Test Report No. 7191320364-MEC23/1-YWA_CR1
dated 07 Nov 2023
(re-issue dated 06 Mar 2024)

PSB Singapore

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SUBJECT:

Surface spread of flame test on Brand: "Greenlam", Model: "Greenlam High Pressure Laminates" High pressure laminates material for interior application submitted by Greenlam Asia Pacific Pte Ltd on 18 Oct 2023.

TESTED FOR:

Greenlam Asia Pacific Pte Ltd
11 Sungei Kadut Crescent
Singapore 728683

DATE OF TEST:

26 Oct 2023

PURPOSE OF TEST:

To determine the tendency of the surface of a material or a combination of materials to support the spread of flame across its surface and to classify the surface according to the test given in British Standard 476 : Part 7 : 1997 "Method of test to determine the classification of the surface spread of flame of products".

The test was conducted at TÜV SÜD PSB's fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.

Amendment (06 Mar 2024):
On page 2, under the details of the product, the nominal mass per unit area was amended.

Laboratory:
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Singapore 609937

DESCRIPTION OF SPECIMENS:

Nine pieces of specimen, said to be Brand: “Greenlam”, Model: “Greenlam High Pressure Laminates” High pressure laminates material for interior application, each of nominal test size of 885mm x 270mm were received. The thickness, mass per unit area and density of the specimen were measured to be 0.8mm, 1.36kg/m^2 and 1697kg/m^3 respectively.

Details of the product, as provided by the sponsor of test, are as follows:

Brand	Greenlam
Model reference	Greenlam High Pressure Laminates
Generic product name	Greenlam Laminates
Material composition	Decorative paper with melamine treated surface, Kraft paper impregnated with flame retardant phenolic resin
Country of Origin	India
Nominal thickness	0.8mm
Nominal mass per unit area	1.3kg/m^2
Nominal density	N/A
Fire retardant	Phosphoric Acid & Mono Ethanol Amine

Details of the product, as provided by the sponsor of test, are as follows: (Cont'd)

Exterior Face : (Fire side) Brand – Material – Nominal thickness – Nominal mass per unit area – Color reference – Fire retardant –	Design Decorative Paper with Melamine Treated Surface Greenlam Paper N/A N/A N/A N/A
Core Material Brand – Material – Nominal thickness – Nominal density – Color reference – Fire retardant –	Kraft Paper impregnated with flame retardant phenolic resin Greenlam Paper N/A N/A N/A Phosphoric acid and Mono Ethanol Amine
Adhesive: Brand – Material – Nominal density – Colo reference – Fire retardant –	Phenolic & Melamine adhesive used for impregnating both kraft & design decorative paper respectively. Greenlam N/A N/A N/A N/A

TEST PROCEDURE:

Prior to test, the specimens were prepared and conditioned in accordance with paragraphs 5.3 to 5.6 of the standard and secured to a specimen holder as described in paragraph 6.3.

Six specimens, backed with non-combustible board, were tested with the decorative paper (white) face exposed to the specified thermal radiation from the apparatus described in paragraph 6.1 of the standard. The intensity of the radiated heat incident on the specimen varies with distance from the hotter end, so that when the specified calibration panel is mounted in the place to be occupied by the specimen, the irradiance of the radiometer is as given in Table 1. The test was terminated when the flame front reached the 825mm reference line, or after 10 minutes has elapsed, whichever is the shorter.

Table 1 : Irradiance Along Horizontal Reference Line on the Calibration Board

Distance along reference line from inside edge of specimen holder	Irradiance kW/m^2		
mm	specified	min.	max.
75	32.5	32.0	33.0
225	21.0	20.5	21.5
375	14.5	14.0	15.0
525	10.0	9.5	10.5
675	7.0	6.5	7.5
825	5.0	4.5	5.5

RESULTS OF TEST:

Specimen No.	1	2	3	4	5	6
Spread of flame at first 1½ minutes (mm)	0	0	0	0	0	0
Distance (mm)	Time of spread of flame to indicated distance (minutes • seconds)					
Start of flaming	nil	nil	nil	nil	nil	nil
75 165 190 215 240 265 290 375 455 500 525 600 675 710 750 785 825 865	-	-	-	-	-	-
Time of maximum spread of flame (minutes • seconds)	-	-	-	-	-	-
Distance of maximum spread of flame (mm)	0	0	0	0	0	0
Comments	None					

Classification of Surface Spread of Flame

Classification	Spread of flame at 1.5 min.		Final spread of flame	
	Limit (mm)	Limit for one specimen in sample (mm)	Limit (mm)	Limit for one specimen in sample (mm)
Class 1	165	165 + 25	165	165 + 25
Class 2	215	215 + 25	455	455 + 45
Class 3	265	265 + 25	710	710 + 75
Class 4	Exceeding the limits for class 3			

CONCLUSION:

In accordance with the class definitions specified in the Standard, the test results show that the sample tested has a Class 1 Surface Spread of Flame.

REMARKS:

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. Photograph of specimen is shown in Plate 1.

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Chan Lung Toa
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Mechanical Centre

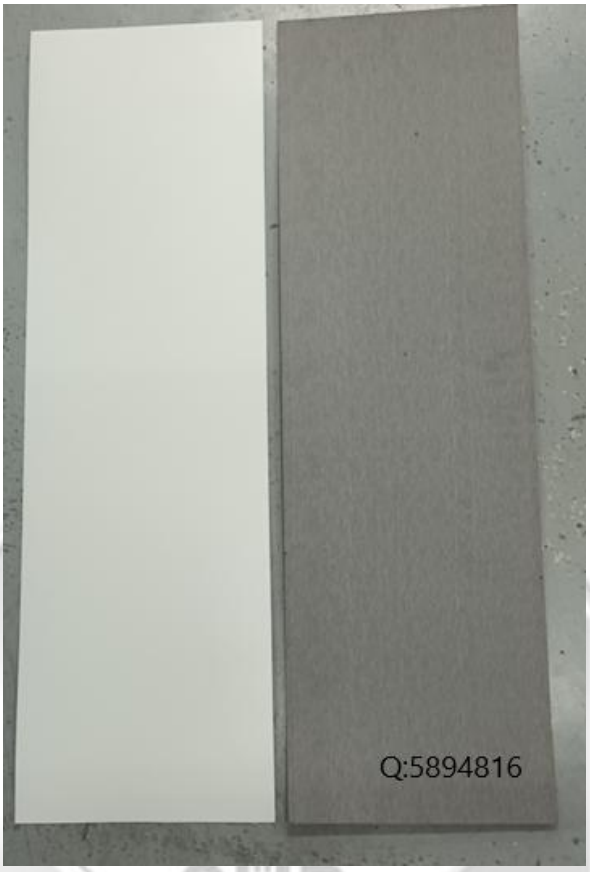

Plate 1: Photograph of specimen

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Effective 26 January 2021