technical data sheet

PERSPEX® CAST
PERSPEX® EXTRUDED

PERSPEX® FROM LUCITE®

Fire Performance of Perspex® from Lucite®

International Fire Standards

Perspex® from Lucite® acrylic sheet meets the following Flammability Standards

Test Method	Perspex Cast Sheet 3 mm thickness	Perspex Extruded Sheet 3 mm thickness
German - DIN 4102	B2	B2
USA - UL 94	HB	HB
French - NFP 92-507	M4	M4
UK - BS 476 Part 7	3	4
ISO 11925-2	E	E

Sign Regulations & Fire Performance of Perspex® from Lucite®

Statutory regulations concerning the use of **structural** materials in building construction stipulate the use of non-combustible materials. Signs and sign fascia are normally not regarded as part of the structure of the building. Display and POP items, to our knowledge, are not covered by any statutory regulations.

Sign building specification is governed by **European Standard EN 50107** (coupled with BS 559 for the UK).

ALLPLASTICS

In addition, **British Standard 5588: Part 10**, gives guidance on the use of materials for sign making in enclosed shopping precincts and malls. It states that sign fascia materials can be constructed from Class 1, 2 and 3 Surface Spread of Flame products, provided that the signs are separated between units to prevent fire spread. Therefore provided sign construction materials meet this standard there should not be any objection by local authorities or building controllers to the use of Perspex® cast sheet as it complies with this standard.

Acrylic is widely used throughout Europe for Point of Purchase displays, including magazine racking and shelving, internal lighting diffusers, protection screens around cash tills, and both illuminated and non-illuminated signs in many high street stores, and also in public areas such as airports and transport stations.

In general Perspex® acrylic sheet is not easily ignitable, especially if its edges are protected by say an aluminium profile. It burns at a similar rate as hard wood but with very little black smoke and produces fewer fumes than wood. It can be easily extinguished by taking its temperature down by applying water and will not continue to smoulder.

An independently produced fire certificate to verify the standard that cast Perspex® meets can be provided if required.

BS 5588 was granted because it was accepted that there were insufficient materials available for quality illuminated signs and displays having a Class 1 Surface Spread of Flame and that the fire spread differences between Class 1 and 3 were insufficient to justify the ban on other materials. Also, with improved electrical safety and the development of sophisticated fire protection devices, sprinkler systems and smoke detectors in buildings, the fire-spread risks are now much less than 20 years ago.

There are other sheet materials such as PVC (polyvinyl chloride), GRP (glass reinforced polyester) or polycarbonate which have a low surface spread of flame classification. However, given a total fire situation they will, like all plastic materials, still burn and when doing so give off much higher levels of black smoke and noxious fumes. Evidence

shows that in building fire catastrophes more casualties arise from asphyxiation from inhaling toxic fumes than being burnt.

EN 50107 allows acrylic with a **Glow Wire performance of 650 °C,** which both cast and extruded Perspex® meet.

Emergency Exit Signs

The regulations for these signs stipulate a material with a **Glow Wire Test of 850 °C** and to meet this standard we have developed a new sheet grade which meets this requirement. This is **Perspex® from Lucite® GW.**

UK Petroleum Sites - HS (G) 41

The Code of Practice applying to UK petrol sites allows materials with a Surface Spread of Flame Classification up to Class 3 depending on the location. In general this permits the use of cast Perspex® from Lucite® but not extruded acrylic sheet or items produced from injection moulding or extrusion acrylic polymer. They will fall into a Class 4 category. We are yet to see anything in this area which achieves a better rating.

Lighting Luminaires

In evaluating fire risk and material suitability we can say that the profile uses the same base acrylic polymer that meets architectural internal ceiling luminaires referred to as TP (b) of the UK Building Regulations Section 6 - thermoplastic materials for lighting diffusers.

London Underground Fire Testing of Perspex® from Lucite®

Perspex® was tested by Transfire Services opposite London Underground regulations for combustible materials. It is very difficult to use plastic products underground as a result of the potential smoke problems. The result was that Perspex® meets the smoke

technical data sheet

emission and flammability requirements for the London Underground Limited Engineering Standard E1042:A2:October 1996, for Category "limited and dispersed" use.

ALLPLASTICS

ALLPLASTICS ENGINEERING PTY LTD

Unit 20, 380 Eastern Valley Way
CHATSWOOD NSW 2067

Tel: (02) 9417 6111
Fax (02) 9417 6169
Email: sales@allplastics.com.au

Web: www.allplastics.com.au

Specialist in Machining, Fabrication & Supply of Plastics