Test Report No.: CZHL2111007949HI Date: DEC. 16, 2021

CHANGZHOU DACHUAN ENVIRONMENTAL PROTECTION TECHNOLOGY DEVELOPMENT CO.,LTD.
NO.2,CHUANGSHENG ROAD,INDUSTRIAL CONCERNTRATION AREA,LUOYANG TOWN,WUJIN DISTRICT, CHANGZHOU, JIANGSU, CHINA

The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Description	:	MSPC (MINERAL STONE POLYCOMPOSITE)
Requested Age Grading	:	15
		**********
Sample Receiving Date	:	DEC. 03, 2021
Testing Period	:	DEC. 03, 2021 TO DEC. 16, 2021
Testing Performed	:	Follow selected test(s) as requested by client.

	Test Requirement	Conclusion
1	Resilient floor coverings — Determination of dimensional stability and curling after exposure to heat (ISO 23999:2018)	See Result

*** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) ***

Berix Li
Authorized Signatory

1. Resilient floor coverings — Determination of dimensional stability and curling after exposure to heat (ISO 23999:2018)

1) Number of test sample: 3 pieces

2) Test details see below table：

Clause	Test Description	Result
Determination of dimensional stability and curling after exposure to heat	1. Condition the test specimens on a flat surface, such as a table surface, to ensure that they are in contact with the support plate uniformly during the measurements. Condition the test specimens at a temperature of 23 °C ± 2 °C and relative humidity of 50 % ± 5 % for a minimum of 24 h. 2. Make eight scores on each sheet or tile test specimen approximately 20 mm from the edges. Make four scores in each direction to form four crosses, at a distance of 200 mm ± 1 mm. If utilized for planks, a different spacing is required for width. Mark the two reference points for measurement on the top of the test specimen and measure, with the wear surface up, on the block and the optical bench assembly, to ensure that any embossing along the edge of the test specimen wear surface does not affect the measurements. To make the scores more easily visible, the scores may be marked with a solution of dye in aqueous alcohol (i.e. whiteboard marker or equivalent). Place each test specimen on a support plate with its surface facing upward. Condition the test specimen. 3. Measure the vertical distance between the support plate and the wear surface of the test specimen in four places around the edge (usually the corners), where the distance is greatest. Carry out the measurements with the micrometer. CAUTION — When handling test specimens and making measurements, to avoid distortion, do not apply undue force to the test specimen. 4. On each test specimen, determine the length of four measurement sections: two in the manufacturing direction	Dimensional stability: MD: -0.05% AMD: -0.05% Curling: 0.5mm

Clause	Test Description	Result
	(MD) of the flooring material and two in the transverse or across-manufacturing (TD or AMD) direction. Put the rigid plate on top of the test specimen and measure the length between the crosses formed by the scores. Start the heat exposure portion of the test within 1 h of making the initial dimensional measurements. 5. Place the test specimens horizontally onto support plates, previously placed in the oven. Allow to come to test temperature (80 ± 2) °C (standard default temperature unless otherwise cited in a flooring specification document). Maintain the test specimens at this temperature for $6h_0^{+15}\min$ (standard default time, unless otherwise cited in a flooring specification document) in the oven. If a different temperature and/or time is utilized, the test sheet shall accurately reflect the conditions used to test the curling and dimensional stability. The same tolerances for temperature and time, as required for default conditions, apply to any different set of temperature/time conditions utilized. 6. Remove the test specimens from the oven. Allow the test specimens to recondition for 24 h (unless otherwise specified for the product). Do not remove the test specimens from the metal plate until the reconditioning time has elapsed and the measurements are to be performed. 7. After reconditioning, measure the dimensional changes to the test specimen. 8. Re-measure curling as described before. Make sure that the optical device is at the same reference points for both the initial and final measurements. 1) For sheet, tile and if utilized on plank test specimens Make sure to place the rigid metal plate on top of the specimens and re-measure the length between the crosses formed by the scores, i.e. the new distance of each measurement section.	

Clause	Test Description	Result
	Make sure that the optical device is at the same reference points for both the initial and final measurements. 2) For tile and plank (partial) test specimens measured using block and dial gauge Place the test specimen on the block and dial gauge. Record the length at the specified location. For planks, use the calibrated shim or spacer block to allow the measurement of plank width differences with the block and dial gauge apparatus. 9. Calculation and expression of results 9.1 For curling Calculate the mean value of the four measurements for each test specimen. The initial and final values are expressed separately. Calculate the mean value for the three test specimens. Express the results in millimetres to the nearest 0,5 mm. 9.2 For dimensional stability For each of the test directions (machine direction and across machine direction), record the variations for the six length measurements (two readings from three test specimens). Calculate the dimensional change for each measurement section related to the initial length. The linear change, $dL_{complete}$, expressed as a percentage, is given by the following formula: $$dL_{complete} = \frac{(L_0 - L_1)}{L_0} \times 100$$ Where： $dL_{complete}$ is the linear change in dimension(s) after complete test, expressed as a percentage; L_0 is the initial length L_1 is the length after test	

Photo Appendix

Photo relative to overall specimen:

Received Sample (front view)

Received Sample (back view)

Result/Rating/Record Key(s)

I. Result/Rating Keys: P = Pass = Meet; F = Fail = Not Meet; N/A = Not applicable = Not suitable; NR = NC = Test not conduct/requested per client request; TT = Test terminated due to the earlier failure of last test.

II. Record Keys: “C:” means Claimed parameter; “A:” means Actual recorded from test; “D:” means Data for reference only.

General Report Note(s)

A. N.B. Only applicable clauses were shown.

B. (1) 1mg/kg = 0.0001% (2) MDL = Method Detection Limit (3) ND = Not Detected (< MDL)
(4) “-“ = Not Regulated

C. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

D. This document cannot be used for publicity, without prior written approval of the SGS.

E. Since the data and / or information above division line of front page is provided by the applicant, the relevant results or conclusions of this report are only made for these data and / or information, SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion. Testing results only apply to the sample as received.

F. The declaration of conformity is only based on the actual value of laboratory activity, measurement uncertainty of the results not take into account.

G. Since the above deviation of testing method is provided by the applicant, the relevant results or conclusions of this report are only made for the deviation method, SGS is not responsible for the validity of the result and /or conclusion resulted from the deviation.

*** End of Report ***

Building 30, No. 47, Qingyang North Road, Tianning District, Changzhou, China 213017 t (86-519)85587753 www.sgsgroup.com.cn
中国·常州·天宁区青洋北路47号30号楼 邮编: 213017 t (86-519)85587753 e sgs.china@sgs.com