

VESCOM AMERICA FIRE TEST REPORT

SCOPE OF WORK

NFPA 286 TESTING ON 20 OZ. TYPE II PVC WALLCOVERING WITH OSNABURG (POLYESTER/COTTON) BACKING WHEN INSTALLED TO AN INTERIOR WALL

REPORT NUMBER

G102951522SAT-010

TEST DATE(S)

06/02/08

ISSUE DATE

07/17/18

RECORD RETENTION END DATE

08/02/18

PAGES

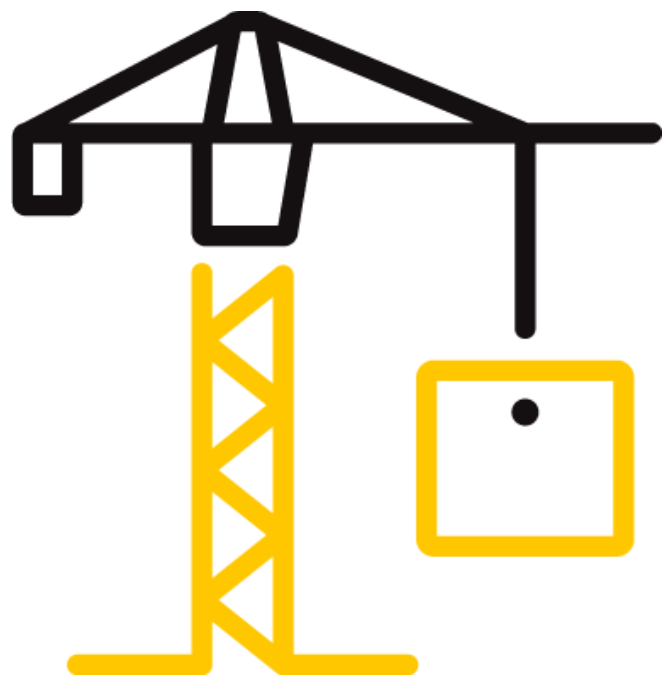
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TEST REPORT FOR VESCOM AMERICA

Report No.: G102951522SAT-010

Date: 07/18/18

REPORT ISSUED TO

Vescom America

2289 Ross Mill Rd.

Henderson, NC 27537

SECTION 1

SUMMARY

Intertek Building & Construction (B&C) was contracted by Vescom America, 2289 Ross Mill Rd Henderson, NC 27537 to evaluate the contribution of wall and ceiling interior finish to room fire growth of an assembly containing VA-WC-20-OS-17. Results obtained are tested values and were secured by using the NFPA 286 test method. A summary of test results is reported herein and the complete graphical test data is included in this report.



Product Type: 20 oz. Type II PVC wallcovering with Osnaburg (Polyester/Cotton) backing

Series/Model: VA-WC-20-OS-17

Summary of NFPA 286 Test Results

The assembly described and tested in this report **did** meet the requirements of acceptance criteria for interior wall or ceiling finishes of 2015 International Building Code Section 803.1.2.1 and NFPA 286 Annex C. Construction summary of the full assembly is located in Section 5 of this test report.

For INTERTEK B&C:

| | | | |
|----------------------|---|---------------------|---|
| COMPLETED BY: | Troy Bronstad Senior Associate Engineer | REVIEWED BY: | Herbert W. Stansberry Engineering Supervisor |
| TITLE: | – Fire Testing | TITLE: | |
| SIGNATURE: |  | SIGNATURE: |  |
| DATE: | 07/18/18 | DATE: | 07/19/18 |

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TEST METHOD

The assembly was evaluated in accordance with the following:

NFPA 286-15, *Standard Methods of Fire Tests for evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*

International Building Code (2015), *Chapter 8, Section 803.1.2.1*

SECTION 3

TEST PROCEDURE

A calibration test is run within 30 days of testing any material as specified in the standard. All instrumentation is zeroed, spanned and calibrated prior to testing. Testing was performed on 06/02/2017 in accordance with NFPA 286 test method. Ambient conditions prior to the initiation of the test were 81°F and 70% relative humidity. The specimen is installed and the ignition source is placed in a corner adjacent to the room opening. The ignition source for the test is a gas burner with a nominal 12 in. by 12 in. porous top surface of a refractory material. The burner used at this laboratory is filled with a minimum 4-inch layer of Ottawa sand. The collection hood exhaust blower is turned on and an initial flow is established. The gas sampling pump is turned on and the flow rate is adjusted. When all instruments are reading steady state conditions, the computer data acquisition system and video equipment is started. The gas supply to the burner is C.P. grade propane. The burner is capable of producing a gross heat output of 40±1 kW for five minutes followed by a 160±5 kW for ten minutes. The flow rate is metered throughout the test. The gas burners are controlled with mass flow meters to control the volume of gas to match the heat outputs of the standard. Ambient data is taken then the burner is ignited at a fuel flow rate that is known to produce 40 kW of heat output. This level is maintained for five minutes at which time the fuel flow is increased to the 160 kW level for a 10-minute period. During the burn period, all temperature, heat release and heat flux data is being recorded every 5 seconds. Physical flame propagation observations are recorded by the technician in conjunction with the test data. At the end of the fifteen minute burn period, the burner is shut off and all instrument readings are stopped. Post-test observations are made and this concludes the test. All observations are recorded in the table located in Section 6.

Material Source/Installation

The components of the test assembly were provided by the client except for the cre wall components that were acquired and assembled by Intertek-SAT personnel. The remaining components of the test assembly were provided by the client except for the core wall components that were acquired and assembled by Intertek-SAT personnel

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SECTION 4

LIST OF OFFICIAL OBSERVERS

| NAME | COMPANY |
|----------------|--------------|
| Troy Bronstad | Intertek B&C |
| Duane Scribner | Intertek B&C |
| Tony Jimenez | Intertek B&C |

SECTION 5

TEST ASSEMBLY DESCRIPTION

The interior dimensions of the floor of the fire room, when the specimens are in place, measures 8 feet, by 12 feet. The finished ceiling is 8 feet \pm 0.5 inches above the floor. The four walls are at right angles defining the compartment. The compartment contains a 30 \pm 0.25 by 80 \pm 0.25 inch doorway in the center of one of the 8' by 8' walls. No other openings are present to allow ventilation.

Gypsum Cladding

The full interior surface of the wall assemblies was clad with 5/8 in. thick gypsum board meeting ASTM C 1396. The gypsum board was fastened to the wall framing with #6 x 1-1/4 in. long, bugle head, self-drilling screws with a nominal spacing of 48 in; one in each corner. Drywall orientation was with the run edge running parallel with the framing and the cut edge perpendicular to the framing. All joints were spackled with joint compound. All fastener heads were spackled with joint compound.

Framing

The test room walls and ceiling were constructed with 20 GA galvanized steel, 3-5/8 in. wide structural studs spaced every 24 inches. The studs were fastened to 20 GA, 3-5/8 in. wide galvanized steel track with #6 x 1/2 in. long self-drilling fasteners in each flange. The orientation of the ceiling framing was with the ceiling framing studs running across the 8 ft. dimension of the test room.

Interior Finish

The test specimen consisted of a 20 oz. Type II PVC wallcovering with Osnaburg (polyester/cotton) backing applied to 3/8" thick gypsum wall boards using ROMAN Pro 880 ultra-clear adhesive. The specimen was applied to the room in a vertical orientation. After application, the samples were allowed to cure in a conditioning room at 70°F \pm 2°F and 50% relative humidity \pm 5% for 14 days.

The specimen was fastened to the gypsum walls and studs lining the room with self-drilling drywalls screws applied at four corners of panels. The Panels were fastened to the walls such that the wall covering would be free to delaminate.

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SECTION 6

TEST RESULTS

Test Date: 06-02-17

Lab Temperature: 81°

Lab Relative Humidity: 70%

| TEST OBSERVATIONS | |
|-------------------|--|
| Time (Min:Sec) | Observations |
| 00:00 | Ignition of the burner. Heat output set at 40kW |
| 00:07 | There was ignition of facer in burn corner |
| 00:18 | Flame tips 7ft vertically in corner above burner |
| 00:54 | Flaming drops |
| 01:27 | Flames recede back to burner |
| 02:20 | No change |
| 05:00 | Heat output was increased to 160kW |
| 05:13 | Horizontal flames at 5ft back and side wall |
| 05:14 | The smoke density increases |
| 05:15 | Flaming drops |
| 06:11 | Flame recede back to burner |
| 06:13 | Decrease in smoke |
| 10:00 | No change |
| 12:00 | No change |
| 14:00 | No change |
| 15:00 | The gas is turned off, testing complete |

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| 2015 IBC SECTION 803.1.2.1 & NFPA 286 ANNEX C PERFORMANCE CRITERIA | TEST OBSERVATIONS | PASS/FAIL |
|--|--|-------------|
| During 40 kW exposure, flames should not spread to the ceiling. | Flames did not spread to the ceiling during the 40kW exposure. | PASS |
| During the 160 kW exposure, the interior finish should not spread to the outer extremity of the sample on any wall or ceiling | Flames propagation to the outer extremities did not occurred during the 160kW exposure. | PASS |
| <p>During the 160 kW exposure, the interior finish should not flashover as defined by NFPA 286.</p> <ul style="list-style-type: none"> •Peak Heat Release > 1 MW •Floor Heat Flux > 20 kW/m² •Average Upper Layer Temperature > 1,112°F •Flames exiting doorway •Auto ignition of Paper Target <p>Flashover is considered to have occurred when any two of the above criteria were met during the test.</p> | <ul style="list-style-type: none"> •Peak Heat Release = 257 kW •Max Floor Heat Flux = 2.3 kW/m² •Max Average Upper Layer Temperature = 809°F •No Flames exited doorway •The flashover indicators did not ignite. | PASS |
| The peak rate of heat release throughout the NFPA 286 test should not exceed 800 kW. | The peak heat release rate was 257 kW | PASS |
| The total smoke released throughout the NFPA 286 test should not exceed 1,000 m ² . | The total smoke released during the entirety of the test was 20.3 m ² | PASS |

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SECTION 6 PHOTOGRAPHS

Photo No. 1
Pretest photo



Photo No. 2
Start of test 40kW



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Photo No. 3
40kW



Photo No. 4
Gas flow 160kW



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Photo No. 5
End of test



Photo No.6
Posttest photo



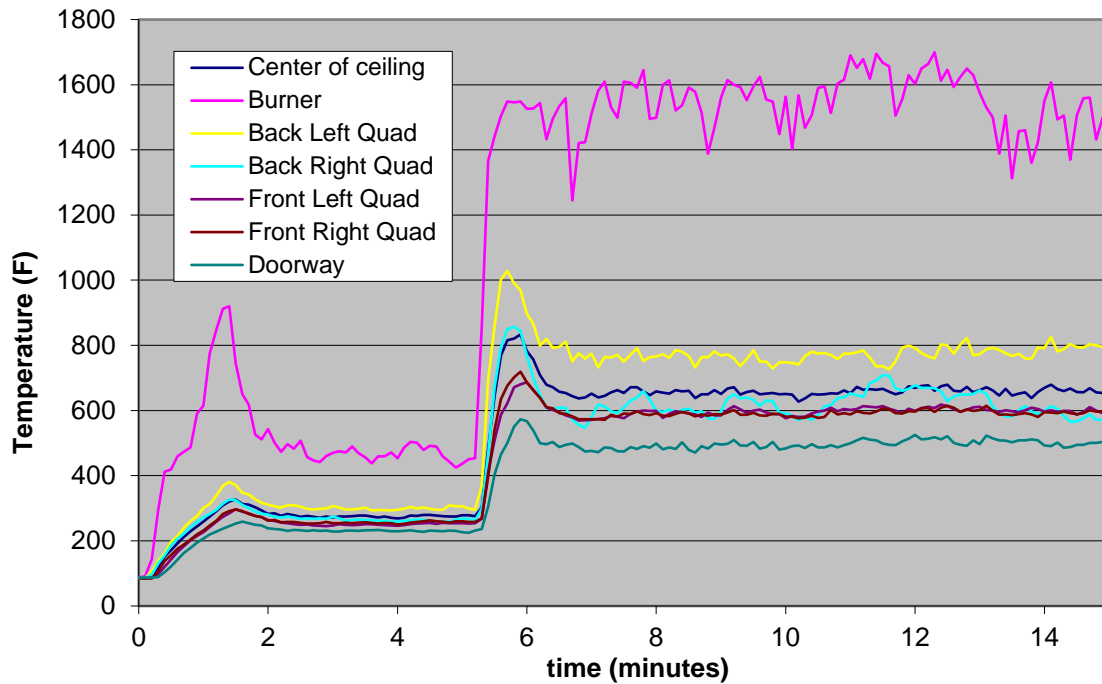
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SECTION 8 GRAPHS

Graph No. 1
Thermocouple Data



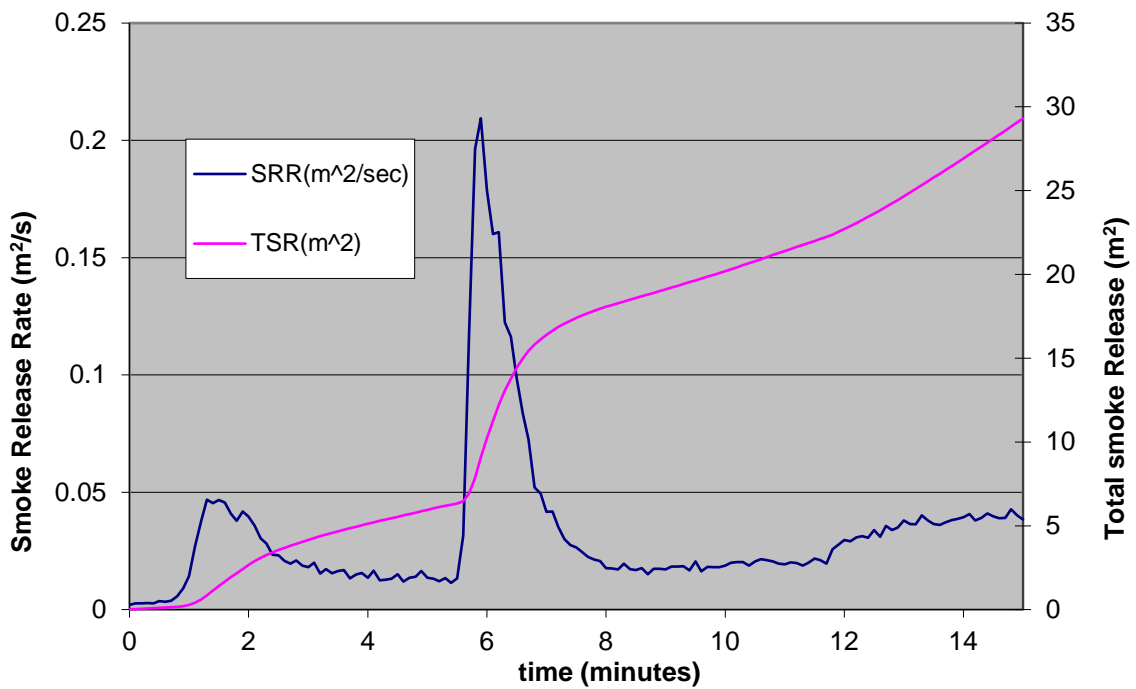
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Graph No. 2

Smoke Release



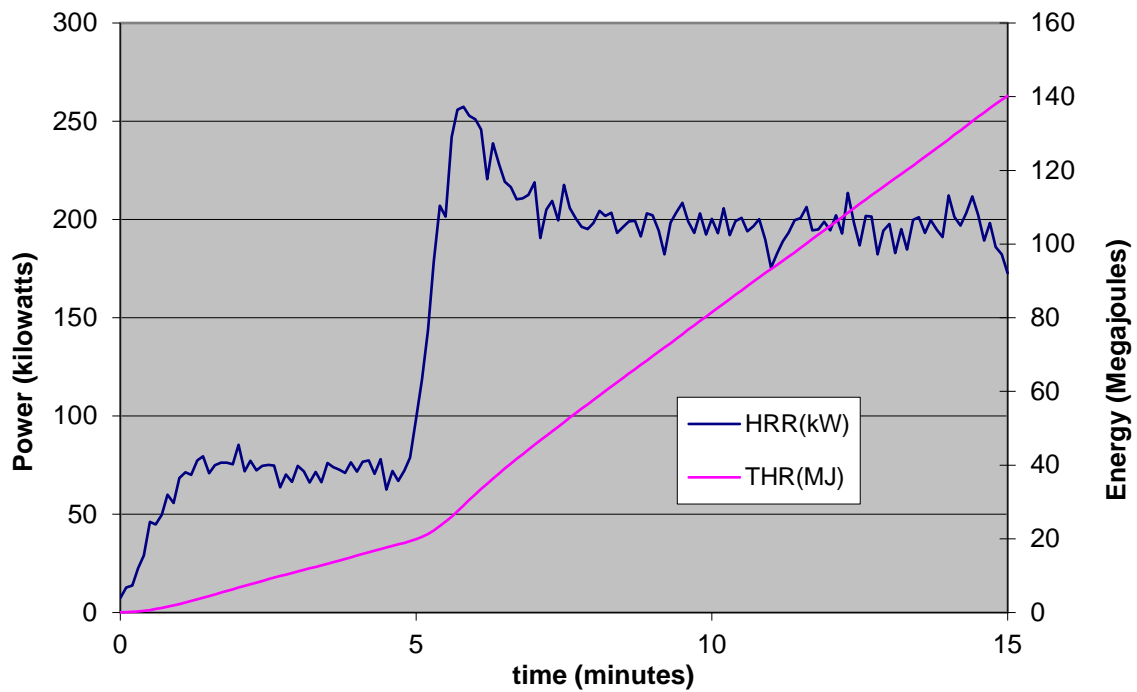
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Graph No. 3

Heat Release



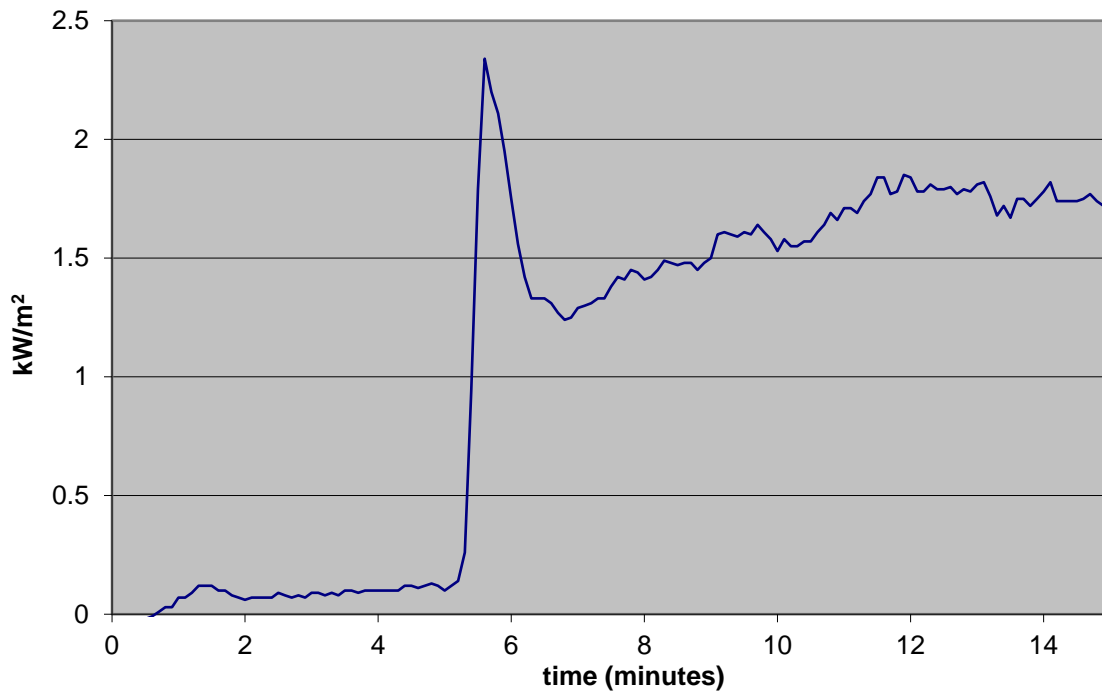
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Graph No. 4

Radiant Heat





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16015 Shady Falls Road
Elmendorf, Texas 78112

Telephone: 210-635-8100
Facsimile: 717-764-4129
www.intertek.com/building

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SECTION 9

REVISION LOG

| REVISION # | DATE | PAGES | REVISION |
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| 0 | 07/18/18 | N/A | Original Report Issue |