



Not to be distributed outside of FM Approvals and its affiliates except by Customer Member of the FM Global Group

APPROVAL REPORT

ENHANCED WIND AND HAIL RATINGS WITH RT 2035-3.0 POLYURETHANE FOAM USED IN CLASS 1 ROOF DECK CONSTRUCTION

Prepared for:
Resin Technology Company
A Division of the Henry Company
2270 Castle Harbor Place
Ontario, CA 91761

Project ID: 3032539

Class: 4470/4880

Date of Approval:

FEBRUARY 21, 2008

Authorized by:

Roger L. Allard

Roger L. Allard
Assistant Vice President

**ENHANCED WIND AND HAIL RATINGS WITH RT 2035-3.0 POLYURETHANE FOAM USED
CLASS 1 ROOF DECK CONSTRUCTION**

from

**Resin Technology Company
A Division of the Henry Company
2270 Castle Harbor Place
Ontario, CA 91761**

I INTRODUCTION

- 1.1 Resin Technology Company submitted their RT 2035-3.0 polyurethane foam to determine if it meets the Approval requirements of the **Standards** listed below for use in selected Class 1 roof deck constructions.
- 1.2 This Report may be reproduced only in its entirety and without modification.
- 1.3 **Standards:**

Title	Class Number	Date
Class 1 Roof Covers	4470	April, 1986
Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems	4880	October, 2005

- 1.4 All testing was conducted under FM Approvals Project IDs 3016938 and 3022955 sponsored by the Spray Polyurethane Foam Alliance and released for use in this program. Examination included ASTM E-108 Exterior Flame Spread Tests, Comparative Insulation Delamination Tests, Flammability Characterization Tests, UBC Standard 26-3 Full-Scale Room Test, Simulated Wind Uplift Pull Tests, and Simulated Hail Tests.
- 1.5 Tests show that RT 2035-3.0 polyurethane foam, as tested, meets the Approval requirements of the **Standards** listed above for use in Class 1 roof deck construction.
- 1.6 **Listings:** The tested constructions meet the Approval criteria of FM Approvals when installed in the **CONCLUSIONS** of this report and will be listed in RoofNav.

II DESCRIPTION

RT 2035-3.0 polyurethane foam is a spray insulation for use in Approved roof constructions. The foam has an apparent overall density of 3.0 lb/ft³ (48 kg/m³) and requires an Approved liquid applied roof cover to be applied to the top surface. It consists of an A component (isocyanate) and a B component (polyol) that are shipped to the job site in separate containers and mixed on site using special spray equipment for application to the roof.

FM APPROVALS
3032539

III EXAMINATIONS AND TESTS

Tests conducted were as required by FM Approvals Standard 4470 (1986) - Class 1 Roof Covers and Standard 4880 (2005) - Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels.

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.
- 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 REMARKS

- 5.1 The securement of the roof system must be enhanced at the building corners and perimeter as outlined in FM Global Property Loss Prevention Data Sheet 1-29.
- 5.2 The roof cover must be installed using a roof perimeter flashing system Approved by FM Approvals—see RoofNav.

VI FACILITIES AND PROCEDURES AUDITS

The Resin Technology Company manufacturing location in Ontario, CA is 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 product identical to that examined and tested as described in this report.

VII MANUFACTURER'S RESPONSIBILITIES

- 7.1 To ensure compliance with his 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.
- 7.2 The manufacturer shall notify FM Approvals of any planned change in the Approved products, prior to general sale or distribution, using Form 797, Approved Product Revision Report.

VIII DOCUMENTATION

New documents did not result from project.

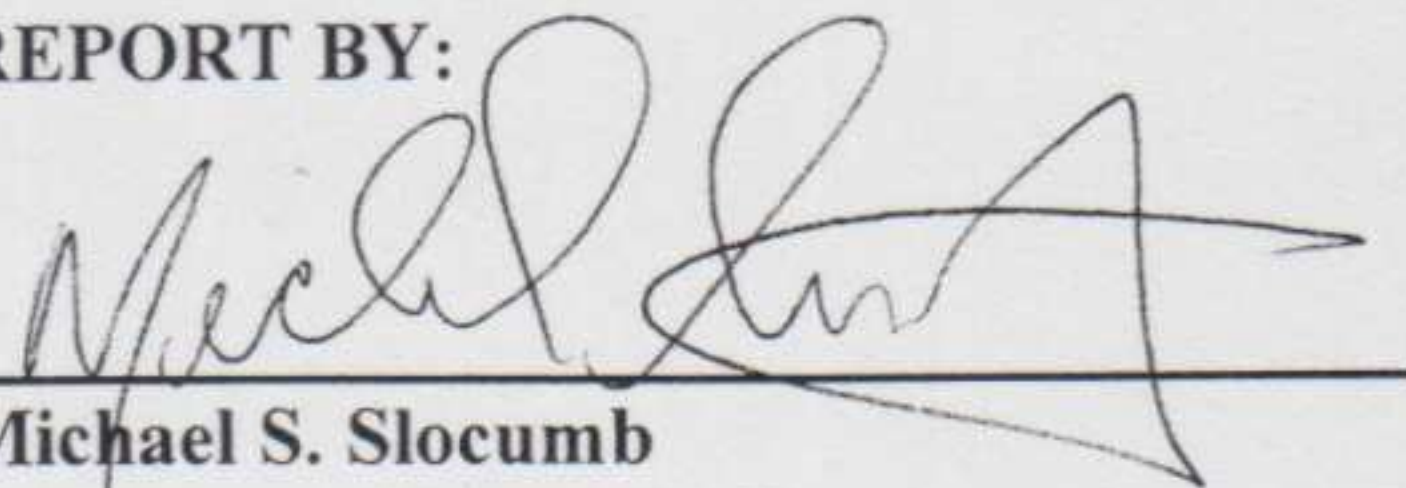
IX CONCLUSIONS

- 9.1 Test results from this program indicate that RT 2035-3.0 polyurethane foam meets the FM Approvals test requirements with the following changes from the current Approval:
- 9.1.1 The current wind rating for new constructions on steel deck is increased from Class 1-150 to Class 1-210 when the deck is fastened and prepared as follows:
- 9.1.1.1 Painted or galvanized steel deck is secured to min 1/4 in. (6 mm) supports, maximum 6 ft (1.8 m) o.c., with ITW Buildex Teks 4 or Teks 5 fasteners at 6 in. (152 mm) o.c. (every rib). Side laps are secured with ITW Buildex Teks 1 fasteners maximum 30 in. (762 mm) o.c. Deck is washed with a trisodium phosphate (TSP) and water solution, rinsed, and allowed to dry.
- 9.1.2 The current wind rating for new constructions on concrete deck is increased from Class 1-180 to Class 1-990.
- 9.1.3 The current wind rating for recover constructions over an existing built-up roof on concrete deck is increased from that of the existing roof to a maximum of Class 1-255 to that of the existing roof to a maximum of Class 1-270.
- 9.1.4 The current hail resistance rating for constructions with Permax 108 Elastomeric Coating liquid applied roof cover applied at 4 gal/sq (1.6 L/m²) and Permax 115 Elastomeric Coating liquid applied roof cover is changed from moderate hail (MH) to severe hail (SH).
- 9.2 Tests show that the tested roof constructions in and of themselves would not create a need for automatic sprinklers.
- 9.3 Since a duly signed Master Agreement is on file for this customer, Approval is effective as of the date of this report.
- 9.4 Continued Approval will depend upon satisfactory field experience and periodic Facilities and Procedures Audits.

FM APPROVALS
3032539

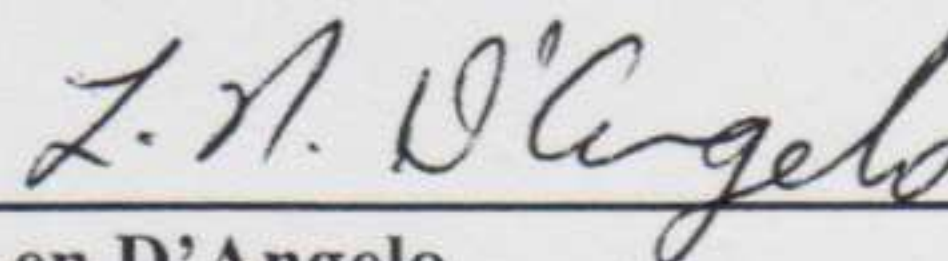
TESTING SUPERVISED BY: M. Slocumb
PROJECT DATA RECORD: 3032539
ORIGINAL TEST DATA: 3016938 and 3022955
ATTACHMENTS: none

REPORT BY:



Michael S. Slocumb
Engineer - Materials Group

REPORT REVIEWED BY:



Len D'Angelo
Technical Team Manager - Materials Group