

TEST REPORT

No.: GZIN2512002317CM01_EN

Issue Date: 2026-02-05

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CUSTOMER NAME: PHOMI MCM CO., LTD.

ADDRESS: NO.9, ZHIJIANG ROAD, OVERSEAS CHINESE INVESTMENT ZONE,
LAIBIN CITY, GUANGXI, CHINA

Sample Name : ECONICLAY COVERING

Manufacturer : PHOMI MCM CO., LTD.

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : SDHL2512022939HI

Date of Receipt : 2025-12-17

Testing Period : 2025-12-17 ~ 2026-02-05

Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Tobby

Tobby Yang

Authorized signatory

Scan to see the report

GZIN2512002317CM01
Verification:
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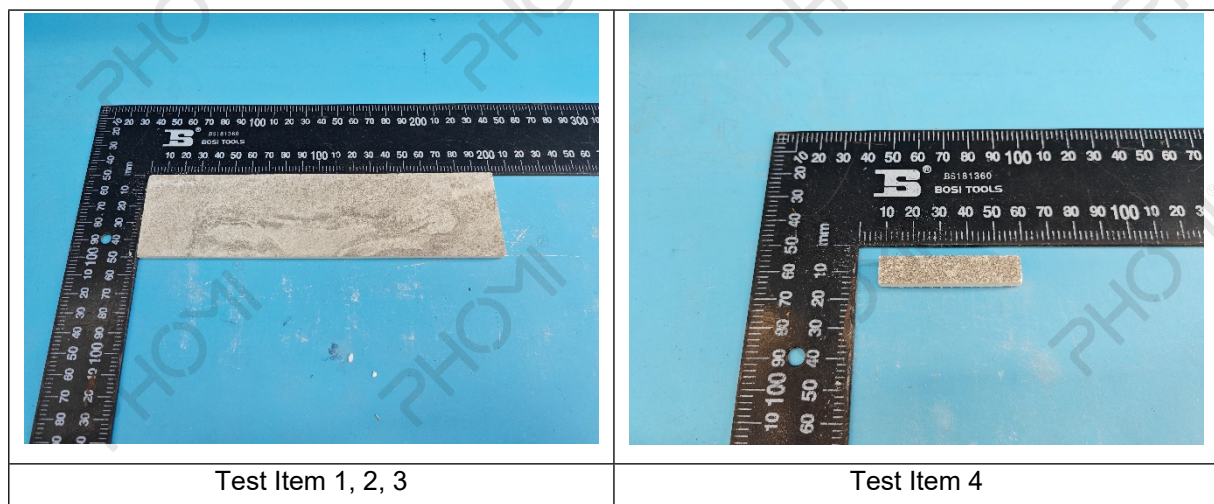
Issue Date: 2026-02-05

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Summary of Results:

No.	Test Item	Test Method	Result
1	Flexural Tensile Strength	EN 15286:2013 Section 4.2.5 & EN 14617-2:2016	7.6 MPa
2	Durability of Flexural Strength against Freeze and Thaw cycles	EN 15286:2013 Section 4.2.13 & EN 14617-5:2012 & EN 14617-2:2016	KM _{f25} : 83%
3	Thermal Shock Resistance	EN 15286:2013 Section 4.2.7 & EN 14617-6:2012 & EN 14617-2:2016	See results
4	Linear Thermal Expansion Coefficient	EN 15286:2013 Section 4.2.8 & EN 14617-11:2005	See results
5	Dimensional Stability	EN 15286:2013 Section 4.2.9 & EN 14617-12:2012	Vertical displacement: 0.95 mm Classification: C
6	Apparent Density and Water Absorption	With Reference to EN 15286:2013 Clause 4.2.4 & EN 14617-1:2013	See Result
7	Thermal Conductivity	With Reference to EN 15286:2013 Clause 4.2.6 & EN ISO 13787:2003 Clause 5.1 & EN 12667:2001 Heat Flow Meter Method	See Result

Original Sample Photo:



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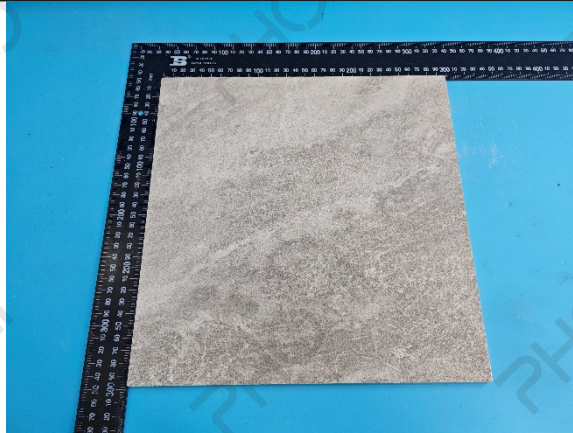
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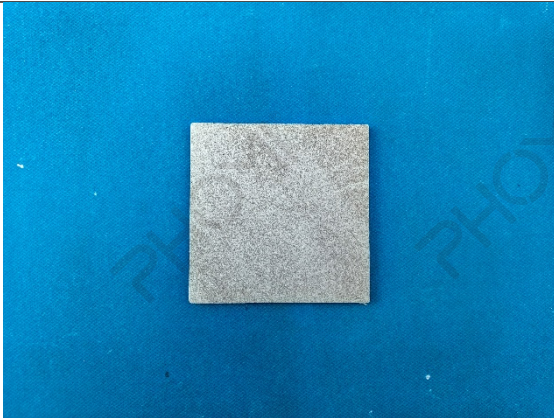
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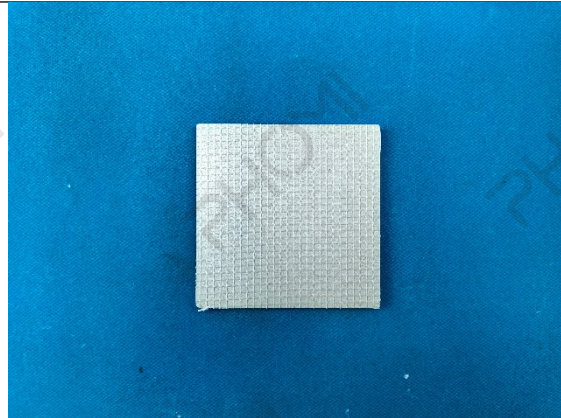
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Test Item 5



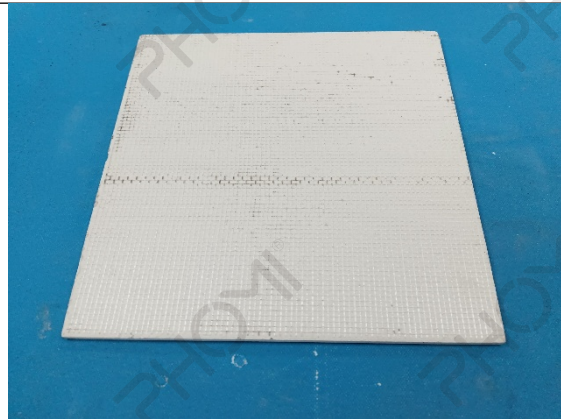
Test Item 6 – Front View



Test Item 6 – Back View



Test Item 7 – Front View



Test Item 7 – Back View

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Test Item 1: Flexural Tensile Strength

Sample Description: See photo

Test Method: EN 15286:2013 Section 4.2.5 & EN 14617-2:2016

Test Condition:

Specimens: 200 mm×49.91 mm×5.58 mm, 10 pcs

Loading rate: 0.25 MPa/s

Span: 180 mm

Test Result:

Specimens No.	1	2	3	4	5	6	7	8	9	10
Flexural Tensile Strength (MPa)	6.88	7.79	6.17	9.35	7.65	9.13	8.40	9.08	5.89	5.77
Mean value (MPa)	7.6									



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Test Item 2: Durability of Flexural Strength against Freeze and Thaw cycles

Sample Description: See photo

Test Method: EN 15286:2013 Section 4.2.13 & EN 14617-5:2012 & EN 14617-2:2016

Test Condition:

Specimens: 200 mm×49.68 mm×5.87 mm, 5 pcs

Condition: ①40°C, 48h→②Immerse in 23°C water for 48h→③ Freeze in -20°C for 4h→④ Thaw in 20°C water for 2h. ③→④ as a cycle, There are 25 cycles→⑤40°C, 48h

Loading rate: 0.25 MPa/s

Span: 180 mm

Test Result:

Specimen No.	1	2	3	4	5
Flexural strength after Freeze and Thaw Resistance (MPa)	7.14	5.68	6.14	6.68	6.09
Mean value (MPa)	6.4				
Coefficient of freeze/thaw resistance in flexural strength (after 25 freeze/thaw cycles) K_{f25}	83%				

Note:

1. K_{f25} = (Flexural strength after 25 freeze/thaw cycles×100) / Flexural strength after dried condition, unfrosted specimens.

2. The results of flexural strength average value (7.6 MPa) after dried condition are extracted from the test item 1.



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Test Item 3: Thermal Shock Resistance

Sample Description: See photo

Test Method: EN 15286:2013 Section 4.2.7 & EN 14617-6:2012 & EN 14617-2:2016

Test Condition:

Specimens: 200 mm×49.94 mm×5.53 mm, 7 pcs

Condition: ①40°C, to constant mass→②cool down in desiccator→③ 70°C for 18h→

④ Immersed in 15°C water for 6h. ③→④as a cycle, 20 cycles in total→⑤40°C, 48h

Loading rate: 0.25 MPa/s

Span: 180 mm

Test Result:

Test Item	Test Result
Appearance	After 20 cycles of thermal shock: For each specimen, there is no obvious change of color, no obvious appearance of spots, no obvious swelling, no obvious cracking, no obvious scaling or exfoliation.
Change in mass, Δm	0.19 %
Flexural strength after thermal shock resistance	6.4 MPa
Coefficient of thermal shock resistance as change in flexural strength, $\Delta R_{f, 20}$	15.8 %

Note:

1. $\Delta m, \% = (\text{Dried mass before thermal shock} - \text{Dried mass after thermal shock}) \times 100 / \text{Dried mass before thermal shock}$
2. $\Delta R_{f, 20}, \% = (\text{Flexural strength before dried condition} - \text{Flexural strength after thermal shock resistance}) \times 100 / \text{Flexural strength before dried condition.}$
3. The results of flexural strength average value (7.6 MPa) after dried condition are extracted from the test item 1.



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Test Item 4: Linear Thermal Expansion Coefficient

Sample Description: See photo

Test Method: EN 15286:2013 Section 4.2.8 & EN 14617-11:2005

Test Condition:

Specimen: 50mm×10mm×4.80mm

Heating rate: 3°C /min

Linear temperature range: 30°C to 60°C

Test result:

Specimen No.	1	2	3	Average value
Linear Thermal Expansion Coefficient	$-3.04 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$	$-4.03 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$	$-2.16 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$	$-3.08 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$

Test Item 5: Dimensional Stability

Sample Description: See photo

Test Method: EN 15286:2013 Section 4.2.9 & EN 14617-12:2012

Test Condition:

Specimen: 300 mm×300 mm×4.65 mm, 1 pcs

Test Result:

Test Item	Test Result
Dimensional Stability	Vertical displacement: 0.95 mm Classification: C (see note)

Note: Vertical displacement after the test, Class A: <0.3 mm; Class B: ≥0.3 mm and <0.6 mm; Class C: ≥0.6 mm.

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Test Item 6: Apparent Density and Water Absorption*

Test Method: With Reference to EN 15286:2013 Clause 4.2.4 & EN 14617-1:2013

Test Condition:

Specimen: 100mm×100mm×7.6mm, 6pcs

Treatment condition: Dry at 70°C to constant weight → Immerse in water to constant weight

Test Result:

Test Item	Test Result						
	Individual Value						Average Value
Apparent Density (kg/m³)	1478	1440	1521	1492	1505	1475	1485
Water Absorption (%)	22.54	24.29	22.04	22.98	23.06	23.35	23.04

*Test Item was carried out by other laboratory in SGS group.



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Test Item 7: Thermal Conductivity*

Test Method: With Reference to EN 15286:2013 Clause 4.2.6 & EN ISO 13787:2003 Clause 5.1 & EN 12667:2001 Heat Flow Meter Method

Test Condition:

Specimen: 297mm×296mm×7.6mm, 1pc

Mean temperature: 23°C

Temperature difference: 10°C

Test Result:

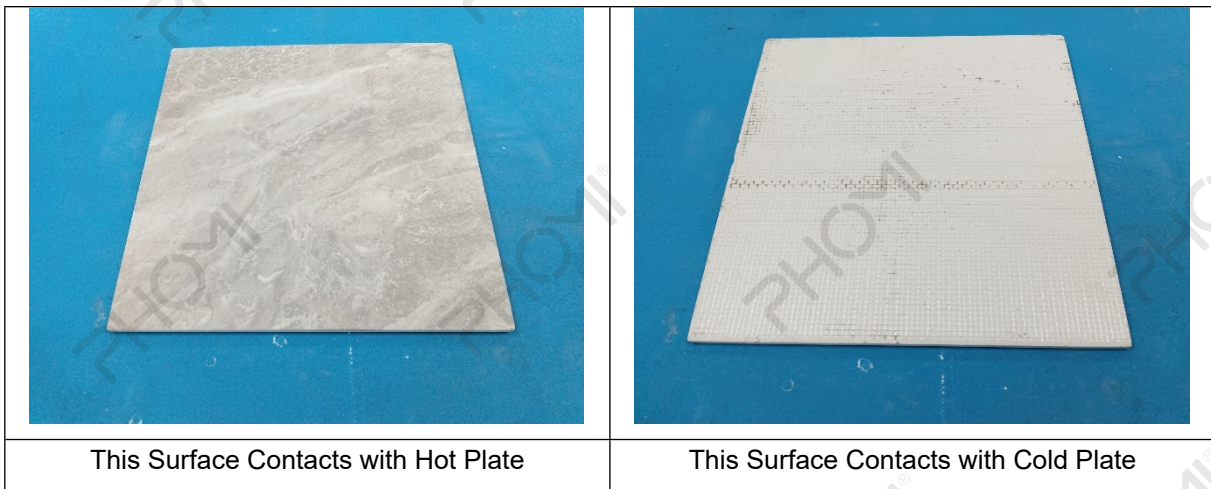
Test Item	Test Result
Thermal Conductivity	0.1 W/(m·K)

Note:

- The test result can not be compared with other results obtained from different test conditions, and should not be cited to the use condition directly.

*Test Item was carried out by other laboratory in SGS group.

Specimen Photo(s):



Appendix information:

The test report shall only be used for clients' scientific research, teaching, internal quality control, product research and development, etc., and just for internal reference.

*****End of report*****



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