TEST REPORT

scan to see the report

GZIN2305000215CM01

No. : GZIN2305000215CM01_EN

Date : 2023-07-21

CUSTOMER NAME: RELLE DECORATION MATERIAL GUANGZHOU CO.,LTD.

ADDRESS: NO.306 BAISHI INDUSTRY PLAZA, NO.280JIXIAN ROAD, YONGPING STREET, BAIYUN AREA, GUANGZHOU

Sample Name : PVC FLOORING

Product Specification : 2 x 20 x 2 mm

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.

****

Date of Receipt : 2023-05-23

Testing Period : 2023-05-23 ~ 2023-07-21

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
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch.

Tobby Yang
Authorized signatory

Room 101, Building 3, No.1501, Kaichuang Avenue, Huangpu District, Guangzhou, Guangdong Province, China 510760
中国・广东・广州市黄埔区开创大道1501号3栋101房 邮编：510760
t (86-20) 82155688 www.sgsgroup.com.cn
t (86-20) 82155688 sgs.china@sgs.com

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Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Residual Indentation	ISO 24343-1:2007	0.02mm	/
2	Determination of Staining and Resistance to Chemicals	ISO 26987:2008	See Result	/
3	Effect of a Castor Chair	ISO 4918:2016+Amd.1:2018	No visible damage	/
4	Wear Resistance	EN 649:2011 & EN 660-2:1999+ A1:2003	Wear group: T	/
5	Dynamic Coefficient of Friction	EN 13893:2002	X Direction: 0.32 Y Direction: 0.32	/
6	Thermal Conductivity and Thermal Resistance	EN 12664:2001 Heat Flow Meter Method	See Result	/
7	Colour Fastness To Light	ISO 105-B02:2014, Method 3	better than 6	/
8	Formaldehyde Emission	With reference to EN 717-1:2004, analysis was performed by UV-Vis.	ND	/
9	Antimicrobial activity test	ASTM G 21-15(2021)	1 Grade	/
10	Test for resistance to bacteria	ISO 846-2019	See Result	/

Note: Pass : Meet the requirements;

Fail : Does not meet the requirements;

N/A : Not Apply to the judgment.

Room 101, Building 3, No.1501, Kaichuang Avenue, Huangpu District, Guangzhou, Guangdong Province, China 510760
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Original Sample Photo:

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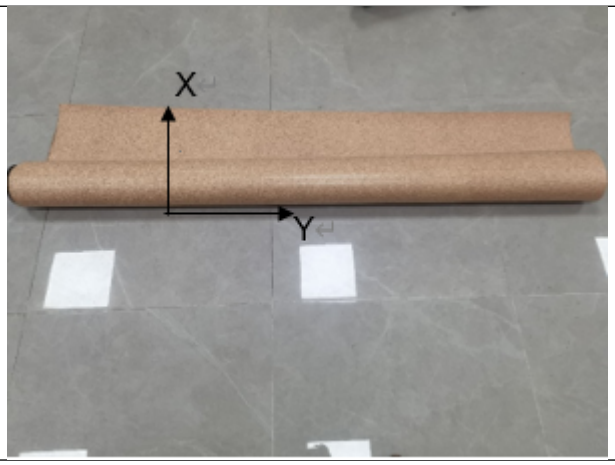
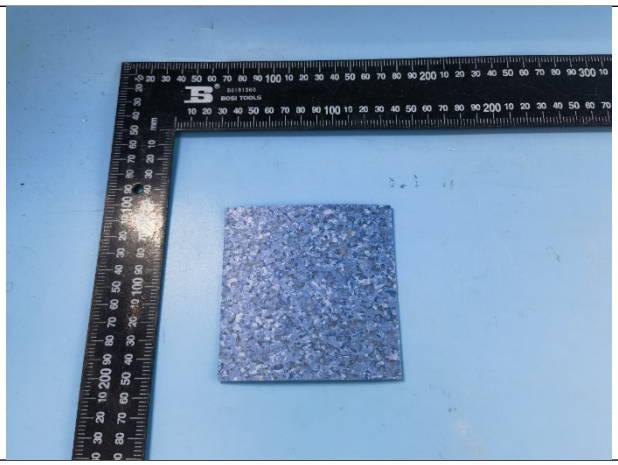
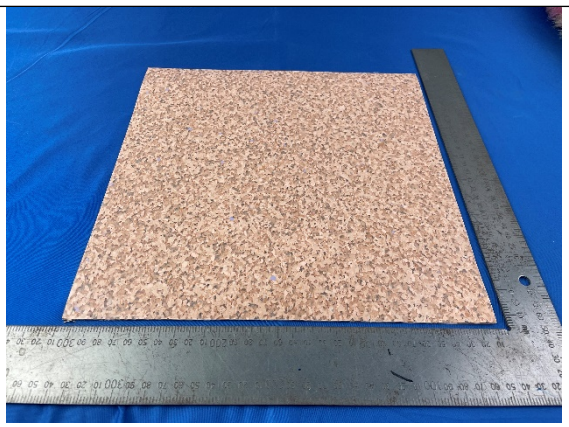
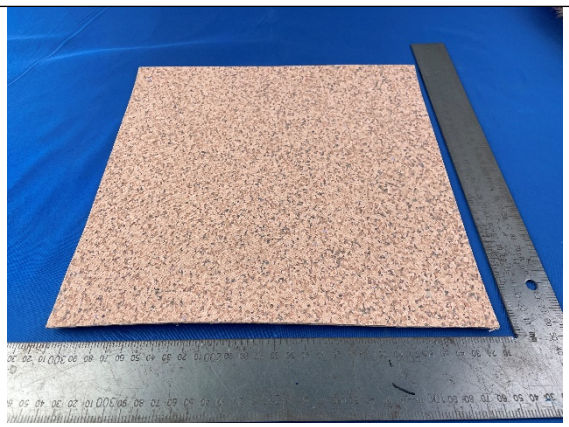
<tr><td> 
</td><td>  </td></tr>
<tr><td>Test Item 1, 2, 3, 5</td><td>Test Item 4</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Front View</td><td>Back View</td></tr>
<tr><td colspan="2">Test Item 6</td></tr>
</table>

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	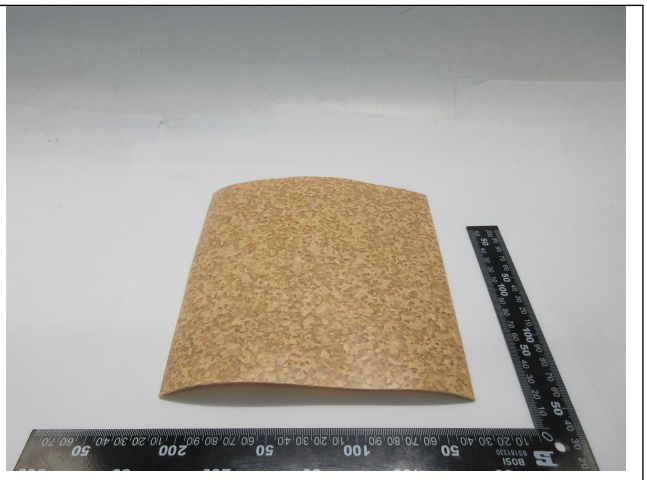
Test Item 7	Test Item 8
	
Test Item 9	Test Item 10

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中国·广东·广州市黄埔区开创大道1501号3栋101房 邮编：510760
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TEST REPORT

Test Item 1: Residual Indentation

Sample Description: See photo

Test Method: ISO 24343-1:2007

Test Condition:

Specimen: 60mm×60mm×2mm

Diameter of indenter: 11.30mm

Applied load: 500N

Load time: 150min

Recovery time: 150min

Test Result:

Test Item	Test Result
Residual Indentation	0.02mm

Note: All test specimens were cut from the sample.

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Test Item 2: Determination of Staining and Resistance to Chemicals

Sample Description: See photo

Test Method: ISO 26987:2008

Test Condition:

Specimen: 100mm×100mm×2mm

Procedure: Apply the contaminant to the center of the sample to cover an area of 300mm^2~400mm^2 and let the contaminant to stay for the specified contact time. The main duration of contact shall be 2h. If a stain appears on the test piece after 2h, a new test shall be conducted for a period of 30 min. After removing the contaminant, evaluate the index.

Test Result:

No.	Stain agent	Contact time	Result (Index)
1	Acetone	2h	0
2	Coffee	2h	0
3	Sodium hydroxide solution (25%)	2h	0
4	Hydrogen peroxide solution (30%)	2h	0
5	Shoe polish	2h	0

Note:

1. All test specimens were cut from the sample.
2. According to ISO 26987:2008 table 1: index 0: Not affected

Test Item 3: Effect of a Castor Chair

Sample Description: See photo

Test Method: ISO 4918:2016+Amd.1:2018

Test Condition:

Cycles: 25000

Load: 90kg

Type of castors: Type W

Test result:

No visible damage.

Note: All test specimens were cut from the sample.

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中国·广东·广州市黄埔区开创大道1501号3栋101房 邮编：510760

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t (86-20) 82155688 sgs.china@sgs.com

Test Item 4: Wear Resistance

Sample Description: See photo

Test Method: EN 649:2011 & EN 660-2:1999+ A1:2003

Test Condition:

Load: 1000g/wheel (total 2000g)

Wheel: S-39

Abrasive material: Corundum, 98 % of the grain size between 45~75μm

Flow rate of abrasive: (21 ± 3) g/min

Speed: 60 revolutions/min

Cycles: 5000 Revolutions

Test result:

Test Item	Test result	
	Volume loss, Fv	Wear group
Wear Resistance	1.9mm^3/100 revolutions	T

Note:

1. All test specimens were cut from the sample.
2. Classification requirements for wear groups in EN 649:2011:

Characteristic	Requirements for wear group			
	T	P	M	F
Volume loss, Fv(mm^3)/100revolutions	Fv≤2.0	2.0＜Fv≤4.0	4.0＜Fv≤7.5	7.5＜Fv≤15.0

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中国・广东・广州市黄埔区开创大道1501号3栋101房 邮编：510760
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Test Item 5: Dynamic Coefficient of Friction

Sample Description: See photos

Test Method: EN 13893:2002

Test Condition:

Specimen thickness: 2mm

Slider type: mix (leather slider and shoe rubber slider)

Mass of the loaded slider: 10kg

Testing speed: 0.20m/s

Test Result:

Test Item	Test Result	
Dynamic Coefficient of Friction	X Direction	0.32
	Y Direction	0.32

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中国·广东·广州市黄埔区开创大道1501号3栋101房 邮编：510760
t (86-20) 82155688 www.sgsgroup.com.cn
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Test Item 6: Thermal Conductivity and Thermal Resistance

Test Method: EN 12664:2001 Heat Flow Meter Method

Test Condition:

Specimen: 301mm×301mm×5.7mm, 1pc

Density: about 1352kg/m^3

Mean temperature: 25℃

Temperature difference: 10℃

Lab Environmental Condition: (23±2)℃, (50±5)%RH

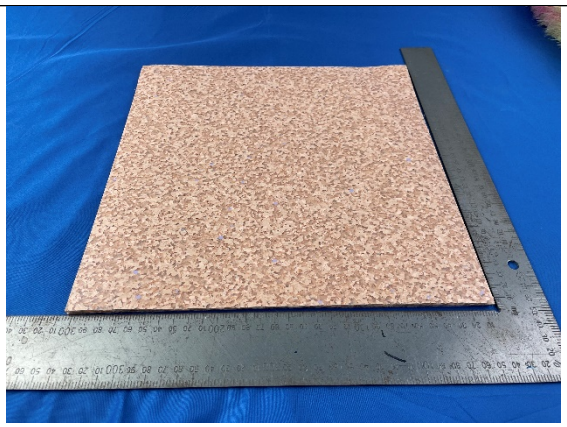
Test Result:

Test Item	Test Result
Thermal Conductivity	0.116 W/(m·K)
Thermal Resistance	0.049 (m^2·K)/W

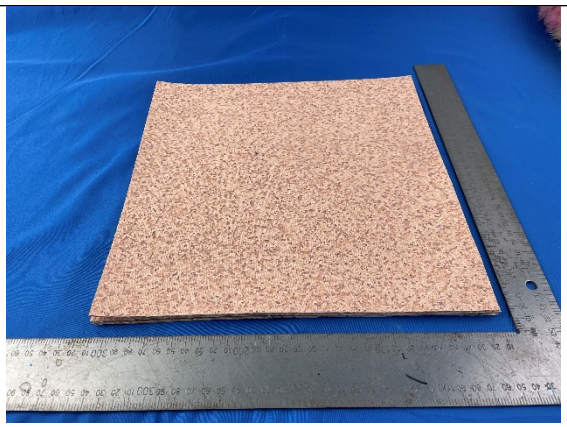
Note:

1) 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.
2) Test specimen was stacked by three pieces.
3) Test Item 6 was carried out by other laboratory in SGS group.

Specimen Photo(s):



This Surface Contacts with Hot Plate



This Surface Contacts with Cold Plate

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center
Room 101, Building 3, No.1501, Kaichuang Avenue, Huangpu District, Guangzhou, Guangdong Province, China 510760
中国・广东・广州市黄埔区开创大道1501号3栋101房 邮编：510760
t (86-20) 82155688 www.sgsgroup.com.cn
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Test Item 7: Colour Fastness To Light

Sample Description: See photo

Test Method: ISO 105-B02:2014; Method 3, use Xenon arc lamp, Exposure Cycle: A1, no flip-flop mode was used

Test Result:

Comparison up to blue wool reference 6	Unit	**A**	Requirement
Grade (B.W.S)	-	better than 6	-

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Test Item 8: Formaldehyde Emission

Sample Description: Brown sheet

Test Method: With reference to EN 717-1:2004, analysis was performed by UV-Vis.

Test Result(s):

Test Item(s)	Unit(s)	MDL	001
Formaldehyde	mg/m³	0.050	ND

Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

(5) Reference Limit: EN13986:2004(E)

(6) Formaldehyde class E1: ≤0.124 mg/m3 air

Formaldehyde class E2: ＞0.124 mg/m3 air

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (*w*=0) stated in ILAC-G8:09/2019.

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Test Item 9: Antimicrobial activity test

Sample Description: Sheet sample.

Test Method: ASTM G 21-15(2021) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

Test organism(s)	Concentration of spores (spores /mL)	Rating observed growth on specimens (after 28 days)
*Test organism	1.0x10^6	1 Grade

Notes :

*Test organism

Aspergillus brasiliensis ATCC 9642, Talaromyces pinophilus ATCC 11797, Chaetomium globosum ATCC 6205, Trichoderma virens CICC 2535 (equate to ATCC 9645), Aureobasidium pullulans ATCC 15233

History name of test organism

Aspergillus brasiliensis Historically known as A.niger.

Talaromyces pinophilus Historically known as P.pinophilum.

Trichoderma virens Historically known as Gliocladium virens.

According to ASTM G 21-2015(2021) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi, observed fungi growth rating on the specimens include:

0-None

1-Traces of growth (less than 10%)

2-Light growth (10 to 30%)

3-Medium growth (30 to 60%)

4-Heavy growth (60% to complete coverage)

The microscope(50 X) was used to confirm the observation.

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Test Item 10: Test for resistance to bacteria

Sample Description: Sheet sample.

Test Method: ISO 846-2019 Plastics-Evaluation of the action of microorganisms Method C:

Resistance to bacteria

Test organism(s)	Pseudomonas aeruginosa ATCC 13388
Spores suspension (CFU/mL)	1.0x10^6
Sample: 28 days (I)	0
Sterile specimens: 28 days (S)	0
Change in mass: Δm	0

Notes :

Test conditions:

The dimensions of the specimens:50 mm×50 mm.

Incubation temperature:29±1 ℃.

Cleaning: dip specimens into an ethanol-water mixture for 1 min and dry at 45 ℃ for 4 h.

Assessment of bacteria growth on the specimens according the assessment of fungal growth

0: No growth apparent under the microscope.*

1a: No growth visible to the naked eye, but clearly visible under the microscope. Covering up to 25% of the test surface.

1b: No growth visible to the naked eye, but clearly visible under the microscope. Covering up to 50% of the test surface.

1c: No growth visible to the naked eye, but clearly visible under the microscope. Covering more than 50% of the test surface.

2: Growth visible to the naked eye, covering up to 25% of the test surface.

3: Growth visible to the naked eye, covering up to 50% of the test surface.

4: Considerable growth, covering more than 50% of the test surface.

5: Heavy growth, covering the entire test surface.

*The result is confirmed by microscopy with magnification (50 X).

Test side:the smooth side.

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