

VESCOM AMERICA FIRE TEST REPORT

SCOPE OF WORK

NFPA 286 TESTING ON 20 OZ. TYPE II PVC WALLCOVERING WITH HEAVY COTTON BACKING WHEN INSTALLED TO AN INTERIOR WALL .

REPORT NUMBER

G102951522SAT-012

TEST DATE(S)

02/27/18

ISSUE DATE

03/01/17

RECORD RETENTION END DATE

03/01/28

PAGES

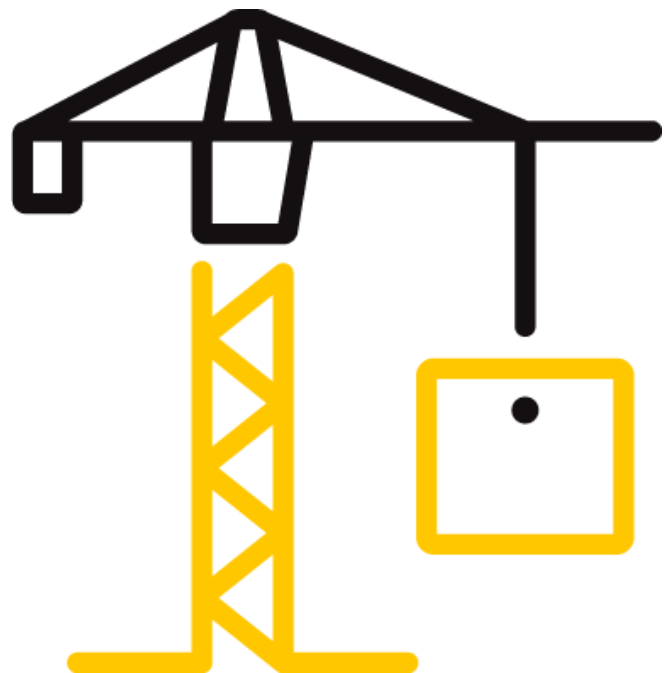
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TEST REPORT FOR VESCOM AMERICA

Report No.: G102951522SAT-012

Date: 03/01/17

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-HC-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 Heavy Cotton backing

Series/Model: VA-WC-20-HC-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
TITLE: – Fire Testing

SIGNATURE:



DATE: 02/28/18

REVIEWED BY:

Herbert W. Stansberry
Engineering Supervisor

TITLE:



SIGNATURE:

DATE: 03/02/18

aaa:ddr

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SECTION 2

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 02/27/2018 in accordance with NFPA 286 test method. Ambient conditions prior to the initiation of the test were 73°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.

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SECTION 3 (Continued)

TEST PROCEDURE

Material Source/Installation

The 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. 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

SECTION 4

LIST OF OFFICIAL OBSERVERS

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

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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 Heavy Cotton backing applied to 5/8" 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:

Lab Temperature: 73

Lab Relative Humidity: 70

TEST OBSERVATIONS	
Time (Min:Sec)	Observations
00:00	Ignition of the burner. Heat output set at 40kW
00:22	There was ignition of facer in burn corner
00:32	Light smoke was visible
01:02	The density of smoke is Increasing
01:22	Pieces of charred facer in burn corner are falling to floor.
05:00	Heat output was increased to 160kW
05:20	Increase in smoke – pieces of facer falling to floor
05:30	The smoke density increases
05:54	Decrease in smoke
06:19	Flame tips recede back to 2-3ft
09:23	Facer is consumed 8ft vertically above burner and 3ft horizontally along ceiling
10:00	Intermittent flaming at 7ft vertically back and side wall, burner side
12:00	No change
14:00	There is blistering of facer throughout the top section of room
15:00	The gas is turned off, testing complete

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SECTION 6 (Continued)

TEST RESULTS

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 = 262.2 kW •Max Floor Heat Flux = 2.2 kW/m² •Max Average Upper Layer Temperature = 799.1°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 262 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 8.6 m ²	PASS

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SECTION 7

PHOTOGRAPHS



Photo No. 1
Pre test photo



Photo No. 2
Start of test 40kW

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Photo No. 3
Increased Gas flow 160kW



Photo No. 4
Test photo

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Photo No. 5
End of test



Photo No.6
Post Test photo

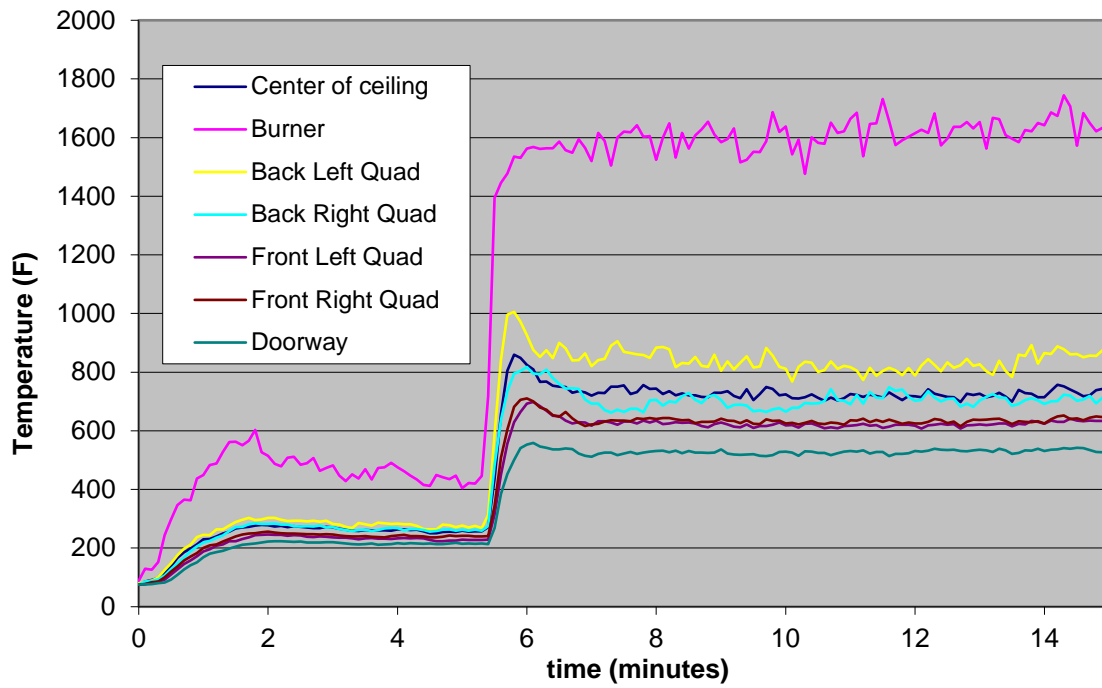
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SECTION 8 GRAPHS

Thermocouple Data

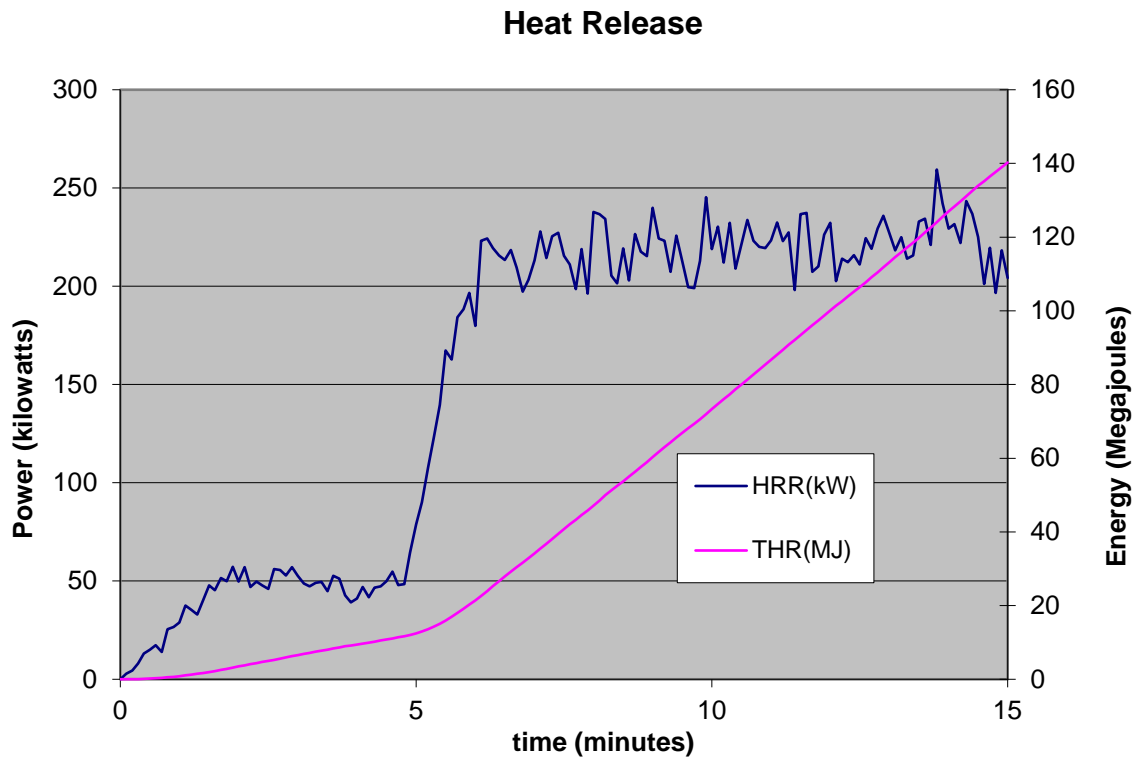


Graph No. 1

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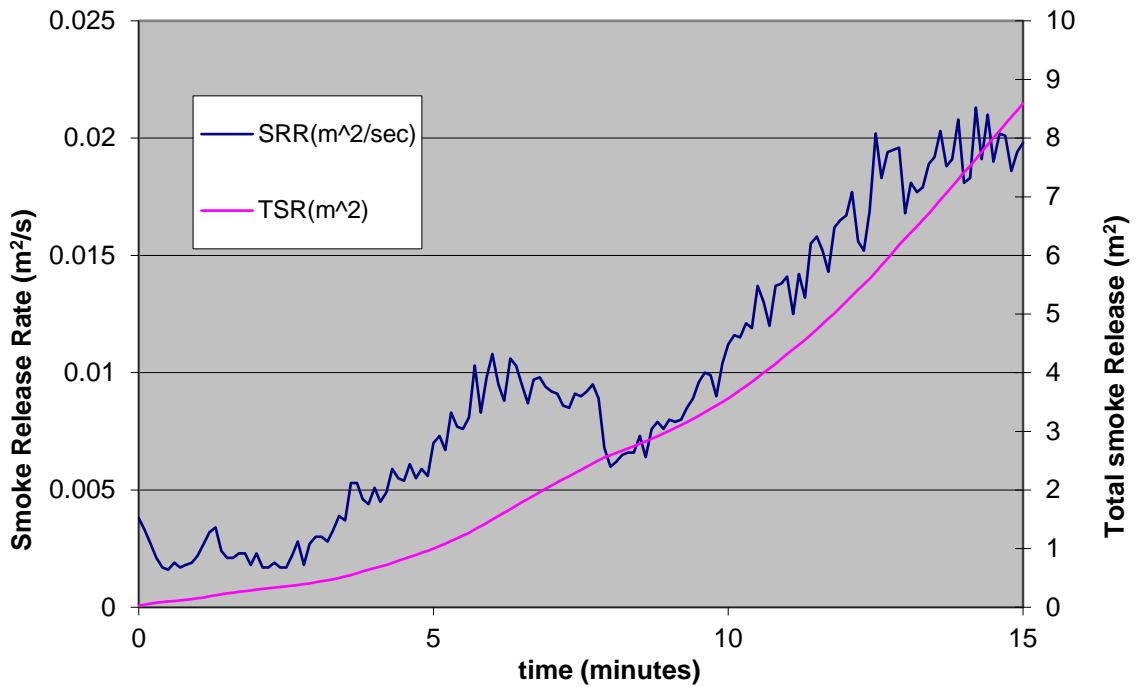
Graph No. 2

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Smoke Release



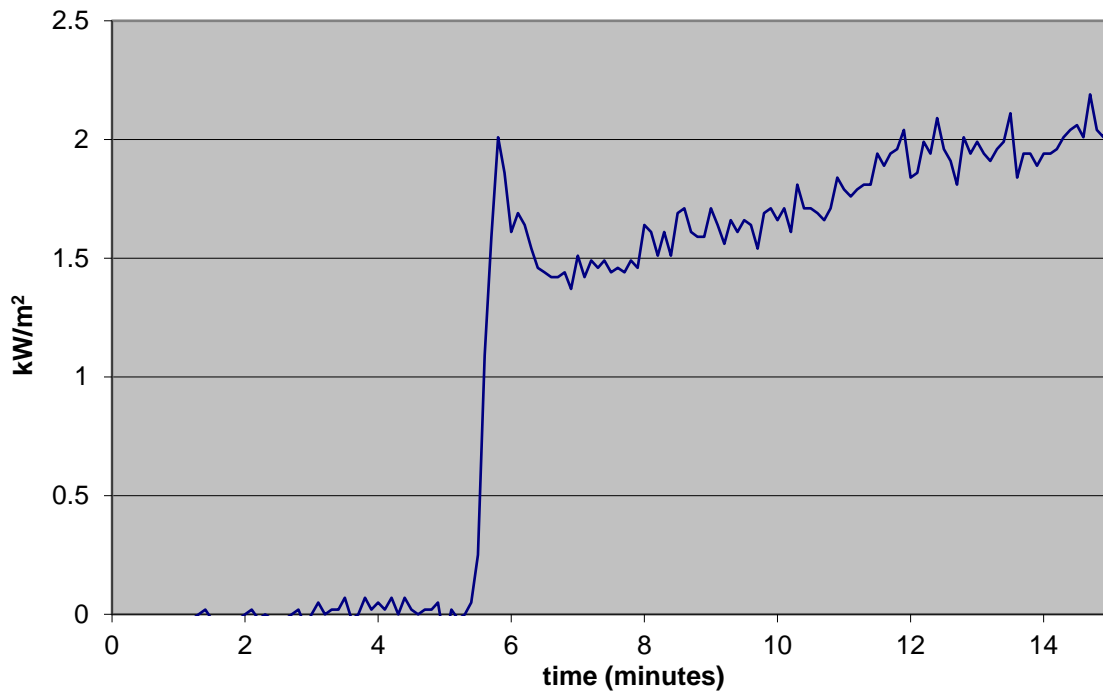
Graph No. 3

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Radiant Heat



Graph No. 4



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SECTION 9

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	03/01/17	N/A	Original Report Issue