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ASTM E 162 Surface Flammability of "RADICI RADIFLAM AF9117GY"

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ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine surface flammability in accordance with ASTM E 162-16, as per Exova Quotation No. 18-002-585,437RV2 dated January 3, 2019.

SAMPLE IDENTIFICATION (Exova sample identification number 19-002-S0020)

Plastic material described as, "Polyamide 66", and identified as:
"RADICI RADIFLAM AF9117GY"

SUMMARY OF TEST PROCEDURE

Four specimens, each 6 inches x 18 inches (152 mm x 457 mm) in size, are pre-dried for 24 hours at 60°C in an air-circulating oven. The specimens are then conditioned to equilibrium for a minimum period of 24 hours at a temperature of 23 ± 3° and a relative humidity of 50 ± 5%.

Each specimen is individually removed from conditioning and mounted into a holder. The specimen is then positioned in front of a 12 inch x 18 inch (305 mm x 457 mm) gas-fired radiant panel (gas and air mixture) at an inclined angle of 30° (facing downward). The panel is pre-set to produce a radiant output, as measured by a calibrated optical pyrometer covering a 10 inch (254 mm) diameter area of the central panel, equal to that which would be obtained from a blackbody of the same dimensions operating at a temperature of 1238 ± 7°F (670 ± 4°C). The orientation of the specimen is such that ignition is forced near its upper edge by a pilot flame, and the flame front progresses downwards.

The Flame Spread Index (Is) is derived from the rate of progress of the flame-front and the rate of heat liberation by the material under test. Is is calculated as follows and then reported after rounding the average of the tests to the nearest multiple of 5:

$$Is = Fs \cdot Q$$

Where: **Is** is the flame spread index

Fs is the flame spread factor

Q is the heat evolution factor

SAMPLE PREPARATION

Specimens were received, pre-cut to the appropriate specimen dimensions. In all cases, 25 mm hexagonal wire mesh was used to support the specimens in the specimen holders. Specimens were individually removed from the conditioning chamber and testing was initiated within 5 minutes after removal.

REQUIREMENTS

The Federal Railroad Administration (FRA) and NFPA 130 *Standard for Fixed Guideway Transit and Passenger Rail Systems* establish performance criteria for vehicle components (materials and assemblies). Different criteria may apply, depending on the type of material and its intended use within the vehicle. Typically, a maximum Is acceptance criterion of 35 is cited for the majority of applications, with no flaming running or dripping allowed. Other industry or project documents may also apply performance criteria based on ASTM E 162 testing.

TEST RESULTS

ASTM E 162-16

Surface Flammability of Materials Using a Radiant

Heat Energy Source. (Is = Flame Spread Index).

Test	Fs	Q	Is	Observations
1	2.9	8.4	25	Melting and running of material . Flame front progression to a maximum distance of 9 inches. No flaming running or flaming dripping was observed. Test duration: 15 min. Specimens were supported by wire mesh.
2	2.4	12.4	30	
3	2.5	11.2	29	
4	2.7	12.0	33	
		Average:	28.9	
		Rounded Average:	**30**	
		Specified Maximum:	35	No flaming running or flaming dripping permitted

CONCLUSIONS

The plastic material identified in this report meets The Federal Railroad Administration requirements as they pertain to surface flammability (ASTM E 162).

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Technologist.

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