

**INDEPENDENT LABORATORY TESTING**

Samples of different toilet partition materials were sent to independent fire test laboratories for testing and evaluation to determine the relative surface burning characteristics of these materials. The tests were performed in accordance with the American Society for Testing and Material ASTM E 84-01 "Test for Surface Burning Characteristics of Building Materials."<sup>1</sup> ASTM E 84 specifies dimensions of 2"W x 24"L for each test material for horizontal placement in the fire test chamber. A gas-fed flame source is then applied at one end of test specimen. The rate of flame spread and the degree of obscuration in the tunnel (measured by a photoelectric cell) are recorded throughout the 10-minute test. These results are compared to the burning characteristics of two known products: inorganic reinforced cement board (reference value = 0) and red oak flooring (reference value = 100). ASTM E 84 test results are used by the ICC and NFPA to evaluate burning characteristics of materials classified as Interior Wall and Ceiling Finishes<sup>2</sup> in building materials. A full description of the test is available from ASTM.

Bobrick selected this ASTM standard because it is required by the NFPA Life Safety Code for classification of Interior Wall and Ceiling Finish. Additionally, in our opinion, this standard provided an objective, repeatable, and comparable procedure with which to analyze the relative surface burning characteristic of different types of toilet partition materials to evaluate their relative flame spread and smoke development characteristics. A copy of the independent laboratory test results is available upon request.

**RESULTS OF TEST**

<b>Material Description</b>	<b>Flame Spread Index</b>	<b>Smoke Developed Index</b>	<b>ICC and NFPA Classification<sup>3</sup></b>
Powder-Coated Metal – 1-1/4" <sup>4</sup>	5	0	Class A
High Density Polyethylene (HDPE) - 1" <sup>4</sup>	55	705	UNRATED
Bobrick 1080 Phenolic – 1/2" <sup>4</sup>	30	55	Class B
Bobrick 1080 Phenolic – 3/4" <sup>4</sup>	30	20	Class B
Bobrick 1180 Phenolic – 1/2" <sup>4</sup>	15	25	Class A
Bobrick 1180 Phenolic – 3/4" <sup>4</sup>	15	20	Class A
Bobrick 1090 Solid Color Reinforced Composite – 1/2" <sup>5</sup>	45	120	Class B
Bobrick 1090 Solid Color Reinforced Composite – 3/4" <sup>5</sup>	45	95	Class B
Bobrick 1540 Plastic Laminate – 1" <sup>6</sup>	60	300	Class B
Bobrick 1040 Plastic Laminate – 1" <sup>7</sup>	60	195	Class B
Bobrick 1030 Plastic Laminate w/Stainless Steel Edge – 1" <sup>7</sup>	60	265	Class B

**CONCLUSION**

Toilet partitions made from Metal, Solid Phenolic (Bobrick 1080, 1180 Series), Solid Color Reinforced Composite (Bobrick 1090 Series), and Plastic Laminate (Bobrick 1540, 1040, 1030 Series) can be used in buildings where toilet partitions are classified as Interior Wall and Ceiling Finish.<sup>8</sup>

continued . . .

**Notes:**

<sup>1</sup> *ASTM E 84 provides comparative classifications used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.*

<sup>2</sup> *Definition of Interior Wall and Ceiling Finish: "The exposed interior surfaces of buildings including, but not limited to fixed or movable walls and partitions; columns; ceilings; and interior wainscoting, paneling or other finish applied structurally or for decoration, acoustical correction, surface insulation, structural fire resistance or similar purposes, but not including trim." International Building Code 2000, Chapter 8, Section 102, pg 171.*

<sup>3</sup> *International Code Council ICC's International Building Code and National Fire Protection Association (NFPA) classify ASTM E 84 test results as follows:*

<b>Classification</b>	<b>Flame Spread Index</b>	<b>Smoke Developed Index</b>
Class A	0 – 25	0 – 450
Class B	26 – 75	0 – 450
Class C	76 - 200	0 – 450

<sup>4</sup> *Source: Data from a test conducted by an independent laboratory in June, 2003. The HDPE tested was untreated and did not have an aluminum heat sink.*

<sup>5</sup> *Source: Data from a test conducted by an independent laboratory in November, 2002.*

<sup>6</sup> *Source: Data from a test conducted by an independent laboratory in September, 2003.*

<sup>7</sup> *Source: Data from a test conducted by an independent laboratory in January, 2004*

<sup>8</sup> *If state or local Authorities Having Jurisdiction (AHJ) classify toilet partitions as Interior Wall and Ceiling Finish, then fire-rated materials should be used.*