



HPVA LABORATORIES

1825 Michael Faraday Drive, Reston, VA 20190-5350 703-435-2900

The test report attached verifies the fire performance for Armstrong Sheet Flooring. The product tested is representative of, but may not be identical to the product you are purchasing. Changes in product formulation that occur for a variety of reasons may cause fluctuations in results. The above referenced data is representative of the current formulation of these products. Specifications and interpretation of fire test methods are subject to ongoing development. To assure that the information continues to be current, it is suggested that you request product certification for a specific project. The certification will reference the current applicable independent laboratory test reports.

Report On
Surface Burning Characteristics of Flooring, Floor Coverings, and
Miscellaneous Materials and Assemblies
As Determined By
CAN/ULC S102.2 Test Method

PREPARED FOR:
Armstrong World Industries
Lancaster, PA
TEST NUMBER: T-14721R
Armstrong Commercial Vinyl Composition Tile (VCT)

Date of Issue:
1/28/2015

Date of Revision:
4/11/2017





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I. SCOPE

This report contains the reference to the test method, purpose, test procedure, rounding procedures, preparation and conditioning of specimens, description of materials, test and post test observation data, and test results.

II. TEST METHOD

The test was conducted in accordance with CAN/ULC S102.2; "Standard Method of Test For Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies"

III. PURPOSE

The purpose of the test is to determine the relative surface burning characteristics of the test material under specific test conditions. Results are given for flamespread and smoke developed indicies. The values obtained from burning the test material represent a comparison with that of 6mm inorganic reinforced cement board expressed as zero and red oak flooring expressed as 100.

The flamespread results of these tests are frequently used by building code officials and regulatory agencies in the acceptance of interior finish material for various applications. This flamespread classification system is based on the premise that the higher the flamespread numbers, the greater the fire spread potential. The actual relationship between the numbers developed under this test and life safety from fire has not been adequately established.

IV. TEST PROCEDURE NOTES

The furnace was preheated to a minimum of 85°C as measured by an 18 AWG thermocouple embedded in cement 3mm" below the wall surface of the chamber, 7090mm from the centerline of the ignition burners. The furnace was then cooled to 40°C (+/- 3°C) as measured by a thermocouple embedded 3mm below the wall surface of the test chamber 4000mm from the fire end. Prior 10-minute tests with 6mm inorganic reinforced cement board provided the zero reference for flamespread. At least once a year 10-minute tests with unfinished select grade red oak flooring provided for the 100 reference for flamespread and smoke developed as noted in Section III.

A. FLAMESPREAD

The flamespread distance is observed and recorded at least every 15 seconds or every 2 feet of progression. The peak distance is noted at the time of occurrence. The flamespread distance is plotted over time. The total area under the flamespread distance-time curve is determined; flame front recessions are ignored. The flamespread is then calculated as a function of the area under the curve relative to the standard red oak curve area. The value for flamespread classification for the tested material may be compared with that of inorganic reinforced cement board and select grade red oak flooring.

B. SMOKE DEVELOPED

The smoke developed during the test is determined by the reduction in output of a photoelectric cell. A light beam vertically orientated across the furnace outlet duct is attenuated by the smoke passing through the duct. The output of the photoelectric cell is related to the obscuration of the light source through the duct caused by the smoke. A curve is developed by plotting photoelectric cell output against time. The value of smoke developed is derived by calculating the net area under the curve for the test material and comparing this area with the net area under the curve for unfinished select grade 18mm red oak flooring.

V. FLAME SPREAD RATING AND SMOKE DEVELOPED CLASSIFICATION

Single test calculated flamespread and smoke developed values are averaged and rounded to the nearest multiple of 5 and reported as the Flame Spread Rating and Smoke Developed Classification. Actual test values are available on request.

VI. PREPARATION AND CONDITIONING OF TEST SAMPLES

Three or four sections are generally used in the preparation of a complete test specimen which is 520mm wide and 7315mm long. Materials 2438mm in length may be tested by using three sections 520mm wide by 2438 long for a total specimen length of 7315mm. A 350mm length of uncoated 16 gauge steel sheet is used to make up the remainder of the test specimen; it is placed at the fire end of the test chamber. Prior to testing, three 2438mm long sections of 6mm inorganic reinforced cement board with a density of 1445 +/- 160kg/m³ are placed on the ledges of the tunnel to protect the furnace lid assembly. Test specimens are conditioned at a controlled temperature of 23°C (+/- 3°C) and a controlled relative humidity of 50 +/- 5 percent.

LABORATORY ACCREDITATION



TL - 224



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Test Number: T-14721R

Test End Date: 12/30/14

Report Prepared For:	Armstrong World Industries Lancaster, PA
Material Tested:	Armstrong Commercial Vinyl Composition Tile (VCT)

Sample Information:

Detailed Product Description:

Vinyl Composition Tile adhered to 1/4" cement board by the manufacturer using Armstrong S-515 adhesive. All Patterns (Raffia, ChromaSpin, Stonetex, Arteffects, Companion Square, Imperial Texture Rave, Imperial Texture, Imperial Texture Classics, MultiColor, Feature Tile/Strips, SDT, Safety Zone, Civic Square, and Crown Texture)

Mounting Method: Standard floor mounting

Sample Selection:	Manufacturer
Number of Samples Per Test:	6
Surface Exposed:	Face Side Exposed
Average Thickness (in.):	0.36

Test Start Date:	12/30/2014
Conditioning Days:	29
Sample Color:	Blue
Average Density (lbs/ft^2):	3.01

Test Data

	Run 1	Run 2	Run 3
Preheat Time (min):	2:00	2:00	2:00
Starting Temp. (°F):	108	104	101
Ignition Time (sec):	338	375	445
Burn Length (feet):	0.5'	0.5'	0.5'
Time to Max Burn Length (min):	6:30	6:15	7:45

Test Results

	Run 1	Run 2	Run 3
Flamespread Value:	1	1	1
Smoke Developed Value:	33	27	25
Flame Spread Rating:			0
Smoke Developed Classification			30

Observations:	Blistering to 7'.		
Remarks:	The test sample consisted of six pieces 4' long laid end-to-end. Revision 04/11/17: "Crown Texture" was added to the list of All Patterns in the Detailed Product Description.		
Test Operator:	KF	Reader:	CP

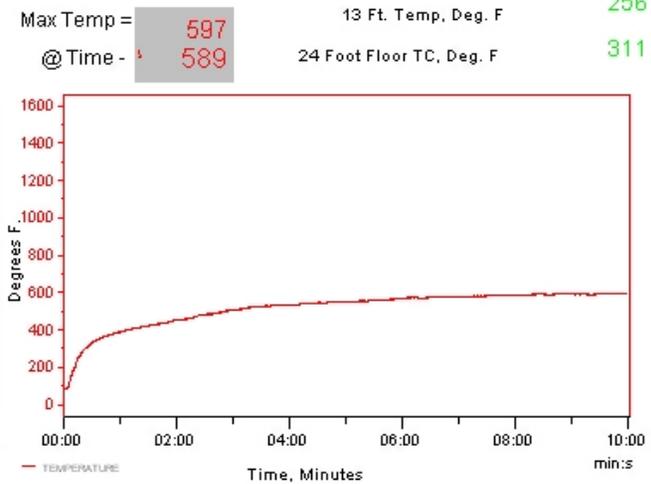
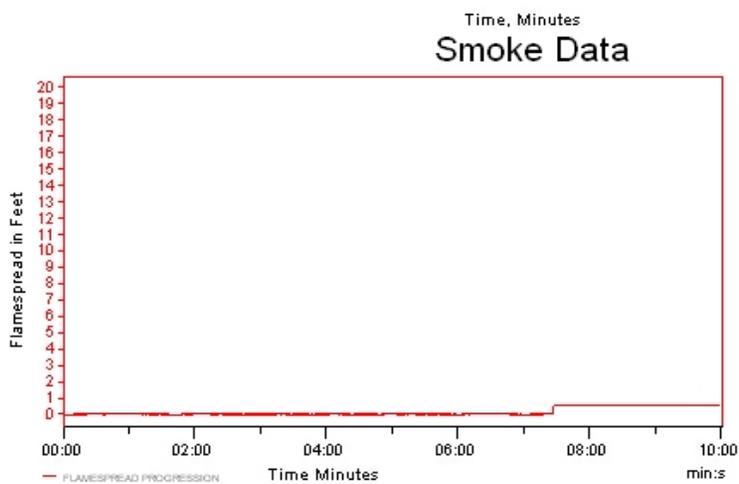
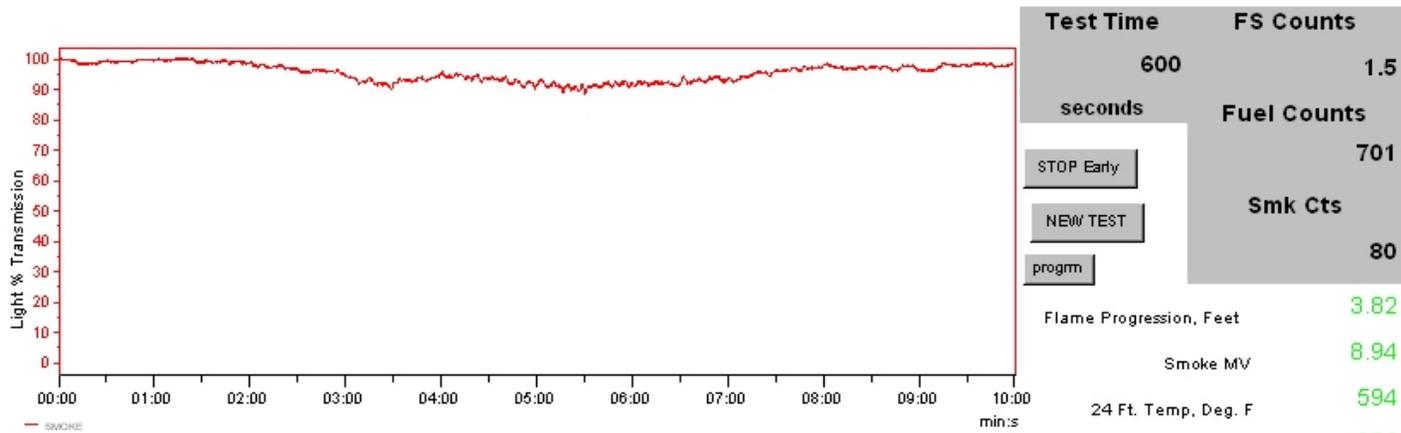
Report Prepared By:

Manager of Fire Testing

Report Reviewed By:

Director of Testing, Certification, and Standards

This is a factual report of the results obtained from laboratory tests of sample products. The results may be applied only to the products tested and should not be construed as applicable to other similar products of the manufacturer. The HPVA does not verify the description of the materials and products when the description is provided by the client. This report is not a recommendation or a disapprobation by the HPVA of the material or product tested. While this report may be used for obtaining product acceptance, it may not be used in advertising.

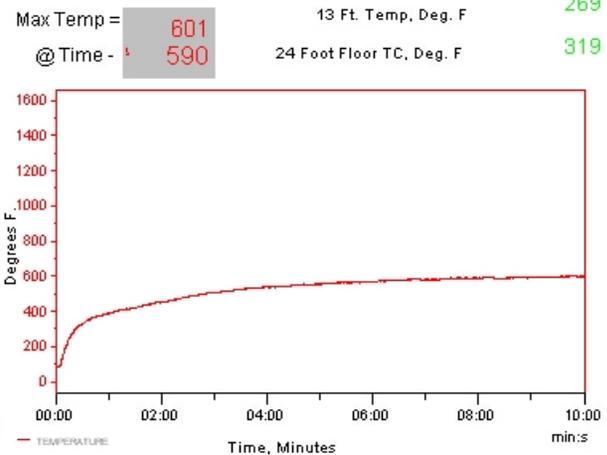
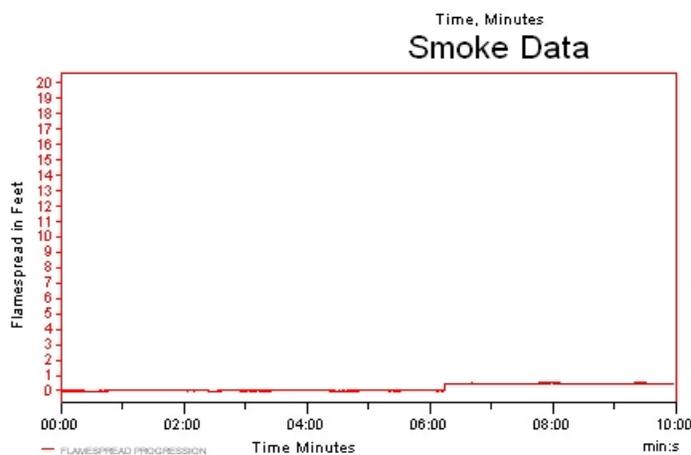
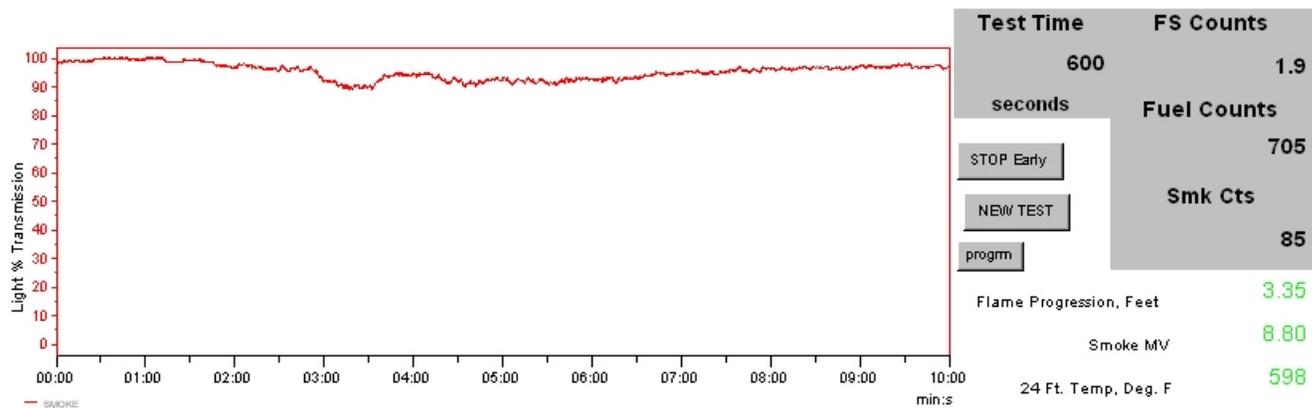


Max Temp = 597
 @ Time - 589

Flamespread Data

Fuel Data

test ON/OFF
 Test ON
 Cool

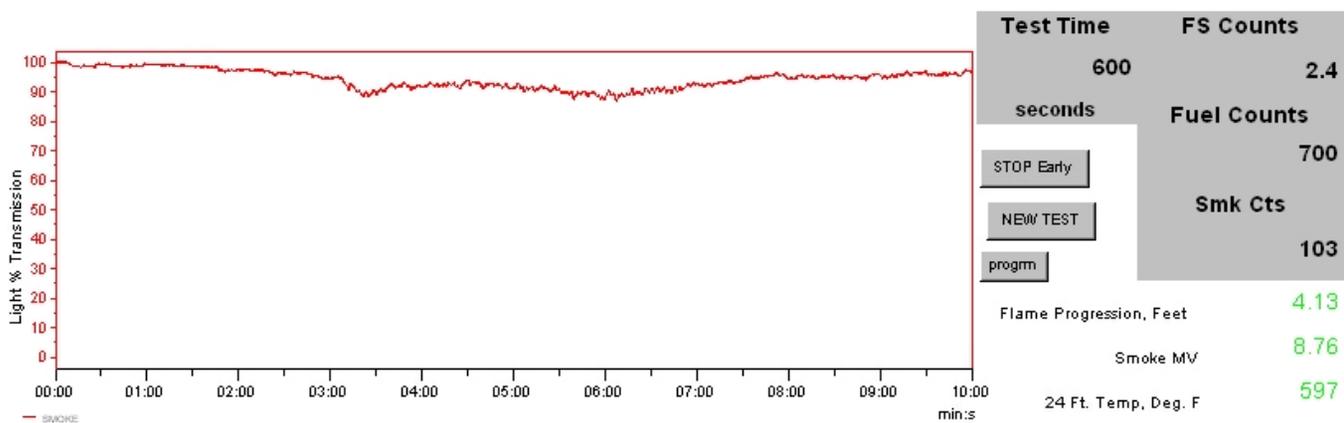


Max Temp = 601
@Time - 590

Flamespread Data

Fuel Data

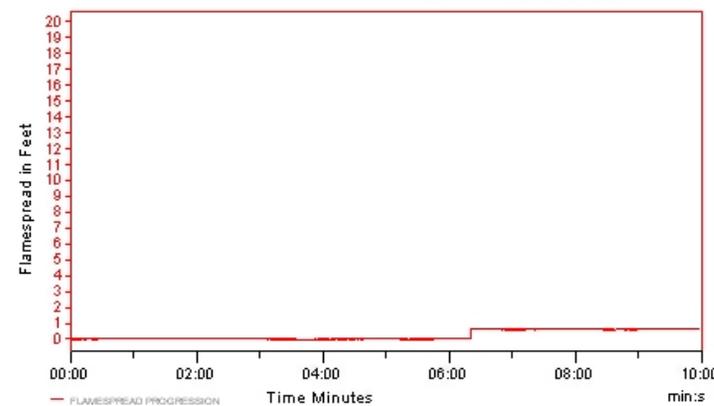
test ON/OFF
 Test_ON
 Cool



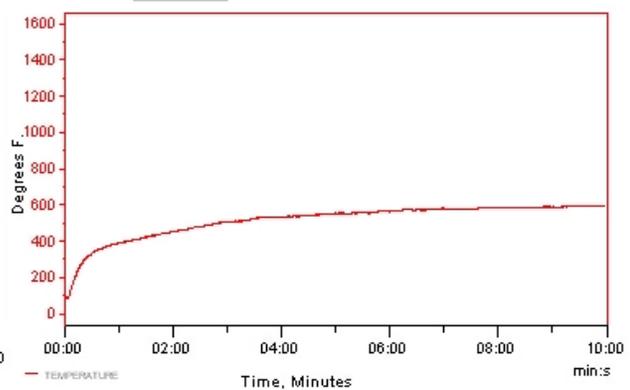
Test Time	FS Counts
600	2.4
seconds	Fuel Counts
	700
STOP Early	Smk Cts
NEW TEST	103
progrm	
Flame Progression, Feet	4.13
Smoke MV	8.76
24 Ft. Temp. Deg. F	597
13 Ft. Temp. Deg. F	262
24 Foot Floor TC, Deg. F	315

Smoke Data

Max Temp = 597
@ Time - 598



Flamespread Data



Fuel Data

test ON/OFF
 Test ON
 Cool