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Order No:

25 November 2010  
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Client: Guard Industry  
Bloxham Mill Business Centre  
Barford Road  
Bloxham  
Banbury  
Oxon  
OX15 4FF

Job Title: **Fire Test on One Sample of Panels**

Material Received: 1 October 2010

Description of Sample: One sample of panels, referenced: **Faceal Colour 2C**.

Brief: Fire Technology Services were requested to carry out a fire test on the sample supplied to BS EN 13823.

UKAS Accreditation: Our Laboratories are UKAS accredited. However, it should be noted that tests marked \* are not UKAS accredited in this report. They are not included in the UKAS Accreditation Schedule for our laboratory, either due to the work not conforming fully to the standard (e.g. reduced number of specimens) or to it being outside the scope of our accreditation, or subcontracted.

Uncertainty: An estimation of uncertainty of measurement has not been taken into account when making a judgement to any pass/fail criteria.



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## **FIRE TESTS ACCORDING TO BS EN 13823:2002**

**Reaction to fire tests for Building Products - Building Products excluding floorings exposed to the thermal attack by a single burning item.**

**Classified According to BS EN 13501-1:2002**

### **Conditioning**

The specimens were conditioned in accordance with BS EN 13238:2001.

### **Principle**

Test specimens, consisting of two vertical wings forming a right-angled corner, is exposed to the flames of a burner placed at the bottom of that corner. The flames are obtained by the combustion of propane gas, injected through a sandbox to give a heat output of  $30.7 \pm 2.0$  kW.

The performance of the test specimen is evaluated over a period of 20 minutes. The performance requirements are: heat production, smoke production, lateral flame spread and falling flaming droplets and particles.

The heat production is measured by use of oxygen calorimeter that uses the principle that the amount of oxygen consumed in a fire is proportional to the amount of heat produced. The smoke production is measured by use of a light attenuation instrument installed in the exhaust duct alongside the sampling equipment used to measure the heat release. Visual observations are made of the horizontal flame spread and falling of flaming droplets and particles.

### **Procedure**

The test was carried out in accordance with BS EN13823:2002.

The specimen was placed in the trolley as per the instructions given and placed underneath the hood in the testing chamber. The volume flow of the exhaust was set to  $0.60 \pm 0.05$  m<sup>3</sup>/s and maintained at this throughout the test period.



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The temperatures in the exhaust hood and the ambient temperature should be within 4°C with the ambient temperature being within 20 ± 10 °C. The other pre-test conditions of ambient pressure and ambient relative humidity were also recorded.

The recording of baseline data is started at 0 s. At 120 s the auxiliary burner is ignited and the propane mass flow adjusted to the specified flow before 150 s, this flow to be kept constant throughout the test.

With the pre-test conditions met, the propane supply is switched from the auxiliary burner to the main burner at 300 s.

The burning behaviour of the specimen was recorded both automatically and visually over a period of 1,260 s from when the main burner was ignited.

At 1560 s the gas supply was terminated along with the automatic recording of the data. The conditions at the end of the test were recorded at least one minute after any remaining combustion has been totally extinguished.

The individual pre-test and baseline conditions, apparatus specifications, test validity criteria, burner details was found to be within specified parameters. The graphs of HRR, HRR(30), THR, FIGRA, SPR, SPR(60), TSP and SMOGRA are found below with the results and classification.

**Classification Criteria**

The samples were classified according to BS EN 13501:2002: Fire classification of Construction Products and Building Elements: Part 1: Classification using Test Data from Reaction to Fire Tests.

For construction products excluding floorings the classes are:

Classification	Classification Criteria (mean values)			
	FIGRA <sub>0.2MJ</sub> (W/s)	FIGRA <sub>0.4MJ</sub> (W/s)	LFS	THR <sub>600s</sub> (MJ)
A2	≤120	N/A	Edge of specimen	≤7.5
B	≤120	N/A	Edge of specimen	≤7.5
C	N/A	≤250	Edge of specimen	≤15
D	N/A	≤750	No requirement	No requirement





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To meet classification A2 the sample also has to meet the requirements of either BS EN ISO 1182:2002 or BS EN ISO 1716:2002

To meet classification B, C and D the sample also has to meet the requirements of BS EN ISO 11925-2:2002

**Additional Classifications - Smoke and Flaming droplets/particles**

Classification	Classification Criteria (mean values)	
	SMOGRA (m <sup>2</sup> /s <sup>2</sup> )	TSP <sub>600s</sub> (m <sup>2</sup> )
s1	≤30	≤50
s2	≤180	≤200
s3	Not s1 or s2	Not s1 or s2
d0	No flaming droplets/particles in BS EN 13823 within 600seconds	
d1	No flaming droplets/particles persisting longer than 10 seconds in BS EN 13823 within 600 seconds	
d2	Not d0 or d1	

**Results**

Classification criteria	Specimen			Mean	Class
	1	2	3		
FIGRA <sub>0.2MJ</sub> (W/s)	TNR	TNR	TNR	TNR	<b>B</b>
FIGRA <sub>0.4MJ</sub> (W/s)	TNR	TNR	TNR	TNR	
THR <sub>600s</sub> (MJ)	0.3	0.3	0.6	0.4	
LFS to edge (yes or no)	No	No	No	No	
SMOGRA (m <sup>2</sup> /s <sup>2</sup> )	TNR	TNR	TNR	TNR	<b>s1</b>
TSP <sub>600s</sub> (m <sup>2</sup> )	22.6	24.4	32.1	26.4	
FDP flaming ≤ 10 s (yes or no)	No	No	No	No	<b>d0</b>
FDP flaming > 10 s (yes or no)	No	No	No	No	

TNR = Threshold Not Reached

The test results relate to the behaviour of the test specimen of a product under the particular conditions of the test; they are not intended to be the sole criteria for assessing the potential fire hazard of the product in use.





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**Classification of Sample**

The results indicate the sample could meet the following classification:

**Class B, s1 ,d-0**

The information contained on page no's 1/5 of this certificate is hereby certified to be a correct statement of the tests and investigations carried out by FTS on the materials referred to.

Signed.....*B Chambers*.....Date.....25 November 2010

B Chambers  
Fire Technician

Reported By.....*[Signature]*.....Date.....25 November 2010

P Doherty  
Operational Head

