BTTG
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WIRA TESTING CENTRE
FIRE TESTING

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Our Ref: 27274A/11/02
Your Ref:
Order No:

18 December 2002

Client: Mermet UK

Dick de Leeuw Co.
Ryeford Hall
Ryford
Ross-on-Wye
HR9 7PU

Job Title: BS 476:Part 7:1987 and BS 476:Part 6:1989

Material Received: 26 November 2002

Description of Sample: **One sample of material labelled ref: Mermet Flocke 11201-600 White**

Brief: Wiratec were requested to carry out a fire test on the sample supplied to BS 476 parts 6 and 7.

UKAS Accreditation: Our Laboratories are UKAS accredited However, it should be noted that:

tests marked * are not UKAS accredited in this report and 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

Testing Atmosphere: Unless otherwise specified the sample has been conditioned and tested, where appropriate, in the standard atmosphere for conditioning and testing textiles (BS EN20139:1992) of 65±2% r.h. and 20±2°C.

1. FIRE TESTS ACCORDING TO BS 476:PART 7:1987 (AS AMENDED)
(Method for classification of the surface spread of flame of products)

Date of Test: 09/12/02

Procedure

The test was carried out in accordance with BS 476: Part 7: 1987. The sponsor sampled the material and the specimens were cut from the sample received to the dimensions set out in the standard. These specimens were then placed on a panel that has a 25mm airgap to a 12mm calcium silicate substrate and stapled behind.

The following were recorded:-

a) the time at which the flame front crosses each vertical reference line;
b) the maximum extent of flame spread during the first 1.5 min from the start of the test;
c) the maximum extent of flame spread during the whole test i.e. 10 min or less (if applicable)
d) the time (and distance) at which maximum flame spread is reached.

The flame spread at 1.5min and the final flame spread results were compared with the standard class limits and a classification was assigned.

Requirements

The class limits for flamespread, detailed in BS 476:Part 7; are set out below.

	Flame spread at 1.5 min (mm)	Final flame spread (mm)
Class 1	165 (+25)	165 (+25)
Class 2	215 (+25)	455 (+45)
Class 3	265 (+25)	710 (+75)
Class 4	Exceeding Class 3 limits.	

A definitive classification is based on a sample of six specimens and the figure in brackets gives the tolerance by which only one specimen in six may exceed the class limit assigned.

Results

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

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Time for flame spread to reach (s) (mm)					Flame spread at 1.5 min (mm)	Maximum flame spread (mm)	Time to reach maximum flame spread (s)
165	215	265	455	710			
-	-	-	-	-	60	60	60
-	-	-	-	-	60	60	60
-	-	-	-	-	60	60	60
-	-	-	-	-	60	60	60
-	-	-	-	-	60	60	60
-	-	-	-	-	60	60	60

The results indicate that the sample met the performance requirements of Class 1.

2. FIRE TESTS ACCORDING TO BS 476:PART 6:1989

Fire tests on building materials and structures.
Method of test for fire propagation for products

Date of Test: 10/12/02

Test Method

The test was carried out in accordance with BS 476: Part 6: 1989. The sponsor sampled the material and the specimens were cut from the sample received to the dimensions set out in the standard. These specimens were then placed on a panel that has a 25mm airgap to a 12mm calcium silicate substrate and stapled behind.

Prior to testing the sample the calibration of the equipment was determined to ensure compliance with the test limits set out in the standard.*

Temperatures of the flue gases were measured to the nearest degree centigrade at the time intervals and periods set out below, taking zero time as the moment of ignition of the gas supply. The temperature was measured by means of two thermocouples with their measuring junctions located in the cowl of the apparatus as required by the standard.

The relevant temperature-time intervals were observed for each individual specimen and the calibration board according to the temperature range 0 to 3 minutes every 30 seconds, 4 to 10 minutes every 1 minute and 12 to 20 minutes every 2 minutes to give 3 time periods.

Calculation of Results

At each time interval the temperature of the calibration board was subtracted from that of the individual specimen temperature, this was then divided by ten multiplied by the time interval:

$$\theta_s - \theta_o / 10t$$

θ_s = temperature rise in °C of the flue gases for the test specimen at time t
θ_o = temperature rise in °C of the flue gases for the calibration board at time t
t = time interval

The sum of each individual value in each time period was then calculated to give an index of performance, s, for each specimen.

Interval (min)	Time period (min)	No of values	Index
0.5	0.5 –3	6	s_1
1	4 - 10	7	s_2
2	12 - 20	5	s_3

The fire propagation index of the product is calculated from the average of the individual s values for the total number of specimens in each time period.

$$\text{Total I} = i_1 + i_2 + i_3$$

A definitive classification is based on a sample of at least three specimens.

Requirements

To meet Class 0 a material has to meet the requirements laid down in the UK Building Regulations 1991 (2000 edition) Approved Document B appendix A paragraph 12 which states that either:

a) a material has to be composed of materials of limited combustibility; or
b) a class 1 material which has a propagation index (I) of not more than 12 and a sub index (i_1) of not more than 6.

Results

Number of specimens tested	Sub-index i_1	Sub-index i_2	Sub-index i_3	Total Fire propagation index I
3	4.18	1.89	0.66	6.73

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Comments: In our opinion:-

1) the test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

2) The results indicate that the sample met the requirements of Class 0 of the UK Building Regulations 1991 (2000 edition) Approved Document B appendix A paragraph 12

* A substitute lining board to that described in the standard was used, still producing a repeatable calibration of the apparatus within the limits set out in the standard.

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 Wira Testing Centre on the materials referred to.

Signed.....Date.....18.12.02

Mr. W. Stott
Senior Fire Technician

Signed.....Date.....18/12/02

Mr. D. Hird
Operational Head
Fire Testing

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