

## What do the Various Fire Ratings Mean

### Introduction

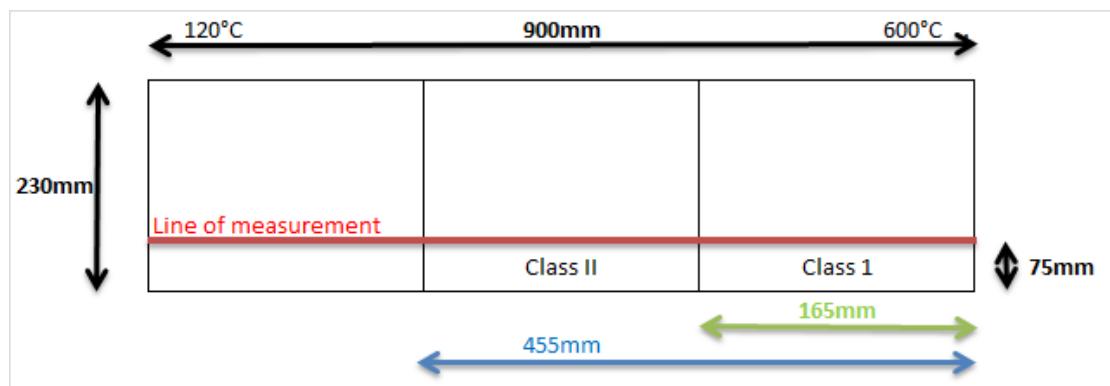
The ability to contain a fire is the most important requirement of any building material, so, even though a GRP laminate has a degree of built-in retardancy (glass is not flammable and resin chars rather than melts) it still needs to conform to the relevant safety standards. Fire retardant grades of resin and resin/gelcoat are, therefore, formulated to meet British Standards. To help appreciate what each of the tests involves and the importance of classification, we have answered some of the questions most commonly asked on the subject.

### What is the difference between Class 1 and Class II ?

Both are classifications of the surface spread of flame test (BS 476 part 7). They refer to the degree of flame spread on an ignited panel 900mm x 230mm cut from a laminate. The panel is exposed at right angles to a radiant panel to reproduce the effect of a fire on an adjoining wall or ceiling. It is ignited at the hotter end and allowed to burn for 10 minutes. Flame spread is measured along a line 75mm from the base.

A Class 1 rating is given if the spread of flame is no greater than 165mm

A Class II rating is given if the spread of flame is no greater than 215mm in the first 1½ minutes and on overall spread of no more than 455mm.



### What is Class 0?

Class 0 is a Building Regulations rating and not a British Standard Classification. To attain Class 0, a sample must meet Class 1 for spread of flame and also meet the fire propagation requirements of BS476 Part 6.

The Part 6 test was introduced because investigations into the growth of building fires showed that spread of flame was not the only significant factor. Fire propagation (or the amount of heat added to a fire by the energy output of burning materials) was also an important consideration.

## **BS 476: Part 22**

ON 17th December 1991 Smyth Composites satisfied the BS 476: Part 22 Standard when a piece of 6mm thick Fybagard (smooth faced Georgian Wired GRP - 602mm x 602mm) was installed in an aperture cut in to a door blank, between timber glazing beads. The 54mm thick door blank (1150mm x 1150mm) was clamped in place on a concrete lined restraint frame to form a panel for exposure to the furnace conditions.

The test item was installed within a fire resistance furnace. The specimen was found to satisfy the criteria of the Standard by retaining its integrity for 39 minutes. The test was terminated at 41 minutes.

### **Q. Do British Standard fire certificates carry any guarantees?**

A. No, Test Certificates are only intended as a guide to the suitability of the resin system. The specification of the laminate panel, which was tested, is stated on the certificate but it implies no liability for production items. Since there are so many variables in moulding shop conditions and processing methods, customers are advised to have tests carried out on their finished products. Fire Officers Committee Certificates, for example, are carried out on production panels and are often specified in the builder's contract.