



June 29, 2017

MS. Simone Furiato
Ebrille*
S S Canelli 53/A
Nizza Monferrato, AT, 14049
IT

Our Reference: R38978/4787986174

Subject: Report Of Surface Burning Characteristics Tests On Samples As
Submitted By Ebrille*

Dear MS. Furiato

This is a Report summarizing the results of a test conducted under a preliminary investigation identified as Assignment No. 4787986174.

GENERAL:

Preliminary investigations are initiated to obtain information with respect to a product or products prior to submittal to UL LLC (UL) for Investigation, Classification and Follow-Up Service. This Report does not constitute evidence of such a submittal to UL. The results relate only to items tested.

METHOD:

Each test was conducted in accordance with Standard ANSI/UL723, Tenth Edition, dated September 10, 2008 with revisions through August 12, 2013, "Test for Surface Burning Characteristics of Building Materials", (ASTM E84).

The test determines the Surface Burning Characteristics of the material, specifically the flame spread and smoke developed indices when exposed to fire.

The maximum distance the flame travels along the length of the sample from the end of the igniting flame is determined by observation. The Flame Spread Index of the material is derived by plotting the progression of the flame front on a time-distance basis, ignoring any flame front recession, and using the equations described below:

A. $CFS = 0.515 A_T$ when A_T is less than or equal to 97.5 minute-foot.

B. $CFS = 4900/(195-A_T)$ when A_T is greater than 97.5 minute-foot.

Where A_T = total area under the time distance curve expressed in minute-foot.

The Smoke Developed Index (SDI) is determined by rounding the Calculated Smoke Developed (CSD) as described in UL 723. The CSD is determined by the output of photoelectric equipment operating across the furnace flue pipe. A curve is developed by plotting the values of light absorption (decrease in cell output) against time. The CSD is derived by expressing the net area under the curve for the material tested as a percentage of the area under the curve for untreated red oak.

The CSD is expressed as:

$$CSD = (A_m/A_{ro}) \times 100$$

Where:

CSD = Calculated Smoke Developed

A_m = The area under the curve for the test material.

A_{ro} = The area under the curve for untreated red oak.

SAMPLES:

The samples utilized in this investigation were neither prepared nor selected by a Laboratories' representative such that no verification of composition can be provided.

Sample Description

Test No.	System
2	EBRILSPLIT LINESETS ,TWINSPLIT LINESETS and BLACK MAMBA LINESETS polyethylene foam insulation (white and black closed cell polyethylene foam based insulator with PE white and black film)- INSULATION THICKNESS RANGE 3/8 THROUGH 3/4

Each test sample consisted of three 8 by 2 ft wide boards butted end-to-end to form the required 24 ft. long surface.

Each test sample was supported by 2 in. hexagonal poultry netting supported by 1/4 in. diameter steel rods spaced 2 ft apart.

RESULTS:

The results are tabulated below are considered applicable only to the specific samples tested.

Data sheets and graphical plots of flame travel versus time and smoke developed versus time are also enclosed.

Table 1: Flame Spread Summary

Test No.	Test Code	Sample Description	CFS Calculated Flame Spread (Ceiling)	FSI Flame Spread Index (Ceiling)+	CFS Calculated Flame Spread (Floor)	FSI Flame Spread Index (Floor)++
2	06291705	EBRILSPLIT LINESETS ,TWINSPLIT LINESETS and BLACK MAMBA LINESETS polyethylene foam insulation (white and black closed cell polyethylene foam based insulator with PE white and black film)- INSULATION THICKNESS RANGE 3/8 THROUGH 3/4	0.00	0	0.57	0

+ - Flame Spread Index while material remained in the original test position.

++ - Ignition of molted residue on the furnace floor resulted in flame travel equivalent to calculated Flame Spread Index indicated.

Table 2: Smoke Developed Summary

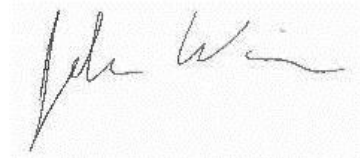
Test No.	Test Code	Sample Description	CSD Calculated Smoke Developed (Prior to Floor Ignition)	SDI Smoke Developed Index (Prior to Floor Ignition)	CSD Calculated Smoke Developed (Entire Test Duration)	SDI Smoke Developed Index (Entire Test Duration)
2	06291705	EBRILSPLIT LINESETS ,TWINSPLIT LINESETS and BLACK MAMBA LINESETS polyethylene foam insulation (white and black closed cell polyethylene foam based insulator with PE white and black film)- INSULATION THICKNESS RANGE 3/8 THROUGH 3/4	24.0	25	37.0	35

The Classification Marking of UL on the product is the only method provided by UL to identify products which have been produced under its Classification and Follow-Up Service. No use of a Classification Marking has been authorized as a result of this investigation.

Since the anticipated work has been completed, we have instructed our Accounting Department to terminate the investigation and invoice you for the charges incurred to date.

Should you have any questions, please contact the undersigned.

Very truly yours



John Wiesner
Associate Project Engineer
Building Materials & Systems

Reviewed by:



James Smith
Staff Engineering Associate
Building Materials & Systems

Project: 4787986174
Tested by: ABRAN GARCIA

File: R38978
Engineer: JOHN WIESNER

TestCode: 06291705
Date: 2017-06-29

TEST METHOD: The test was conducted in accordance with UL 723, Tenth Edition.

Client Name: Ebrille*	Test No.: 2	Hot Test: No
Test Duration: 10 minutes	Test Type: Developmental	Burn-Out Required: Yes
Mounting: Rods & Wire		

Test Sample: EBRILSPLIT LINESETS ,TWINSPLIT LINESETS and BLACK MAMBA LINESETS
polyethylene foam insulation
(white and black closed cell polyethylene foam based insulator with PE white and black film)- INSULATION THICKNESS RANGE 3/8 THROUGH 3/4

FLAME SPREAD RESULTS

Ceiling Flame Spread Data

Distance (Feet)	Time (Sec)
Ignition	28

Floor Flame Spread Data

Distance (Feet)	Time (Sec)
Ignition	384
0.5	482

Calculated Flame Spread (CFS): 0.00
Flame Spread Index (FSI): 0

Time to Ignition (sec): 28
Maximum Flame Spread (ft): 0.0
Area Under the Flame Spread Curve (ft.-min.): 0.0

Time to Floor Ignition (sec): 384
Maximum Floor Flame Spread (ft): 0.5
Calculated Floor Flame Spread: 0.57

SMOKE RESULTS

Calculated Smoke Developed (CSD): 37.0
Smoke Developed Index (SDI): 35

Area Under the Smoke Curve (Obs-min.): 31.76
Area Under Red Oak Curve (Obs-min.): 85.82

Area Under the Smoke Curve Before Floor Ignition (Obs-min.): 20.58
Smoke Developed Prior to Floor Ignition: 24.0

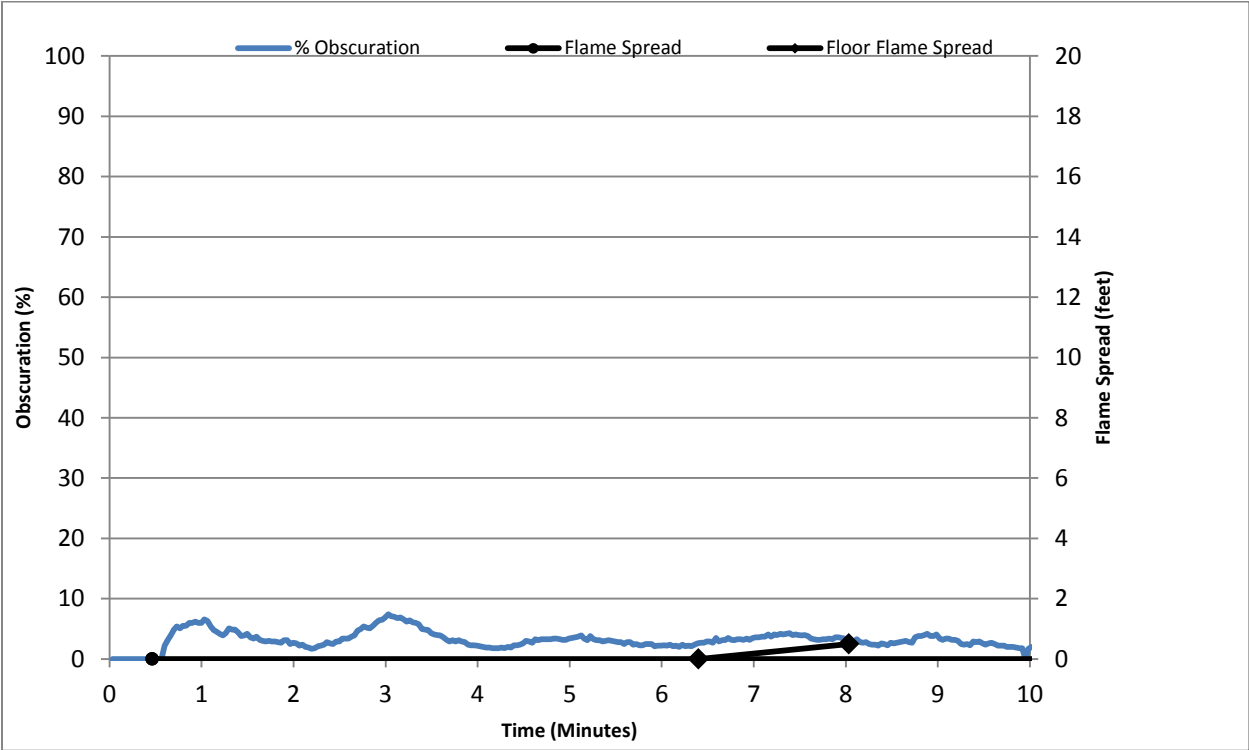
Post-Test Observations

Melt (Feet From Burner): 24
Char (Feet From Burner): 8

Flame Spread / Smoke Results

Ebrille*

EBRILSPLIT LINESETS ,TWINSPLIT LINESETS and BLACK MAMBA LINESETS



Test Num.: 2
R38978 / 4787986174
06291705

Flame Spread Index: 0
Smoke Developed Index: 35
Max. Flame Spread (ft.): 0.0