

CLIENT: **Tuff Industries**
9570 Bottom Wood Lake Road
Lake Country, BC V4V 1S7

Test Report No: RJ3782-2-Rev.2

Original Issue Date: February 27, 2015
Revision Date: March 24, 2015

SAMPLE ID: The test samples are identified as: **Tufdek™ Vinyl Deck Flooring / Roofing**

SAMPLING DETAIL: Test samples were submitted directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Samples were received on January 21, 2015.

TESTING PERIOD: February 3, 2015 through February 20, 2015.

AUTHORIZATION: Signed QAI Test Proposal GH-2014-1216-01 by Bryan Hughes dated January 13, 2015.

TEST PROCEDURE: Conduct a limited series of Class A Non-Combustible deck Spread of Flame fire tests on the submitted samples in accordance with the methods and procedures outlined in ASTM Test Method E108-11, "Standard Test Methods for Fire Tests of Roof Coverings".

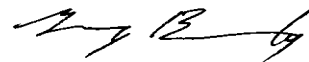
TEST RESULTS: The submitted sample **Met** the **Class A** requirements for application on Non-Combustible decks in accordance with ASTM E108-11.

Prepared By



David Royer
Laboratory Technician

**Signed for and on behalf of
QAI Laboratories**



Greg Banasky
Senior Test Technician

STORAGE OF COMPLETED TEST DECKS:

All test deck assemblies were stored indoors at temperatures not lower than 60°F (16°C) nor higher than 90°F (32°C) for the period of time necessary to cure the assembly components prior to testing. Test decks were stored such that each was surrounded by free circulating air.

A. Roof System and Test Deck Assembly Construction Details

The Spread of Flame test decks were built with the following construction details and in accordance with the ASTM E108-11 specifications for deck construction:

Lumber: Nominal 2" x 4" Douglas Fir, moisture content between 8-12%.

Deck: ½" PermaBase® Cement Board.

Joint Treatment: Tufdek™ Deck Patch Cement Floor Filler was trowel applied over all joints.

Adhesives: 1.) Tufdek™ Contact Adhesive Low VOC Solvent Adhesive was rolled onto the surface of the deck and the back side of the Tufdek™ Vinyl Deck Flooring / Roofing with a medium nap roller. The surfaces were allowed to dry until tacky and then the deck covering was applied to the test deck.

2.) Tufdek™ Trowel-On Latex Vinyl Adhesive was applied to the deck surface using a 1/16" notched adhesive spreader.

3.) Tufdek™ Roll-On Latex Vinyl Adhesive was applied to the deck surface using a medium nap glue roller

Deck Covering: Tufdek™ Vinyl Deck Flooring / Roofing.

B. Test Results

1. Spread of Flame – Class A (Two Test Decks)

Wind Velocity: 1056 ft/min ± 44 ft/min
Flame Temperature: 1400 ± 50° F
Test Deck Slope: ¼" per Horizontal Foot
Flame Application: 10 Minutes

Deck No. 1

Adhesive: Trowel-On Latex
Ignition Time: 21 seconds.
Maximum Spread of Flame: 2 ft.
Time to Maximum Spread: 56 seconds
Lateral Spread of Flame: None
Flame Front Recession: 1 ft.

Observations: After the ignition of the test sample surface the flame front progressed steadily to the maximum spread distance of 2 feet. The flame front would subsequently recede back to 1 foot during the ten minute test period.

Deck No. 2

Adhesive: Roll-On Latex
Ignition Time: 15 seconds.
Maximum Spread of Flame: 3 ft.
Time to Maximum Spread: 2 Minutes 0 seconds
Lateral Spread of Flame: None
Flame Front Recession: 0 ft.

Observations: After the ignition of the test sample surface the flame front progressed steadily to the maximum spread distance of 3 feet. The flame front did not recede back and held steady at 3 feet during the ten minute test period.

Deck No. 3

Adhesive: Contact
 Ignition Time: 18 seconds.
 Maximum Spread of Flame: 3 ft.
 Time to Maximum Spread: 56 seconds
 Lateral Spread of Flame: None
 Flame Front Recession: 2 ft.

Observations: After the ignition of the test sample surface the flame front progressed steadily to the maximum spread distance of 3 feet. The flame front would subsequently recede back to 1 feet during the ten minute test period.

Deck No. 4

Adhesive: Contact
 Ignition Time: 14 seconds.
 Maximum Spread of Flame: 2½ ft.
 Time to Maximum Spread: 1 Minute 27 seconds
 Lateral Spread of Flame: None
 Flame Front Recession: 1 ft.

Observations: After the ignition of the test sample surface the flame front progressed steadily to the maximum spread distance of 2½ feet. The flame front would subsequently recede back to 2 feet during the ten minute test period.

Through comparative testing the Contact Adhesive was determined to be the worst performing adhesive so that a second deck was constructed and tested using the Contact Adhesive.

Summary

Spread of Flame Deck	Adhesive	Maximum Flame Spread	Time to Max Spread (Minutes:Seconds)	Pass / Fail
1	Trowel-On Latex Vinyl Adhesive	2 Feet	0:56	Pass
2	Roll-On Latex Vinyl Adhesive	3 Feet	2:00	Pass
3	Contact Adhesive	3 Feet	0:56	Pass
4	Contact Adhesive	2.5 Feet	1:27	Pass

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Results: The submitted vinyl deck flooring / roofing **MET** the requirements for **Class A Spread Of Flame** compliance for Non-Combustible decks when tested in accordance with ASTM E108-11.

CONDITIONS OF ACCEPTANCE FOR CLASSIFICATION BY ASTM E108:

At no time during or after the intermittent flame, spread of flame or burning brand tests shall:

1. Any portion of the roof covering material be blown or fall off the test deck in the form of flaming or glowing brands that continue to glow after reaching the floor, or
2. The roof deck be exposed, or
3. Portions of the roof deck fall away in the form of particles that continue to glow after reaching the floor.
4. At no time during the Class C intermittent flame or Class C burning brand tests shall there be sustained flaming of the underside of the deck.

REVISION HISTORY

Revision Date: March 24, 2015

The Sample Id was changed,

From: **Tufdek™ PVC Vinyl Deck Flooring**

To: **Tufdek™ Vinyl Deck Flooring / Roofing.**

Two adhesives were added to the Roof System and Test Deck Assembly Construction Details on page 2

Two Test Decks with alternate adhesives were added to the report on pages 3 and 4.

The following statement was added on page 4: "Through comparative testing the Contact Adhesive was determined to be the worst performing adhesive so that a second deck was constructed and tested using the Contact adhesive."

A summary table was added on page 4.

This report RJ3782-2-Rev.2 supersedes and replaces any previous reports under the name RJ3782-2.

End of Report