 12±0.5 mph (5.3±0.2 m/s).
- 3.2.4 Flame exposure: The flame was adjusted to 1400±50°F (760±28°C) for Class A tests. The flame temperature was measured by a thermocouple located 1 in. (25.4 mm) above the surface of the standard panel and 1/2 in. (13 mm) toward the flame source from the lower edge of the standard panel. The flame was applied to each test panel for 10 minutes.
- 3.2.5 During and after the application of the flame, each panel was observed for the distance of maximum flame spread, glowing brands and other damage.
- 3.2.6 Four (4) 3-1/3 by 8 ft. (1.0 by 2.4 m) test samples were prepared. The components and sequence of installation were as follows. All samples were allowed to cure for 28 days.

Sample No.1 and 2:

- painted metal panels were attached to an ASTM E108 test deck
- one coat of RUST GRIP coating was applied at a rate of 0.5 gal/sq (0.2 L/m²) using a ¼ in. (6 mm) nap roller

FM APPROVALS
3016478

- Sample No.3 and 4:**
- painted metal panels were attached to an ASTM E108 test deck
 - one coat of SUPER THERM coating was applied at a rate of 1.0 gal/sq (0.4 L/m²) using a ¼ in. (6 mm) nap roller

3.2.7 The results of the ASTM E108 Spread of Flame tests were as follows:

<u>Sample No.</u>	<u>Slope</u>	<u>Max. Flame Spread</u>	<u>Rating</u>
1	2 in 12	2 ft 7 in (0.8 m)	Class A
2	2 in 12	2 ft 8 in (0.8 m)	Class A
3	2 in 12	2 ft 4 in (0.7 m)	Class A
4	2 in 12	2 ft 3 in (0.7 m)	Class A

3.2.8 Flying brands and significant lateral flame spread were not observed during the tests.

IV MARKING

- 4.1 The manufacturer shall mark each packing container with the manufacturer's name and product trade name. In addition, the container must be marked with the Approval Mark of FM Approvals and the words "Subject to the conditions of Approval when installed as described in the current edition of the FM Approval Guide".
- 4.2 Markings denoting Approval by FM Approvals shall be applied by the manufacturer only within and on the premises of manufacturing locations that are under the FM Approvals Facilities and Procedures Audit program.
- 4.3 The manufacturer agrees that use of the FM Approvals name or Approval Mark is subject to the conditions and limitations of the Approval by FM Approvals. Such conditions and limitations must be included in all references to Approval by FM Approvals.

V FACILITIES AND PROCEDURES AUDITS

The Superior Products International II, Inc. manufacturing locations in Shawnee, KS and Pleasant Hill, MO will be subject to periodic audit inspections to determine that the quality and uniformity of the materials have been maintained and will provide the same level of performance as originally Approved. The facilities and quality control procedures in place have been found to be satisfactory to manufacture products identical to those examined and tested as described in this report.

VI MANUFACTURER'S RESPONSIBILITIES

- 6.1 To assure compliance with these procedures in the field, the manufacturer shall supply to the roofer such necessary instruction or assistance required to produce the desired performance achieved in the tests.

FM APPROVALS
3016478

- 6.2 The manufacturer shall notify FM Approvals of any planned change in the Approved product, prior to general sale or distribution, using Form 797, Approved Product Revision Report.

VII DOCUMENTATION

The following document was developed as a result of this program as an aid in conducting follow-up audits at manufacturing facilities. A copy is kept on file at FM Approvals.

Document	Issue or Revision	Description
FM Approvals Facilities and Procedures Audit Manual	November 2003	Provides instructions to follow-up auditors for conducting audits.

VIII CONCLUSIONS

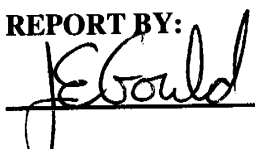
- 8.1 Test results indicate that the Superior Products International II, Inc. RUST GRIP and SUPER THERM roof coatings, when applied over properly prepared metal substrates, meet the Approval requirements of FM Approvals Standard 4470 for Class 1 roof constructions.
- 8.2 The roof coatings have satisfactorily met the requirements of the ASTM E108-00 Spread of Flame Tests when applied at the application rates described in this report.
- 8.3 Facilities and Procedures Audits of the Superior Products International II, Inc. facilities where these products are manufactured indicate that these locations have the necessary equipment, facilities, personnel and quality controls to produce the roof coatings examined in this report.
- 8.4 Continued Approval is dependent upon manufacture of the roof coatings in accordance with this report, satisfactory field experience, and acceptable quality control procedures as determined by follow-up Facilities and Procedures Audits.
- 8.5 Approval is effective when the Agreement that accompanies this report is signed and returned to FM Approvals.
- 8.6 Continued Approval will depend upon satisfactory field experience and periodic Facilities and Procedures Audits.

PROJECT DATA RECORD: 3016478

ORIGINAL TEST DATA: None

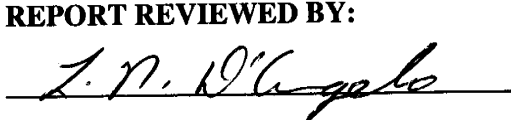
ATTACHMENTS: None

REPORT BY:



Jeffrey E. Gould
Senior Engineering Specialist

REPORT REVIEWED BY:



Leonard N. D'Angelo
Technical Team Manager - Materials Group