Confidential Report

Our Ref: 27/05788D/12/21

Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.
Telephone: +44 (0) 113 259 1999
Email: info@bttg.co.uk
: www.bttg.co.uk

Date: 18 January 2022

Our Ref: 27/05788D/12/21
Your Ref: ---

Client: **GTech Strategies Ltd**

1 Raven Close
Watermead
Aylesbury
Buckinghamshire
HP 19 0UP

Job Title: Fire Classificaiton Test on One Composite Sample

Clients Order Ref: BTTG 058

Date of Receipt: 20 December 2022

Description of Sample: One composite sample referenced; Series 3210 Gloss film on 12.5mm gypsum plasterboard.

Manufacturer: Arlon Graphics

Work Requested: We were asked to make the following test(s):

BS EN 13823 - Indicative tested as received

* subcontracted test, UKAS accredited
** subcontracted test, EN ISO/IEC 17025 accredited
*** not UKAS accredited

Note: This report relates only to the samples submitted and as described in the report.

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FIRE TESTS ACCORDING TO BS EN 13823:2020 (INDICATIVE) ***
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 13501-1:2018

Date of Test: 13/01/2022

Conditioning

One specimen from the sample was conditioned otherwise in accordance with BS EN 13238:2010.

Principle

A test specimen, 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±2.0kW.

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.

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Procedure

The test was carried out otherwise in accordance with BS EN 13823: The specimen was tested as received otherwise in accordance with BS EN 13823:2020.

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±0.05 m^3/s and maintained at this throughout the test period.

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.

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Classification Criteria

The sample was classified according to BS EN 13501:2018 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)			
	$FIGRA_{0.2MJ}$ (W/s)	$FIGRA_{0.4MJ}$ (W/s)	LFS	THR_{600s} (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

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

To meet classification B, C and D the sample also has to meet the requirements of BS EN ISO 11925-2:2020.

Additional Classifications - Smoke and Flaming droplets/particles

Classification	Classification Criteria (mean values)	
	SMOGRA (m^2/s^2)	TSP_{600s} (m^2)
s1	≤30	≤50
s2	≤180	≤200
s3	Not s1 or s2	Not s1 or s2
d0	No flaming droplets/particles within 600seconds	
d1	No flaming droplets/particles persisting longer than 10 seconds within 600 seconds	
d2	Not d0 or d1	

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Results

Classification criteria		Class
$FIGRA_{0.2MJ}$ (W/s)	60.1	**B**
$FIGRA_{0.4MJ}$ (W/s)	0.0	
THR_{600s} (MJ)	0.9	
LFS to edge (yes or no)	No	
SMOGRA (m^2/s^2)	0.0	**s1**
TSP_{600s} (m^2)	24.8	
FDP flaming ≤ 10 s (yes or no)	No	**d0**
FDP flaming > 10 s (yes or no)	No	

Note

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.

Only one specimen was tested to BS EN 13823:2010. No guarantee can be given as to the outcome of definitive testing. This report does not have the status of a full UKAS Accredited Test Certificate, therefore, it cannot be substituted or used as such.

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Comments

In our opinion, based on the test carried out on the sample supplied; the results indicate the sample meets the requirements of a Class B, s1, d0 when tested to this method alone.

To meet classification B, C and D the sample also has to meet the requirements of BS EN ISO 11925-2:2020.

An estimation of uncertainty of measurement has been taken into account when making a judgment to any pass/fail criteria. Under our Policy we have used a non-binary decision rule.

See our Decision rules Policy (http://www.bttg.co.uk/decision-rules-policy) for further information.

Reported by:…… A Shute, Senior Laboratory Technician

Countersigned by:…….. P Doherty, Manager

Enquiries concerning this report should be addressed to Customer Services.

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Uncertainty Budget - Annex

The uncertainty budget for BS EN 13823:2020 was determined as follows:-

FIGRA 0.2MJ	+15%
FIGRA 0.4MJ	+15%
THR 600s	+10%
SMOGRA	+15%
TSP 600s	+20%