

Test Report No. 7191190037-MEC18/1-JV
dated 19 July 2018



PSB Singapore

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SUBJECT:

Determination of the reaction to fire tests for building products excluding floorings, when exposed to the thermal attack by a single burning item on 'Greenlam' High Pressure Laminate Panel (12mm thick, density 17.34kg/m²) submitted by Greenlam Asia Pacific Pte Ltd on 02 Jul 2018.

TESTED FOR:

Greenlam Asia Pacific Pte Ltd
11 Sungei Kadut Crescent
Singapore 728683

DATE OF TEST:

05 to 06 Jul 2018

PURPOSE OF TEST:

To determine the reaction to fire performance of building products excluding floorings, when exposed to the thermal attack by a single burning item (SBI), according to EN 13823: 2010 (BS EN 13823:2010).

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



LA-2007-0380-A
LA-2007-0381-F
LA-2007-0382-B
LA-2007-0383-G

LA-2007-0384-G
LA-2007-0385-E
LA-2007-0386-C
LA-2010-0464-D

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council. Inspections/Calibrations/Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our inspection body/laboratory.

Laboratory:
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Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
1 Science Park Drive, #02-01
Singapore 118221
TUV®



DESCRIPTION OF SPECIMEN:

Five sets of specimen, said to be 'Greenlam' High Pressure Laminate Panel (12mm thick, density 17.34kg/m²), each of the following nominal size were received. The nominal overall area density and thickness of the specimen were found to be 18.3 kg/m² and 13mm respectively.

1. Panel of 1500mm x 1000mm
2. Panel of 1500mm x 495mm

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

Product manufactured / supplied by:	
Company Address	Greenlam Industries Limited Dhami, Industrial Area Behror, Rajasthan 301701 India
Brand	Greenlam
Generic product name	Greenlam
Material composition	Paper
Nominal mass per unit area	17.34 kg/m ²
Nominal thickness (mm)	12mm
Fire retardant	-

TEST PRINCIPLE:

The principle behind the test is to evaluate the fire performance of the specimen over a duration of 20 minutes, by exposing the specimen to the flames of a sandbox burner placed at the bottom corner of two vertical wings constructed at right-angle. The performance parameters are: heat production, smoke production, lateral (horizontal) flame spread and falling flaming droplets and particles.

A short period before ignition of the main (primary) burner is used to measure the heat output and smoke development of the burner only, using an identical burner away from the specimen (the “auxiliary” (secondary burner”).

Some measurements are performed automatically, some are made by visual observation. The exhaust duct is equipped with sensors to measure the temperature, light attenuation, O₂ and CO₂ mole fraction and a flow induced pressure difference in the duct. These quantities are recorded automatically and used to calculate the volume flow, the heat release rate (HRR) and the smoke production rate (SPR).

TEST PROCEDURE:

Prior to test, the specimens were conditioned in accordance to EN 13238 and clause 6 and installed onto the test trolley in accordance with clause 5.3 of the standard.

The data calculations are calculated according to the formulations in Annex A and measuring sensors calibrated according to Annex C and D of the standard.

The test was conducted in accordance to clause 8 with data and observations recorded in according to clause 8.3 and 8.4 of the standard.

Additional information of the product is shown in the following Appendices, attached to this report:

- Appendix A: Graph of average:
 - HRR, THR & FIGRA values (zoom)
 - HRR, THR & FIGRA values
 - SPR, TSP & SMOGRA values
- Appendix B: Photographs of test






TEST RESULTS:


Test Perimeters	Specimen			Mean
	1	2	3	
FIGRA _{0.2MJ} (W/s)	39.5	34.8	33.1	35.8
FIGRA _{0.4MJ} (W/s)	30.1	22.1	26.2	26.1
THR _{600s} (MJ)	2.6	2.3	2.5	2.5
LFS to edge (Yes / No)	No	No	No	No
SMOGRA (cm ² /s ²)	0.0	0.0	0.0	0.0
TSP _{600s} (m ²)	6.3	5.0	5.2	5.5
FDP flaming ≤ 10s (Yes / No)	No	No	No	No
FDP flaming > 10s (Yes / No)	No	No	No	No

'*' - denotes 'threshold not reached'

REMARKS:

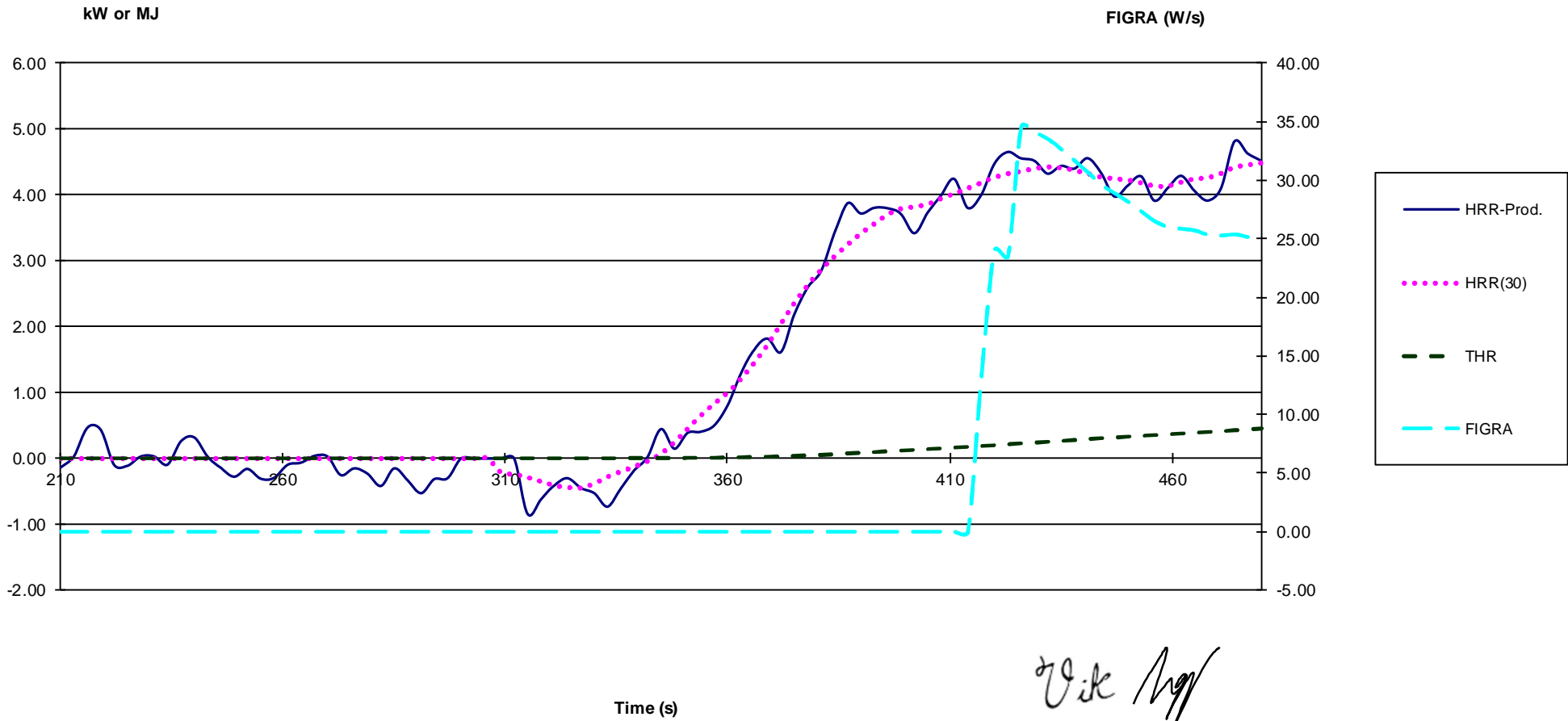
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.


Vikneshwaran Jayaraman
Higher Associate Engineer


Leong Gene-Jhou
Engineer
(Fire Property)
Mechanical

Appendix A: Graphs

Average HRR, THR and FIGRA values (Zoom)

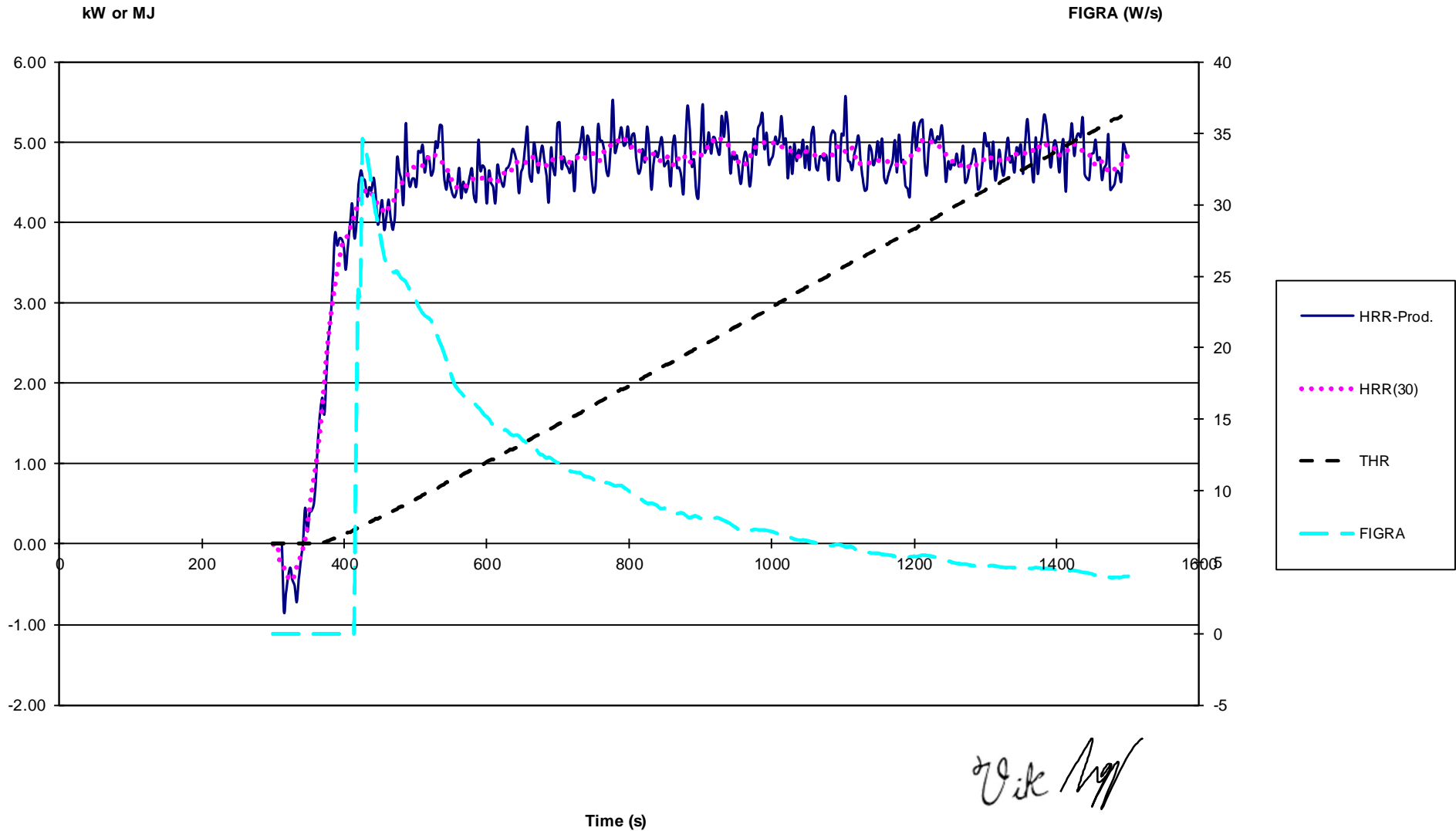


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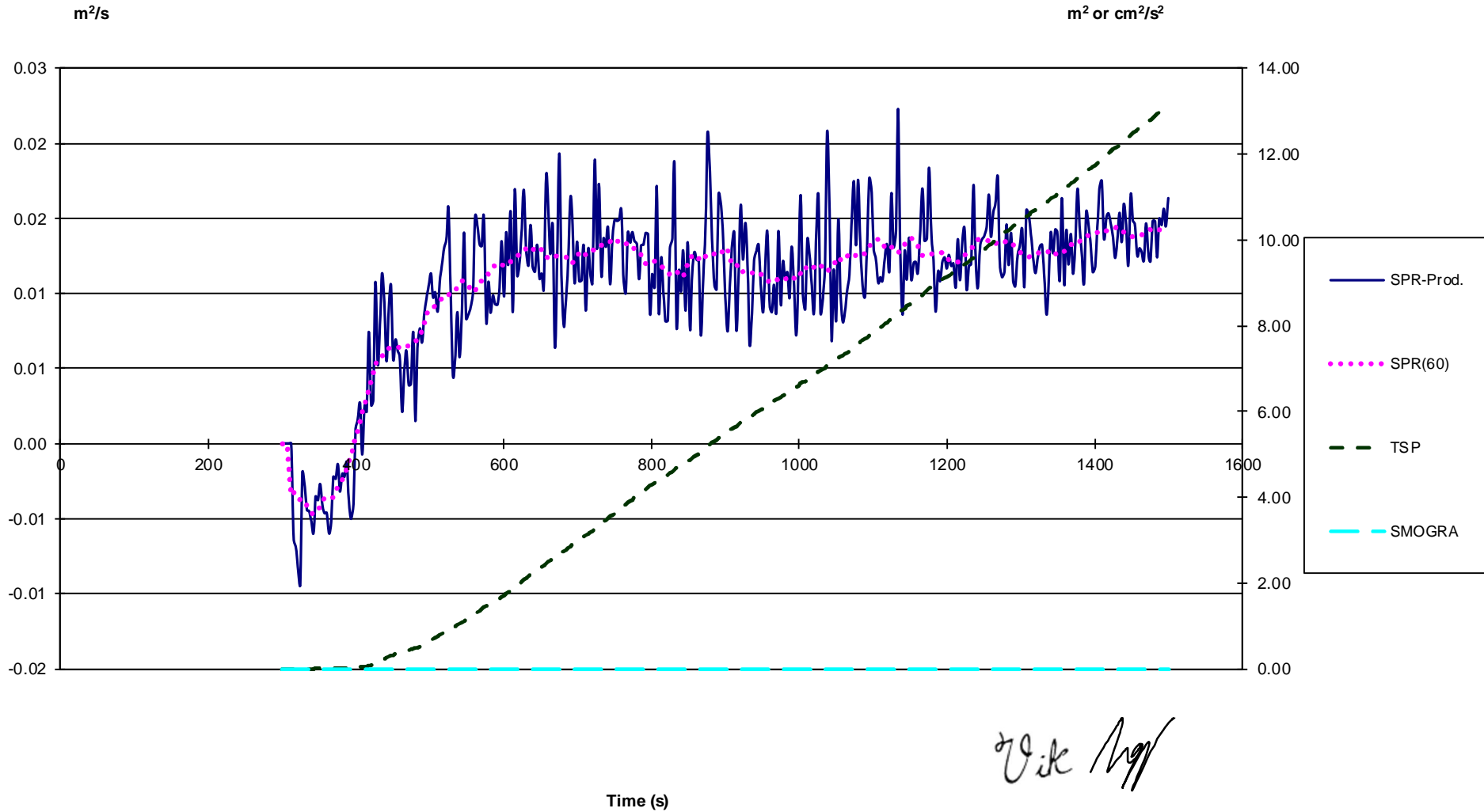
Average HRR, THR and FIGRA values



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Average SPR, TSP and SMOGRA values



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Appendix B: Photographs of test



Plate 1: At start of test



Plate 2: At 10 mins of test

John Ng



Plate 3: At end of test



Uik Ng

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July 2011

