

## Park Home Case Study Number Three

### The Significance of Spread of Flame in a Fire

Fortunately the chances of having a fire in the home are statistically very low, none the less fire is one of life's great unpredictable elements. In the year 2000 alone, Fire Brigades in the United Kingdom attended 476,300 fires leading to 595 deaths\*

Whilst active fire protection measures in the form of such appliances as smoke detectors are seen as an important requirement in any home today, the equally important need for appropriate passive fire protection measures should not be underestimated.

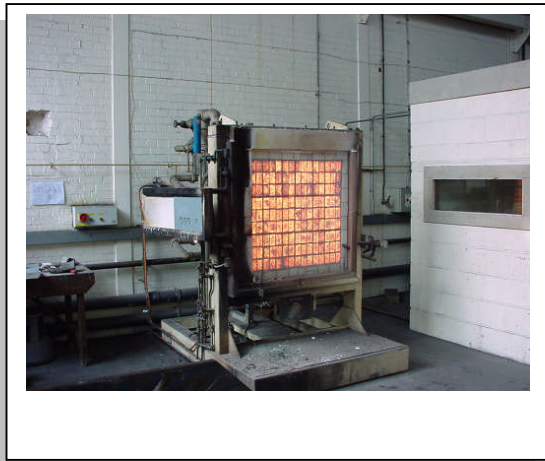
The term passive fire protection is used to define those materials that form the structural elements or fabric of the building that are designed in total or in part, to stop or limit the spread of fire or the hazardous toxic fumes and smoke generated by it.

Whilst fire may be unpredictable, the methods by which such elements of construction are tested to assess their ability to tolerate the effects of fire are carried out under very controlled and reproducible fire conditions.

Under the regulations governing the manufacture of Park Homes there is a requirement for the exterior fabric of the prefabricated unit to comply with measures drawn up under British Standard 476: Pt 7: 1997 with a minimum requirement to achieve Class 3

It is important to recognise that the performance results awarded are a function of the tested system as a whole i.e. both the background **and** the surface coating and not the surface coating in isolation.

The test has been devised to act as a means of measuring the exposed surface of materials used as linings for walls and ceilings and to classify them according to the rate and distance of spread of flame across them as shown in the table below.



The actual standard is broken down into four classes of performance defined as 1 to 4.

Classification	Spread of Flame at 1.5 min.		Final Spread of Flame	
	Limit in mm	Limit of Specimen in Sample in mm	Limit in mm	Limit of Specimen in Sample in mm
<b>Class 1</b>	165	165 + 25	165	165 + 25
<b>Class 2</b>	215	215 + 25	455	455 + 45
<b>Class 3</b>	265	265 + 25	710	710 + 75
<b>Class 4</b>	Exceeds the limits of Class 3			

\*Home Office Statistical Bulletin



As part of its development programme **Everlac** (GB) Ltd has submitted the **Everflex System** for independent test and assessment appraisal by the BRE (Building Research Establishment Ltd.)

Under this test programme six samples were prepared each measuring 270mm x 885mm comprising of a plywood substrate (typical of that used in Park Home construction, to which the following **Everflex System** coatings were applied:

- Ever**san Sanitising Wash
- Ever**block Stain Blocking Primer (2 coats)
- Ever**flex Hibuild

Each sample was exposed to a BS 476: Part 7 radiant heat panel and monitored for flame spread at one and a half minutes into the test and at ten minutes at which point the test is terminated. The following results were recorded:

Specimen	Flame Spread Distance at 1.5 minutes	Flame Spread Distance at 10 minutes
One	130mm	385mm
Two	120mm	390mm
Three	120mm	239mm
Four	120mm	385mm
Five	120mm	295mm
Six	120mm	395mm

### Conclusion

The results from these tests demonstrate that all of the samples of plywood coated with the **Everlac's Everflex System** achieved a Class 2 classification in accordance with BS 476: Part 7: 1997 thereby exceeding the industry requirement of Class 3.

