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Client: InterfaceFLOR  
Shelf Mills  
Shelf  
Halifax  
West Yorkshire  
HX3 7PA

Job Title: **Fire Test on One Sample of Carpet Tiles**

Material Received: 10 September 2009

Description of Sample: One sample of carpet tiles referenced, **Key Features.**

Brief: BCTC were requested to carry out a fire test on the sample supplied according to BS EN ISO 9239-1.

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.

Testing Atmosphere: Unless otherwise specified the sample has been conditioned and tested, where appropriate, in the standard atmosphere for conditioning and testing textiles (BS EN ISO 139:2005) of 65±4% r.h. and 20±2°C.



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## **FIRE TESTS ACCORDING TO BS EN ISO 9239-1:2002**

**Reaction to fire tests for Floorings - Part 1: Determination of the burning behaviour using a radiant heat source (ISO 9239-1:2002)**

**Date of Test: 01/10/2009**

### **Conditioning**

The specimens were conditioned in accordance with BS EN 13238:2001. The substrate used was a fibre cement board (ISO 390) with a thickness of  $(6 \pm 1)$ mm and a density of  $(1,800 \pm 200)$  Kg/m<sup>3</sup> representing the standard substrate of Class A1<sub>fi</sub> or A2<sub>fi</sub>.

### **Procedure**

The test was carried out in accordance with BS EN ISO 9239-1. The sponsor sampled and cut the specimens to the dimensions stated.

Specimens were individually placed in the combustion chamber and allowed to preheat for two minutes under a radiant panel, which gives an imposed radiant flux ranging from approximately 11 kW/m<sup>2</sup> to 1 kW/m<sup>2</sup> along the specimen.

The pilot flame used was the line burner as described and was applied to the surface of the specimen for 10 minutes and then removed.

The flame front was measured at the end of the test or at 30 minutes if applicable.

Test termination was considered to be when the flame front self extinguished or at 30 minutes, whichever is the sooner.

The heat flux from the panel incident on the specimen when self extinguished or at 30 minutes (critical heat flux CHF or HF-30) was calculated from a prior calibration.



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**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 Floorings including their surface coverings the classes are:

Classification	Classification Criteria (mean values) (kW/m <sup>2</sup> )
B <sub>fl</sub>	8.0
C <sub>fl</sub>	4.5
D <sub>fl</sub>	3.0
	Smoke Production % x min
s1	≤ 750
s2	Not s1

When tested to BS EN ISO 11925-2:2002 the sample has to have a flame spread (Fs) of: Fs ≤ 150mm within 20 seconds (Class Efl)

**Results**

The test results relate to the behaviour of the test specimens of a material under the particular conditions of test; they are not intended to be the sole criterion for assessing the full potential fire hazard of the materials in use.





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**Results**

<u>Specimen No.</u>	<u>Direction of specimen</u>	<u>Smoke Obscuration</u>		<u>Maximum Flame front (mm)</u>	<u>Critical Heat Flux (kW/m<sup>2</sup>)</u>	<u>Duration of Flaming (sec)</u>
		<u>Max %</u>	<u>% x min</u>			
1	Machine	73	386	250	8.00	775
2	Across	81	391	247	8.10	794
3	Machine	72	308	250	8.00	731
4	Machine	75	316	250	8.00	774
Mean of 3 specimens	Machine	73	337	250	8.00	760

<u>Distance Burnt (mm)</u>	<u>Time for each specimen to burn (s)</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
50	177	170	159	159
100	271	258	229	234
150	341	322	280	282
200	400	382	339	359
250	497	---	448	438

**NB.** The tests were carried out in accordance with the standard in relation to carpet tiles which means that the first cross join was situated at 250mm from the zero point. It was commented on the test that the material shrunk back at this join and that because of the gap produced the flame did not progress beyond the join. This means that the results just fall into the **B<sub>fl</sub>** classification, however had the flame propagated across the join then the classification would have been lower.





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**Comments**

One specimen was initially tested in each direction and whichever direction gave the worst result a further two specimens were tested. Only the results of the 3 specimens in the same direction were used to calculate the mean results.

It should be noted that to achieve the above classification, the material has also to meet the performance requirements of Class E<sub>fl</sub>, when tested in accordance with BS EN ISO 11925-2:2002

The specimens of floor covering were tested loose laid onto a 6mm fibre cement board as defined in BS EN 13238:2001.

The results indicate that the above sample would meet a classification of **Class B<sub>fl</sub>-s1** when tested to this standard alone.

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 the British Carpet Technical Centre on the materials referred to.

Signed..... *B Chambers* .....Date..... 08 October 2009

B Chambers  
Fire Technician

Reported By..... *P Doherty* .....Date..... 08 October 2009

P Doherty  
Operational Head

