



B+N Iconic™ Panels

Surface Burning Characteristics For Vinyl-Clad Fire-Retardant MDF-Core Panels

B+N Industries' Iconic Panels were tested at Underwriters Laboratories, Inc. to determine the flame and smoke characteristics. The panels were prepared by adhering vinyl (P.V.C.) film to a 3/4" thick Fire-Retardant MDF (Medite® FR2) substrate using Helmabond® 852 adhesive.

Table 1: Test Summary

Test No.	Test Code	Sample Description	CFS Calculated Flame Spread	FSI Flame Spread Index	CSD Calculated Smoke Developed	SDI Smoke Developed Index
1	03060709	Iconic Panels	18.73	20	194.6	195

The above result is equivalent to NFPA Class A / UBC Class I. To obtain the Flame Spread Classification, the results are compared to the following:

NFPA Class	UBC Class	Flame Spread
A	I	0 –25
B	II	26-75
C	III	76-200

Reference standards: Cement Board = 0, Red Oak = 100 for Flame Spread

METHOD:

The test was conducted in accordance with Standard ANSI/UL723, ninth edition; dated August 29, 2003, "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.

B+N Industries, Inc.

Main offices:

1409 Chapin Avenue | Burlingame, California 94010 | (800) 350-4127

New York Showroom and offices:

420 West 14th St. | New York, New York 10014 | (212) 255-4110

www.BNind.com



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.

Underwriters Laboratories Inc.

FLAME SPREAD RESULTS

Flame Spread Data

Distance (Feet)	Time (Sec)
Ignition	26
0.5	36
1	44
1.5	62
2	78
3	96
4	156
4.5	400

Calculated Flame Spread (CFS): 18.73
 Flame Spread Index (FSI): 20
 Time to Ignition (sec): 26
 Maximum Flame Spread (ft): 4.5
 Area Under the Flame Spread Curve (ft.-min): 36.4

SMOKE RESULTS

Calculated Smoke Developed (CSD): 194.6
 Smoke Developed Index (SDI): 195
 Area Under the Smoke Curve (sq. in.): 8.39
 Area Under Red Oak Curve (sq. in.): 4.31

B+N Industries, Inc.

Main offices:

1409 Chapin Avenue | Burlingame, California 94010 | (800) 350-4127

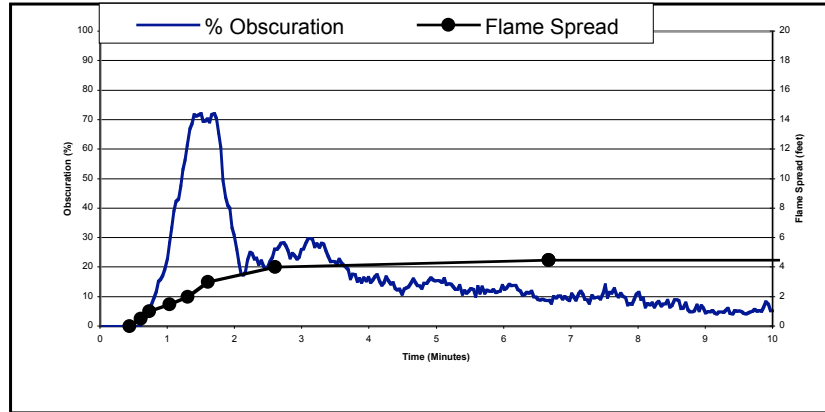
New York Showroom and offices:

420 West 14th St. | New York, New York 10014 | (212) 255-4110

www.BNind.com



Flame Spread / Smoke Results
B&N Industries
Vinyl Clad Panel



Test No. 1
06CA59921 / SV16614
01020709

Flame Spread Index: 20
Smoke Developed Index: 195
Max. Flame Spread: 4.5

B+N Industries, Inc.

Main offices:

1409 Chapin Avenue | Burlingame, California 94010 | (800) 350-4127

New York Showroom and offices:

420 West 14th St. | New York, New York 10014 | (212) 255-4110

www.BNind.com