Test Report No. 7191271569-MEC21/02-JV
dated 26 Nov 2021

PSB Singapore

Add value.
Inspire trust.

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

SUBJECT:

Non-combustibility test on Brand: "Lightherm" Model: "Lightherm Drymix – Lightweight Thermal Insulation Material" insulation material submitted by Eco Building Solutions Pte Ltd on 12 October 2021.

TESTED FOR:

Eco Building Solutions Pte Ltd
1 Sunview Road
#05-46, Eco Tech @ Sunview
Singapore 627615

DATE OF TEST:

21 Nov 2021

PURPOSE OF TEST:

To determine the non-combustibility performance of products, under specified conditions, according to the test specified in BS EN ISO 1182 : 2010 "Reaction to fire tests for products – Non-combustibility test".

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

TÜV SÜD PSB

ilac-MRA

Accredited Laboratory SAC·SINGLAS

LA-2007-0380-A LA-2007-0386-C
LA-2007-0381-F LA-2010-0464-D
LA-2007-0382-B LA-2018-0702-B
LA-2007-0383-G LA-2018-0703-G
LA-2007-0384-G LA-2020-0747-L
LA-2007-0385-E

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:
TÜV SÜD PSB Pte. Ltd.
15 International Business Park
TÜV SÜD @ IBP
Singapore 609937

Phone : +65-6778 7777
E-mail: info.sg@tuvsud.com
https://www.tuvsud.com/sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
15 International Business Park
TÜV SÜD @ IBP
Singapore 609937

DESCRIPTION OF SPECIMEN:

10 pieces of specimen, said to be Brand: "Lightherm" Model: "Lightherm Drymix – Lightweight Thermal Insulation Material" insulation material, each of nominal size of 45 mm (diameter) x 50mm (thickness) were received. The area and bulk density of the specimen were measured to be 27.13 kg/m^2 and 522.1 kg/m^3 respectively.

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

Brand	Lightherm
Model reference	Lightherm Drymix – Lightweight Thermal Insulation Material
Generic product name	Lightweight thermal insulation material
Material composition	Polystyrene aggregate and cement
Country of origin	Malaysia
Manufacturer	Vodapruf Pte Ltd
Nominal bulk density	522.1 kg/m^3
Nominal thickness	52mm
Fire retardant	N.A.

Photograph of specimen:

TEST PROCEDURES:

Test specimens were conditioned as specified in EN 13238. Afterwards, they were dried in a ventilated oven maintained at (60±5)°C for between 20 hours and 24 hours, and cooled to ambient temperature in a desiccator prior to test.

The furnace was calibrated in accordance to clause 7.3.1 and 7.3.2 of the standard with the following results:

Description	Result	Requirement
Average deviation of temperature on three vertical axes from average furnace wall temperature	0.4%	Less than 0.5%
Average deviation of temperature on three levels from average furace wall temperature	0.4%	Less than 1.5%
Average wall temperature at level (+30mm)	781.2°C	Average wall temperature at level (+30mm) shall be less than average wall temperature at level (-30mm)
Average wall temperature at level (-30mm)	786.4°C	

Specimens were exposed to the specified heating conditions (750 ± 5°C) in a furnace conforming to clause 4.2 and illustrated in Figure B.1 and B.2 of the Standard. The furnace was heated and its temperature stabilised for at least 10 minutes at 750 ± 5°C. One specimen was then inserted in the furnace, the whole operation was performed in less than 5 seconds. The temperatures of the furnace, the specimen centre and the specimen surface were measured by three separate Type K sheathed thermocouples continuously on the chart of a recorder until final temperature equilibrium of the furnace and specimen centre and specimen surface were established. The flaming time of the specimen was determined by a stop watch. The procedure was repeated for four other specimens, one at each time.

RESULTS:

Non-combustibility test	Specimen				
	1	2	3	4	5
Duration of sustained flaming, t_f (sec.)	0	0	0	0	0
Mean duration of sustained flaming, t_f (sec.)	**0**				
Maximum furnace temperature, T_{max} (°C)	791.2	794.5	782.6	780.4	783.7
Final furnace temperature, T_f (°C)	788.8	792.2	781.1	777.8	781.1
Furnace temperature rise, $\Delta T = T_{max} - T_f$ (°C)	2.4	2.3	1.5	2.6	2.6
Average furnace temperature rise, ΔT (°C)	**2.3**				
Maximum specimen surface temperature (°C)	718.9	710.0	723.9	723.5	726.8
Final specimen surface temperature(°C)	718.7	708.7	723.7	723.2	726.3
Specimen surface temperature rise, ΔT_c (°C)	0.2	1.3	0.2	0.3	0.5
Average specimen surface temperature rise, ΔT_c (°C)	0.5				
Maximum specimen centre temperature (°C)	777.6	785.2	801.3	817.3	815.1
Final specimen centre temperature (°C)	776.4	784.6	800.9	816.9	814.3
Specimen centre temperature rise, ΔT_s(°C)	1.2	0.6	0.4	0.4	0.8
Average specimen centre temperature rise, ΔT_s(°C)	0.7				
Mass loss, Δm (%)	19.70	20.82	19.92	19.31	18.66
Average mass loss, Δm (%)	**19.68**				
Observations	Nil				

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 criteria for assessing the potential fire hazard of the product in use.

Vikneshwaran Jayaraman
Assistant Manager

Chan Lung Toa
Assistant Vice President
Fire Testing
Mechanical Centre

PSB Singapore

Please note that this Report is issued under the following terms :

1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.

2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.

3. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.

4. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.

5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, 15 International Business Park TÜV SÜD @ IBP Singapore 609937.

6. The tests carried out by TÜV SÜD PSB and this report are subject to TÜV SÜD PSB's General Terms and Conditions of Business and the Testing and Certification Regulations of the TÜV SÜD Group.

Effective 26 January 2021