

uPVC Technical Information

Fire Testing - Extruded uPVC



Purpose of Test

To determine the flammability of a plastics material when it is tested in accordance with the test procedure specified in Section 8 - "50W (20mm) Vertical Burning Test for Classifying Materials 94V-0, 94V-1 or 95V-2" of UL94 - 'Test fo Flammability of Plastics Materials for Parts in Devices and Appliances'.

Conditions of Specimens

Five specimens were conditioned for at least 48 hours at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$ prior to testing.

Five specimens were conditioned in a circulating air oven for 168 hours at 70°C and were then cooled in a desiccator, over anhydrous calcium chloride, for at least four hours at room temperature prior to testing.

Test Results

Specimens conditioned at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$

Specimen No.	A	B	C	D	E
1	Nil	Nil	Nil	No	No
2	Nil	Nil	Nil	No	No
3	Nil	2	Nil	No	No
4	Nil	2	Nil	No	No
5	Nil	1	Nil	No	No

Specimens conditioned at a temperature of $70 \pm 1^{\circ}\text{C}$ for 168 hours

Specimen No.	A	B	C	D	E
1	Nil	Nil	Nil	No	No
2	Nil	1	Nil	No	No
3	Nil	2	Nil	No	No
4	Nil	1	Nil	No	No
5	Nil	2	Nil	No	No

Conculsion

When the test results are assessed using the test criteria specified in the Standard, the material, when tested at a nominal thickness of 1.6mm, is classified as "94V-0".

uPVC Technical Information

Fire Testing - Moulded uPVC



Purpose of Test

To determine the performance of a material when it is subjected to the conditions of the test specified in BSEN60695-2-11 / IEC60695-2 11:2000, Fire Hazard Testing Part 2-11: Glowing / Hot-Wire Based Test Methods - Glow-Wire Flammability Test Methods for End-Products utilising the test procedure specified in Clause 8 of BSEN60695-2-10:2001 and Clause 10 of BSEN60695-2-11:2001 / IEC60695-2-11:2000.

Conditions of Specimens

Prior to the test, the specimens were conditioned for a minimum period of 24 hours in an atmosphere having a temperature between 15°C and 35°C and a relative humidity of between 45% and 75%.

Test Results

In accordance with the standard, wrapping tissue was placed 200mm below the point of glow-wire application. A total of three specimens were tested at each temperature and the following observations were recorded:

Temperature	650°C	650°C	650°C	650°C
Thickness of Section (mm)	2.19	2.03	2.22	2.30
Duration of Glow Wire Application - t_a (secs)	30	30	30	30
Time to Ignition - t_i (secs)	Did Not Ignite	Did Not Ignite	Did Not Ignite	Did Not Ignite
Time to Extinguishment - t_e (secs)	N/A	N/A	N/A	N/A
Duration of flaming after removal of Glow-Wire (secs)	N/A	N/A	N/A	N/A
Duration of flaming ($t_e - t_i$) (secs)	N/A	N/A	N/A	N/A
Max Height of Flaming (mm)	N/A	N/A	N/A	N/A
Ignition of Tissue Paper	No	No	No	No

t_i = The duration from the beginning of tip application up to the time at which the specimen or the layer placed below it ignites.

t_e = The duration from the beginning of tip application up to the time when flames extinguish during or after the period of application

t_a = The duration of tip application.

Evaluation

Therefore, the results obtained demonstrate that the product, as tested, satisfactorily withstood the glow-wire test at a temperature of 650°C, with an application period of 30