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TEST REPORT

REPORT NO : 2024CB0323

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THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : BRD NEW MATERIALS (MALAYSIA) SDN. BHD.
Lot 577, Jalan Merbau, Batu 7 1/2,
Jalan Kapar Kampung Perepat,
42200 Kapar, Selangor, Malaysia.

File No.: P5-019095 Date: 27/02/2024
(Requested by Ms. Nurul Izzah Binti Norzari
ICCS 2, PCID, SIRIM QAS International Sdn. Bhd.)

Manufacturer : BRD NEW MATERIALS CO., LTD.
West Side, South of Weiwu Road, Chang'Ge City,
461500 Xuchang, Henan, China.

Product : Thermal Insulation Product

Reference Standard / : MS ISO 8302: 2003

Method of Test Thermal Insulation – Determination of Steady-State Thermal Resistance and
Related Properties – Guarded Hot Plate Apparatus

Description of sample : Two pieces of Thermal Insulation Product with size of 500 mm x 500 mm
were received for testing.
(Description of samples - Refer Page 2 for details)

Date Received of : 17 April 2024
Complete Application

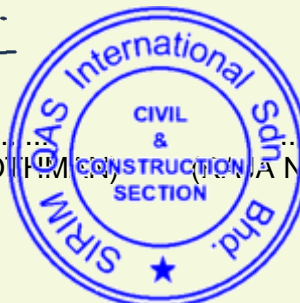
Job No. : J20241430262

Description of Test : The results of the submitted test samples are described in Page 3 of this
Results test report.

Issued Date : 26 April 2024

Approved Signatory;

(Ts. MUHAMMAD HAZMIE BIN OTHMAN)
Testing Engineer



Head
Civil & Construction Section
Testing Services Department

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Description of Samples

Product Name : Thermal Insulation Product
 Brand : BRD ECO
 Model: : ROCKWOOL SANDWICH PANEL
 Type : FLAT PANEL

No.	Nom. Thickness	Skin (PPGI) Thickness	Core Density
1	50 mm	0.5 mm (Internal) & 0.6 mm (External)	120 kg/m ³
2	50 mm	0.5 mm (Internal) & 0.6 mm (External)	100 kg/m ³

Samples received: 500 mm x 500 mm x 2 pieces each.

Test Method : MS ISO 8302: 2003
 Thermal Insulation – Determination of Steady-State Thermal Resistance and Related Properties – Guarded Hot Plate Apparatus

Objective : To determine the Thermal Resistance, R (m²K/W) and Thermal Conductivity, λ (W/mK)

Apparatus : The apparatus was a single specimen type for the sample thickness ranges from 10 mm to 200 mm.

Test Procedure : The test has been conducted in general conformance with the MS ISO 8302: 2003 Thermal Insulation – Determination of Steady-State Thermal Resistance and Related Properties – Guarded Hot Plate Apparatus.

The measurement was computed at single temperature of 20 °C at temperature difference of 15 K temperature. Test sample was laid horizontally in the hot plate apparatus.

$$\text{Thermal Resistance} = \frac{\text{Temperature Difference} \times \text{Surface Area}}{\text{Total Heat Supplied}} = \frac{\Delta T.A}{Q}$$

$$\text{Thermal Conductivity} = \frac{\text{Sample Thickness}}{\text{Thermal Resistance}} = \frac{d}{R}$$



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Sample No. 1

Nominal Thickness : 50 mm

Nominal Density : 120 kg/m³

Test Result : Measured Thickness: 50.98 mm

PARAMETER	SYMBOL	UNIT	TEST VALUES
Measured Temperature	T	°C	20
Temperature Difference	ΔT	K	15
Thermal Conductivity**	λ	W/mK	(0.046 ± 0.001*)
Thermal Resistance	R	m ² K/W	(1.114 ± 0.090*)
Thermal Transmittance	U	W/m ² K	(0.898 ± 0.028*)

Sample No. 2

Nominal Thickness : 50 mm

Nominal Density : 100 kg/m³

Test Result : Measured Thickness: 50.79 mm

PARAMETER	SYMBOL	UNIT	TEST VALUES
Measured Temperature	T	°C	20
Temperature Difference	ΔT	K	15
Thermal Conductivity**	λ	W/mK	(0.043 ± 0.001*)
Thermal Resistance	R	m ² K/W	(1.180 ± 0.090*)
Thermal Transmittance	U	W/m ² K	(0.847 ± 0.028*)

- Note:
- 1) Testing date/period: 23 April 2024 to 24 April 2024.
 - 2) Testing was conducted at Block 22, SIRIM Complex.
 - 3) Where the reported uncertainty is calculated using a coverage factor k=2, which gives a level of confidence of approximately 95%. *Denotes measurement uncertainty.
 - 4) **Calculation of thermal conductivity is based on the measured thickness.



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2. For quantitative test results (with values), when a statement of conformity to a specification or standard is applied, the Simple Acceptance Rule shall be used. Unless otherwise stated, the Acceptance Rule with Guard Band is used, and additional charge will be incurred accordingly.
3. For qualitative test results (visual observation), when requested by applicant, a statement of conformity in the Test Report shall be reported. Should there is no request by applicant, a statement of conformity in the Test Report can be reported based on our discretion.
4. The Test Report shall not be misused, amended, changed, varied or modified in any manner whatsoever by the Applicant or otherwise.
5. If the Test Report is to be furnished to any third party or to the public, each such Test Report shall be furnished in full, legible and in its entirety.
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7. Customer (Applicant/Manufacture/Factory,etc.) is not permitted to use any SIRIM QAS International, SIRIM or other SIRIM's subsidiaries logo or words on packaging, sample's manual, technical specification, items and products.
8. Subject to consent and written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International, the customer (Applicant/Manufacture/Factory,etc.) may use SIRIM QAS International logo or word on the promotional materials and the Applicant shall only include the phrase, "A sample of this product has been tested by SIRIM QAS International ...(Test Report No) ...(dated) ...(for what test) ...(to which standard)" or such similar words which stress that only the sample was actually tested. This phrase shall only be used for the purpose of product advertisement or product promotion (eg; brochures/flyers/official website). For avoidance of doubt, the statement shall not be used on the sample, packaging of the sample, items and products.
9. In the event there is an investigation from a Government Regulatory Agency concerning the Applicant's Test Report, SIRIM QAS International may disclose the information pertaining to the Test Report for purposes of such investigation.
10. In the event the Applicant is found in breach of this provision, SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries without prejudice to any other rights and remedies may take whatever action necessary including but not limited to:
 - a) Informing and placing a notice in the media;
 - b) Obtaining an injunction from Court (cost on a solicitor-client basis to be borne by the Applicant);
 - c) Refusing to accept any further Product for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
 - d) Instructing the Applicant to withdraw and recall the advertisement, statement or document in question and advertise a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries twice in a national publication of SIRIM QAS International's choice at the Applicant's sole cost; and
 - e) Informing or lodging a report pertaining the Applicant's Test Report with the relevant authorities.
11. SIRIM QAS International is committed in supporting an environmentally-friendly business practices by reducing paper consumption, therefore we do not issue any hard copy of Test Report to the Applicant. However, additional certified true copy(ies) or softcopy of the Test Report may be issued upon request by the Applicant upon payment of the relevant fee. The certified true copy(ies) or softcopy of test report shall only be given for test report issued not more than three (3) years from the date of issuance.
12. Issuance of Amendment Report due to the following reasons are chargeable to the Applicant :
 - a) Changes in details of the Applicant name and/or address;
 - b) Changes in details of the Manufacturer's name and/or address;
 - c) Changes in details of the Factory location name and/or address;
 - d) Changes in details of the model and/or type designation
13. However, issuance of Supplementary Report due to the following reasons are FOC :
 - a) Misprints and typo errors;
 - b) Missing technical information as agreed in PP1 form;
 - c) Test data not reported;
 - d) Mistake in reporting of test data
14. Corrections to report shall only be allowed if the date of issuance of the original report has not exceeded 6 months and shall be limited to a maximum 3 times, after either case whichever occurs earlier, an Amendment or a Supplementary Report shall not be issued.