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**RENDERED TO**

Vescom America Inc  
2289 Ross Mill Road  
Henderson, NC 27536

PRODUCT EVALUATED: VA-PVCWC-35-LC-16, Type III wall covering  
EVALUATION PROPERTY: Heat Release, Flame Spread

**Report of testing VA-PVCWC-35-LC-16, Type III wall covering for compliance with the applicable requirements of the following criteria: *NFPA 286 (2015 Edition) Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, and 2006 IBC Section 803.2.1. / 2009 IBC Section 803.1.2 and Section 2603.9 / 2012 IBC Section 803.1.2 and Section 2603.10 Special approval for Thermal Barrier Alternatives***

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**TEST REPORT**

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## 2 Introduction

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Intertek Testing Services NA (Intertek) has conducted testing for Vescom America Inc on a VA-PVCWC-35-LC-16, Type III wall covering. Testing was performed to evaluate heat release and flame spread properties when subjected to specific ignition conditions. Testing was conducted in accordance with NFPA 286 (2015 Edition) Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, and 2006 IBC Section 803.2.1. / 2009 IBC Section 803.1.2 and Section 2603.9 / 2012 IBC Section 803.1.2 and Section 2603.10 Special approval for Thermal Barrier Alternatives. This evaluation was performed on January 12, 2017.

## 3 Test Samples

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### 3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on January 12, 2017. Intertek Sample ID#SAT1612051338-002.

### 3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The base room consists of 3-5/8", 20 gauge studs, at 24" oc. The interior of the studs and joists were covered with 5/8" thick, Type X, gypsum board.

The test specimen consisted of a VA-PVCWC-35-LC-16, Type III wall covering applied to 5/8" thick gypsum wall boards using ROMAN ECO 788. 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 ±2°F and 50% relative humidity ± 5% for 14 days.

The specimen was fastened to the gypsum walls and studs lining the room with drywalls screws applied at 48" o.c. The Panels were fastened to the walls such that the wall covering would be free to delaminate.

Final interior dimensions were 8 feet high, 8 feet wide and 12 feet deep.

## 4 Testing and Evaluation Methods

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This standard describes a method for determining the contribution of textile wall and ceiling coverings to room fire growth during specified fire exposure conditions. This method is not intended to evaluate the fire endurance of assemblies, nor is it able to evaluate the effect of fires originating within the wall assembly. The method is not intended for the evaluation of floor finishes.

This method is to be used to evaluate the flammability characteristics of finish wall and ceiling coverings when such materials constitute the exposed interior surfaces of buildings. This test method does not apply to fabric covered less than ceiling height, freestanding, prefabricated panel furniture systems or demountable, relocatable, full-height partitions used in open building

interiors. Freestanding panel furniture systems include all freestanding panels that provide visual and/or acoustical separation and are intended to be used to divide space and may support components to form complete work stations.

This fire test measures certain fire performance characteristics of finish wall and ceiling covering materials in an enclosure under specified fire exposure conditions. It determines the extent to which the finish covering materials may contribute to fire growth in a room and the potential for fire spread beyond the room under the particular conditions simulated. The test indicates the maximum extent of fire growth in a room, the rate of heat release, and if they occur, the time to flashover and the time to flame extension beyond the doorway following flashover. It does not measure the fire growth in, or the contribution of, the room contents. Time to flashover is defined herein as either the time when the radiant flux onto the floor reaches  $20 \text{ kW/m}^2$  or the temperature of the upper air reaches  $600^\circ\text{C}$ . A pair of crumpled single sheets of newspaper is placed on the floor 2 feet out from the center of the rear wall and front walls to determine flashover. The spontaneous ignition of this newspaper provides the visual indication of flashover.

The potential for spread of fire to other objects in the room, remote from the ignition source, is evaluated by measurements of:

1. The total heat flux incident on the center of the floor.
2. A characteristic upper-level gas temperature in the room.
3. Instantaneous net peak rate of heat release.

The potential for the spread of fire to objects outside the room of origin is evaluated by the measurement of the total heat release of the fire.

## TEST EQUIPMENT AND INSTRUMENTATION

### IGNITION SOURCE

The ignition source for the test is a gas burner with a nominal 12- by 12-inch 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 top surface of the burner through which the gas is applied is positioned 12 inches above the floor. The burner is placed in contact with both walls in the corner of the room opposite from the door.

The gas supply to the burner is C.P. grade propane. The burner is capable of producing a gross heat output of  $40 \pm 1 \text{ kW}$  for five minutes followed by a  $160 \pm 5 \text{ kW}$  for ten minutes. The flow rate is metered throughout the test.

### COMPARTMENT GEOMETRY AND CONSTRUCTION

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.

## PROCEDURE

### SUMMARY OF METHOD

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. The specimen is installed and the diffusion burner is placed. The collection hood exhaust duct 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. 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 6 seconds. 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 damage is documented after the test is over, using descriptions, photographs and drawings, as is appropriate.

#### 4.1. TEST STANDARD

*NFPA 286 (2015 Edition) Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, and 2006 IBC Section 803.2.1. / 2009 IBC Section 803.1.2 and Section 2603.9 / 2012 IBC Section 803.1.2 and Section 2603.10 Special approval for Thermal Barrier Alternatives*

## 5 Testing and Evaluation Results

### 5.1. RESULTS AND OBSERVATIONS

#### FIRE TESTS

The test was started at 11:40 a.m. on January 12, 2017. The ambient temperature was 72°F with a relative humidity of 63%. The data acquisition system was started and the burner was ignited. Events during the test are described below:

| TIME<br>(min:sec) | OBSERVATION  |
|-------------------|--|
| 0:00              | Ignition of burner. Heat output set to 40 kW.            |
| 0:14              | Discoloration  |
| 0:26              | Ignition of wallcovering 2ft vertically above burner     |
| 0:40              | Light smoke flame tips 7ft                               |
| 0:57              | Flaming 3ft vertically above burner                      |
| 1:25              | Flames recede to 6ft                                     |
| 1:35              | Flame recede to 5ft                                      |
| 2:12              | Vertical flame tips recede to 4ft in corner above burner |
| 2:20              | Flaming on wallcovering depleted                         |
| 5:00              | Increase gas flow to 160kW                               |
| 5:18              | Horizontal flame tip 5ft                                 |



|       |                            |
|-------|----------------------------|
| 5:20  | Increase in smoke          |
| 5:30  | Heavy black smoke          |
| 5:40  | Horizontal Flaming 4-1/2ft |
| 6:10  | Reduction in smoke         |
| 6:20  | Flames recede to corner    |
| 7:20  | No change                  |
| 10:00 | No change                  |
| 12:00 | No change                  |
| 15:00 | Gas off – Test terminated  |

During the 40kW exposure, flames did not spread to the ceiling;

During the 160 kW exposure, flames on the *interior finish* did not spread to the outer extremity of the sample on any wall or ceiling,

Flashover, as defined in NFPA 286, did not occur,

The peak rate of heat release throughout the NFPA 286 test did not exceed 800 kW, and

The total smoke released throughout the NFPA 286 test did not exceed 1,000 m<sup>2</sup>.

## 6 Conclusion

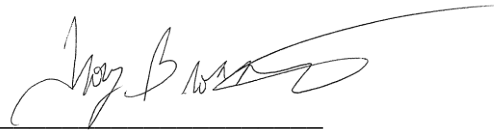
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NFPA 286 does not publish pass/fail criteria. One must consult the codes to determine pass fail.

This specimen **met** the criteria set forth in *the NFPA 286 (2015 Edition) Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, and 2006 IBC Section 803.2.1. / 2009 IBC Section 803.1.2 and Section 2603.9 / 2012 IBC Section 803.1.2 and Section 2603.10 Special approval for Thermal Barrier Alternatives*

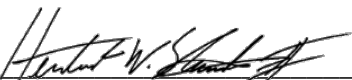
### INTERTEK TESTING SERVICES NA

Reported by:



Troy G. Bronstad  
**Senior Associate Engineer**

Reviewed by:

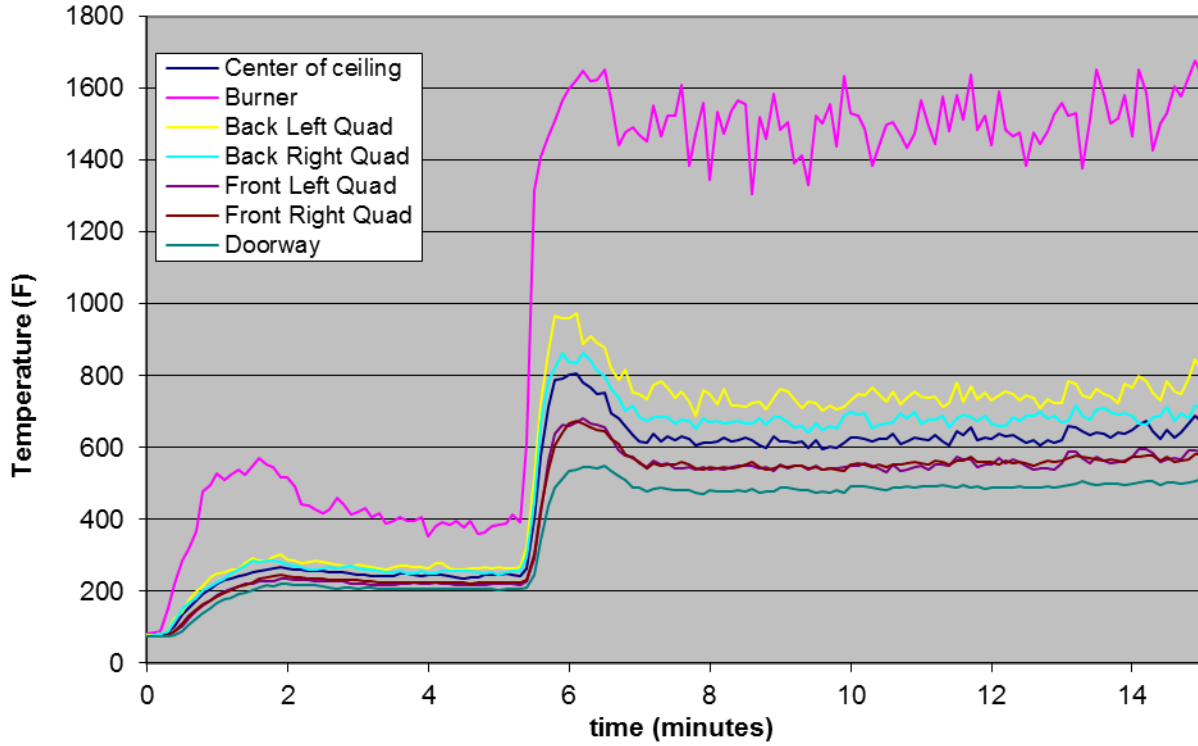


Herbert W. Stansberry II  
**Engineering Supervisor**

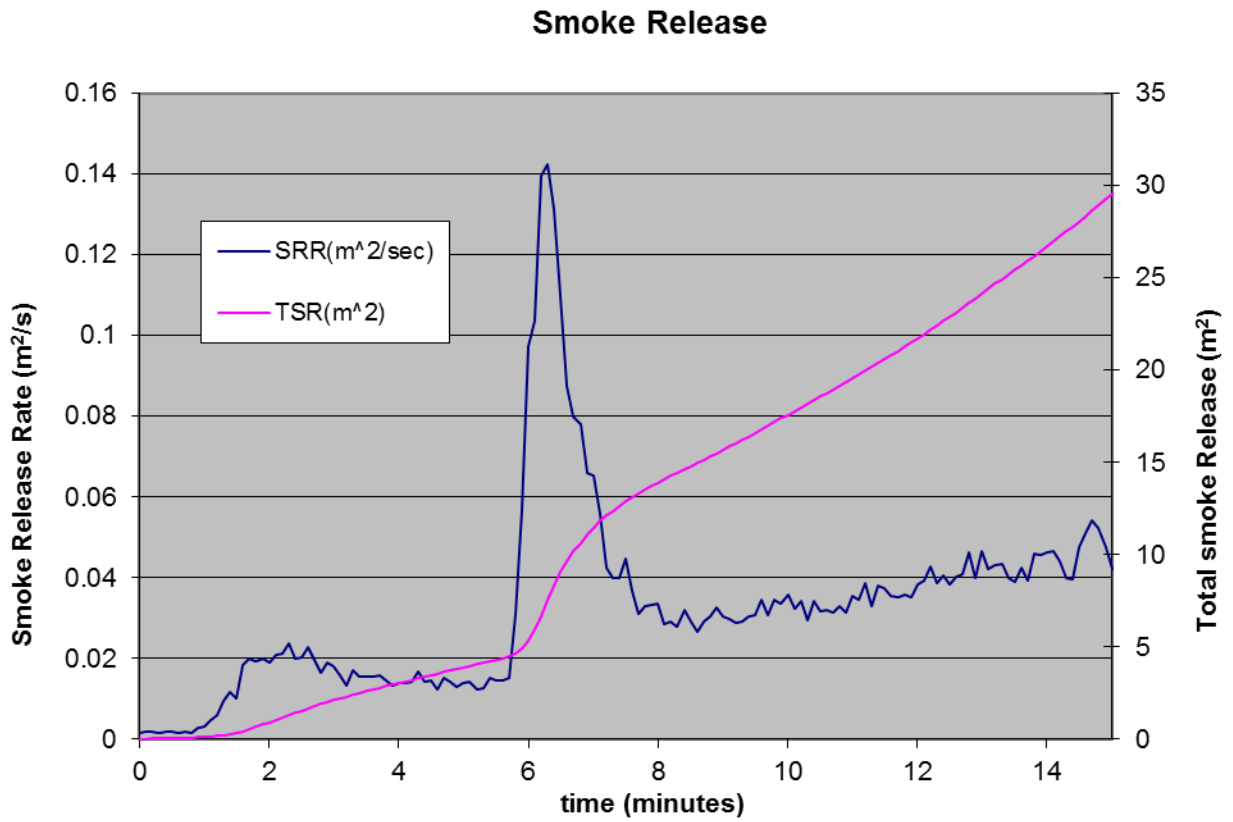
## APPENDIX A

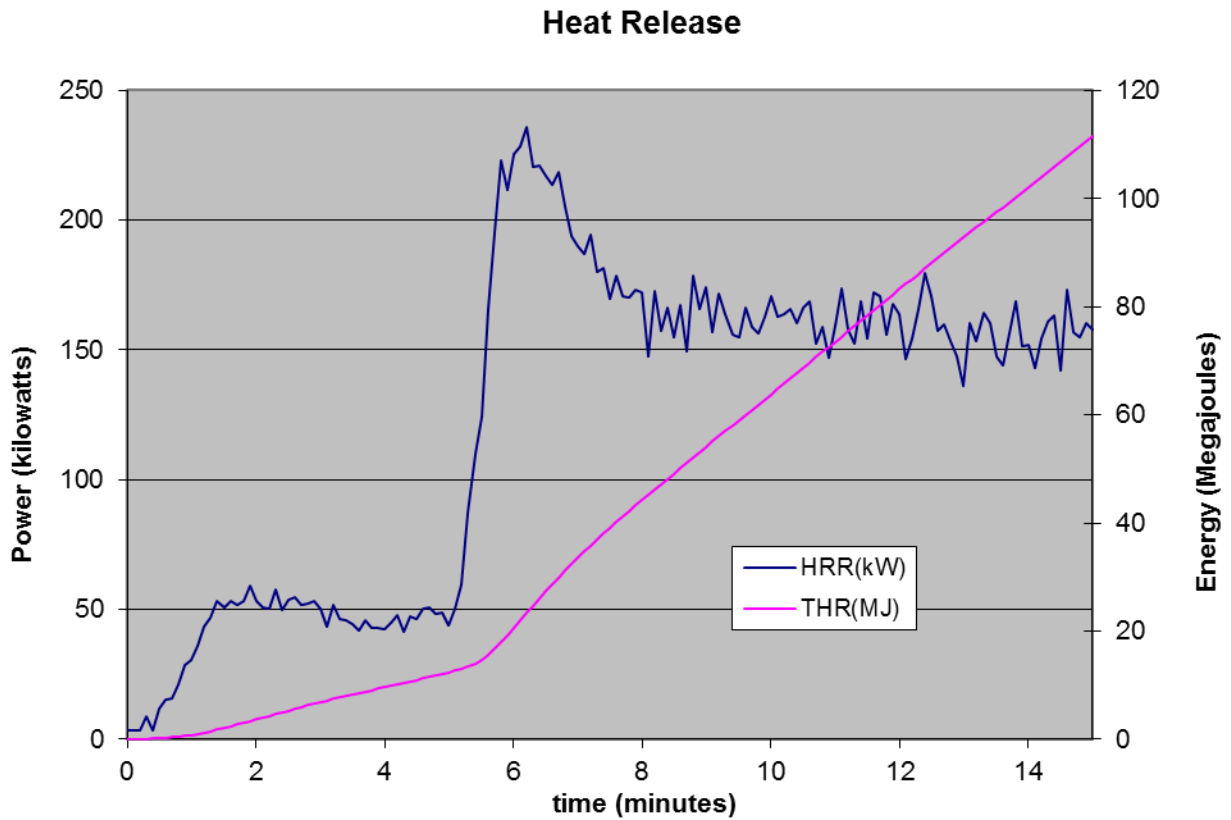
Test Data

### Thermocouple Data

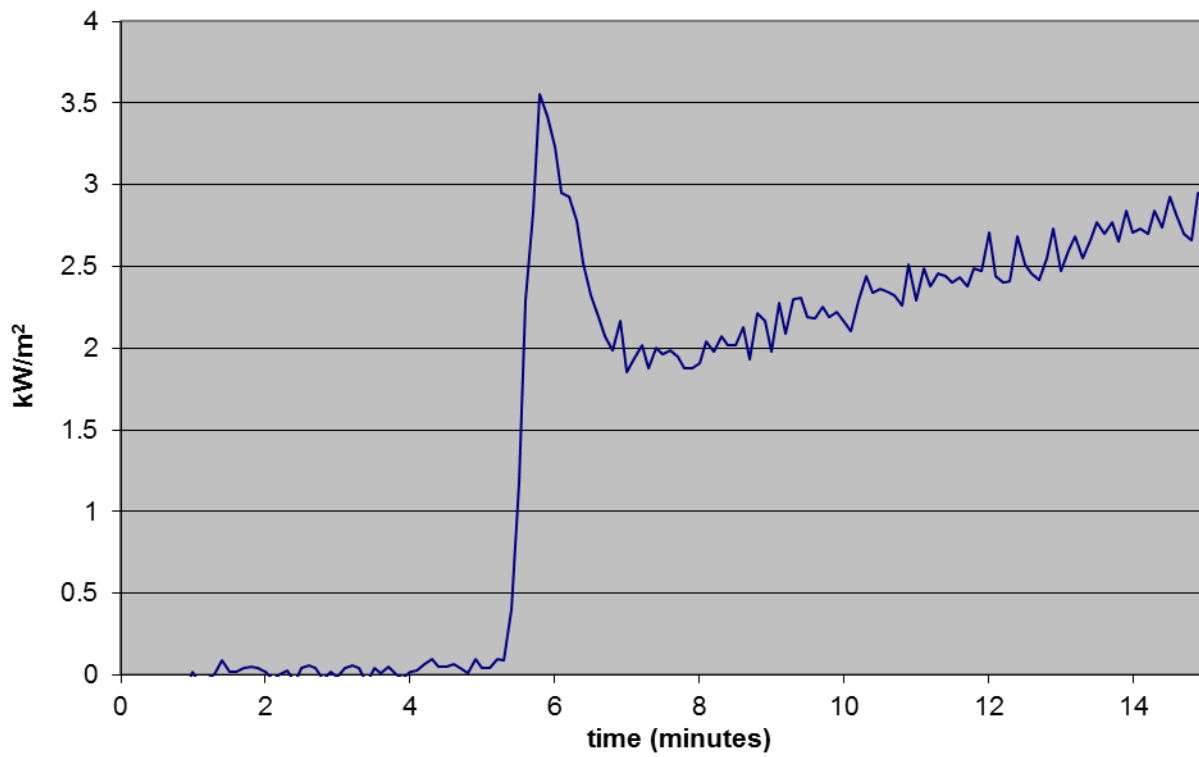








### Radiant Heat



## APPENDIX B

Photographs



Pre-test photo



Test photo



Test photo



Test photo



Test photo



Test photo



Test photo



Test photo





Test photo



Post test photo

## CALIBRATED EQUIPMENT USED FOR TESTING

| Description       | Serial No.  | Calibration Due Date |
|-------------------|-------------|----------------------|
| DAQ               | 046E016     | 03-28-17             |
| Transducer        | 3936716     | 05-04-17             |
| Radiometer        | 129722      | 10-18-17             |
| Stop Watch        | 151950603   | 12-17-17             |
| Thermo Hygrometer | 140048562   | 08-19-17             |
| Flow Gauge        | 63721010005 | 09-16-17             |
|                   |             |                      |

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## REVISION SUMMARY

| <b>DATE</b>      | <b>SUMMARY</b>           |
|------------------|--------------------------|
| January 13, 2017 | First issue. No revision |
|                  |                          |
|                  |                          |