3form varia ecoresin® | flammability

Varia Ecoresin Flammability Results

3form Varia Ecoresin® meets the performance requirements established by the 2009 International Building Code (IBC) for light transmitting plastics and interior finishes. The provisions of these codes provide adequate regulation for most applications of 3form Varia Ecoresin panels. For use as an interior finish, ASTM E84 testing has been performed and 1/4"- 3/4" gauges of Varia Ecoresin produced from Varia Ecoresin achieve a Class B rating, with a Flame Spread Index less than 75 and a smoke density less than 450. Varia Ecoresin at 3/16" and at 1" thickness meets the criteria for a Class A rating, with a flame spread index less than 25 and a smoke density less than 450.

Note: Class B material can be used in place of Class A material when installed with an approved automatic fire suppression system. Exception: Group I-3 buildings (Table 803.9 of the 2009 IBC)

NFPA 101-00 (Section 10.2.4.4) refers to the use of light-transmitting plastic for interior applications to authorities and organizations having local jurisdiction. Such authorities typically adopt the IBC, which is supported by the International Code Council (ICC).

Varia Ecoresin is further recognized by the New York Department of Buildings (MEA#65-05 III) and the Los Angeles Department of Building Safety (LARR 25591).

There are four specific ASTM tests, which form the basis for a plastic material to become recognized by the ICC. These three ASTM tests are required in the 2015 IBC, upon which officials rely for material compliance.ASTM TEST RESULTS

TEST	VARIA ECORESIN	RESULT
ASTM D 2843 Smoke Density	71.6%	PASS Less than 75
ASTM D 635 Flame Spread	Self extinguishing	PASS CC1
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
ASTM E84 Flame Spread, 1/8" thickness Smoke generated	 0 190	 Class A: 0-25 <450
ASTM E84 Flame Spread, 3/16" thickness Smoke generated	 25 250	 Class A: 0-25 <450
ASTM E84 Flame Spread, 1/4" thickness Smoke generated	 65 250	 Class B: 26-75 <450
ASTM E84 Flame Spread, 1/2" thickness Smoke generated	 55 400	 Class B: 26-75 <450
ASTM E84 Flame Spread, 3/4" thickness Smoke generated	 35 450	 Class B: 26-75 <450
ASTM E84-03 Flame Spread, 1" thickness Smoke generated	 20 250	 Class A: 0-25 <450

TEST	3FORM DICHROIC	RESULT
ASTM D 2843 Smoke Density	47.5%	PASS Less than 75
ASTM D 635 Flame Spread	17.4 mm/min	PASS CC2
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
ASTM E84-03 Flame Spread, 1/4" thickness Smoke generated	 65 450	 Class B: 26-75 <450

TEST	3FORM TIMBER	RESULT
ASTM D 2843 Smoke Density	68.5%	PASS Less than 75
ASTM D 635 Flame Spread	16.7 mm/min	PASS CC2
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
ASTM E84-03 Flame Spread, 1/4" thickness Smoke generated	 70 400	 Class B: 26-75 <450

Due to their specialty construction, 3from Dichroic and 3form Wood have their own unique set of fire performance results.

NFPA 286 TEST RESULTS

NFPA 286 1/4" thickness (walls only or ceilings only)	Pass	Pass
3/8" thickness (walls only in standoff configuration or ceilings only)	Pass	

The NFPA 286 corner burn test is accepted by the 2012 IBC for interior finishes. Passing the NFPA 286 test allows for materials to be utilized where Class A materials are required (IBC 803.1.2).

Canadian Flammability

3form Varia Ecoresin meets the performance requirements established by the National Building Code of Canada 2005. Surface burning characteristics of building materials and assemblies for thermoplastic materials are conducted in accordance with CAN/ULC S102.2, "Test for surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies".

CAN/ULC S102.2 TEST RESULTS

TEST	RESULT
CAN/ULC S102.2 Tunnel Test Flame Spread, 6mm (1/4") thickness Smoke generated	 70 518
CAN/ULC S102.2 Tunnel Test Flame Spread, 25 mm (1") thickness Smoke generated	 40 240

All test reports are available upon request.