

TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 1 of 14

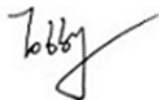
CUSTOMER NAME: FOSHAN MODERNSTONE CO., LTD
ADDRESS: NO. 15-16, TOWER 3-2, ZONE A, FOSHAN INTERNATIONAL CERAMIC AND SANITARY CITY, JIHUA WEST ROAD, FOSHAN, GUANGDONG PROVINCE.

Sample Name : ARTIFICIALQUARTZSTONE
Manufacturer : FOSHAN MODERNSTONE CO., LTD
Other Information : Item No.: MC1135
Country of Origin: CHINA
Supplier: FOSHAN MODERNSTONE 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. : GZHL2207123178OT
Date of Receipt : Jul 28, 2022
Testing Start Date : Jul 28, 2022
Testing End Date : Aug 23, 2022
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. GZ Branch Testing
Center



Tobby Yang
Authorized signatory



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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 2 of 14

Summary of Results:

No.	Test Item	Test Method	Result		Conclusion
1	Stain resistance	With reference to IAPMO Z124.6-2017 Section 5.11 and Client's requirement	See test result		/
2	Density	With reference to ASTM D792-20 Method A and Client's requirement	2.42g/cm ³		/
3	Compressive Strength	With reference to ASTM C170/C170M-17 and Client 's requirement	See test result		/
4	Boiling Water Resistance	With reference to ANSI NEMA LD 3-2005 Section 3.5	No effect		/
5	Resistance to Freeze-Thaw Cycling	With reference to ASTM C1026-13(2018) and Client's requirement	See test result		/
6	Moh's Hardness	EN 101:1991	Moh's Hardness 6		/
7	Water Absorption	With reference to ASTM C373-18 and Client's requirement	0.04%		/
8	Rockwell Hardness	ASTM D785-08(2015) Procedure A	115M		/
9	Flexural Test	ASTM D790-17 Procedure A	Flexural Strength	51.4MPa	/
			Flexural Modulus	25300MPa	
10	Coefficient of Linear Thermal Expansion	With reference to ASTM D696-16 and client's requirement	10.730×10 ⁻⁶ /°C		/

Note: Pass : Meet the requirements;
Fail : Does not meet the requirements;
/ : Not Apply to the judgment.



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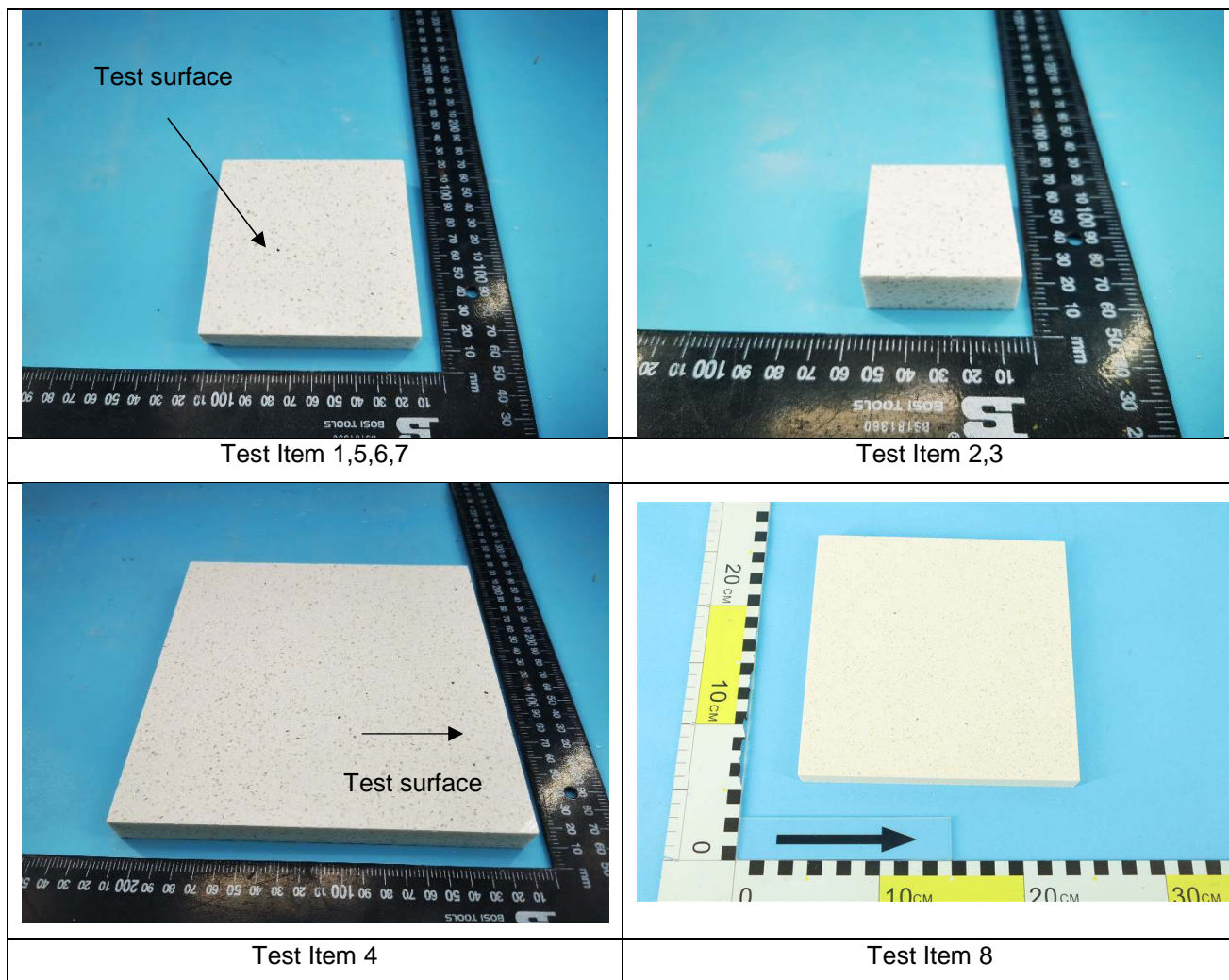
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No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 3 of 14

Original Sample Photo:

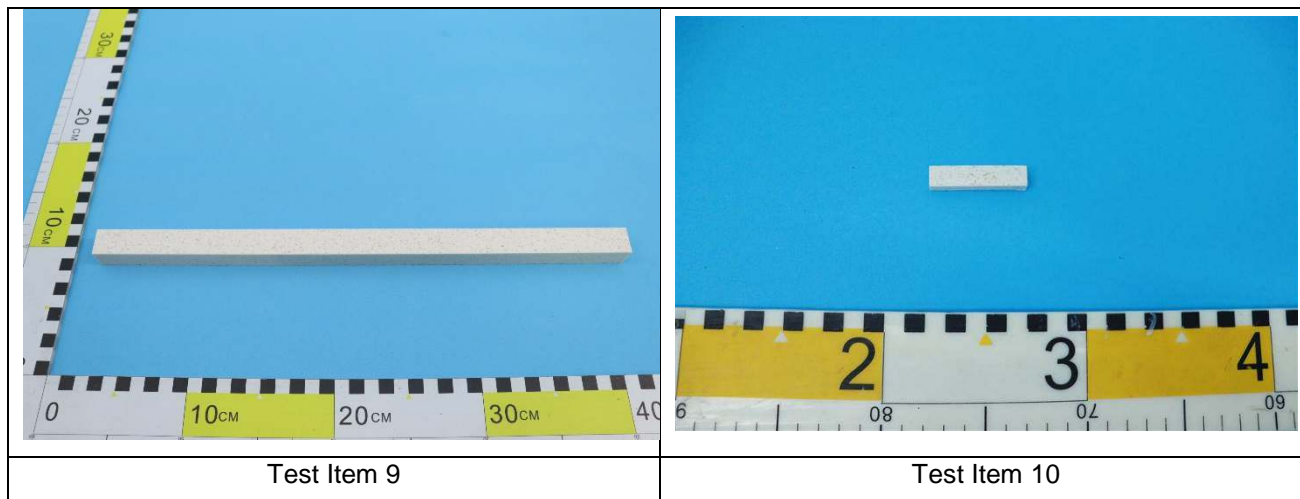


TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 4 of 14



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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 5 of 14

Test Item 1: Stain Resistance

Sample Description: See photo

Test Method: With reference to IAPMO Z124.6-2017 Section 5.11 and Client's requirement

Test Condition:

Specimen: 100mm×100mm×19.74mm

Test reagents: see table 1

Contact time: 16h

Test Result:

Test Item	Test Result
Stain Resistance	Stain resistance total rating: 54 The maximum stain depth: 0.024mm

Table 1: Test result of stain resistance test

Reagent	Rating	
	Covered	Uncovered
Black crayon	5(stain depth:0.009mm)	5(stain depth:0.014mm)
Black liquid shoe polish	2	2
Blue washable Ink	1	1
Gentian violet solution	5(stain depth:0.017mm)	5(stain depth:0.020mm)
Beet juice	1	1
Grape juice	1	1
Lipstick	5(stain depth:0.016mm)	5(stain depth:0.021mm)
Hair dye	1	1
Iodine solution	5(stain depth:0.020mm)	5(stain depth:0.024mm)
Wet tea bag	1	1
Total rating	54 (The maximum stain depth: 0.024mm)	

Note: Cleaning procedures:

1. The specimen shall be washed with tap water and cheesecloth or soft bristle brush using 20 scrub cycles with normal hand pressure and dried by blotting. A stain shall be defined as a change in surface texture or a change in color. Specimens not staining at this point shall have a rating of 1-non-staining.



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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 6 of 14

2. Stains present after initial wash with water shall be washed with alcohol or naphtha using cheesecloth or soft bristle brush for 20 cycles using normal hand pressure. The specimens shall be washed with tap water and dried by blotting. Specimens not staining at this point shall have a rating of 2-removable by alcohol or naphtha.

3. Stains present after the aforementioned cleanings shall be scrubbed 20 scrub cycles with standard scouring powder and wet cheesecloth or soft bristle brush using normal hand pressure. The specimens shall be washed with tap water and dried by blotting. Reduction of gloss due to scrubbing with standard scouring power shall not constitute staining. Specimens whose stain is removed by the standard scouring powder shall have a rating of 3-removable by first application of standard scouring powder.

4. Stains present after the aforementioned cleanings shall be scrubbed 40 scrub cycles with standard scouring powder and wet cheesecloth or soft bristle brush using normal hand pressure. The specimens shall be washed with tap water and dried by blotting. Reduction of gloss due to scrubbing with standard scouring power shall not constitute staining. Specimens whose stain is removed by this additional shall have a rating of 4-removable by two standard scouring powder scrubblings.

5. Any specimen with stain remaining after the aforementioned cleanings shall have a rating of 5. Any specimen with stain remaining after the above cleanings shall be tested to determine the depth of staining. The affected area shall be cut and lightly sanded with 600 grit abrasive cloth until the stain is removed. The depth shall be measured to the nearest 0.025mm.

Test Item 2: Density

Sample Description: See photo

Test Method: With reference to ASTM D792-20 Method A and Client's requirement

Test Condition:

Deionized water, $23 \pm 2^{\circ}\text{C}$

Test Result:

Test Item	Test Result
Density	2.42g/cm ³



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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 7 of 14

Test Item 3: Compressive Strength

Sample Description: See photo

Test Method: With reference to ASTM C170/C170M-17 and Client's requirement

Test Condition:

Specimen: 50.92mm×51.14mm×19.50mm (two layers plied up to test)

Dry Condition: Dry in an oven at 60°C for 48h→Cool them to room temperature in a desiccator

Wet Condition: Immerse in distilled water at 22°C for 48h

Testing Speed: 0.25MPa/s

Test Result:

Dry Condition:

Specimen No.	1	2	3	4	5
Individual compressive strength value (MPa)	195.85	195.49	196.29	194.67	195.03
Mean compressive strength value (MPa)	195				

Wet Condition:

Specimen No.	1	2	3	4	5
Individual compressive strength value (MPa)	193.62	193.63	191.93	195.31	196.04
Mean compressive strength value (MPa)	194				

TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 8 of 14

Test Item 4: Boiling Water Resistance

Sample Description: See photo

Test Method: With reference to ANSI NEMA LD 3-2005 Section 3.5 and Client's requirement

Test Condition:

Specimen: 200mm×200mm×20.00mm

Test Surface: See photo

Contact Time: 20min

Test Result:

Test Item	Test Result
Boiling Water Resistance	No effect

Note: No effect – no change in color or surface finish

Test Item 5: Resistance to Freeze-Thaw Cycling

Sample Description: See photo

Test Method: With reference to ASTM C1026-13(2018) and Client's requirement

Test Condition:

Specimen: 100mm×100mm×20.00mm

Conditioning: ①Dry in an oven at 150℃ for 24h →②immerse in boiling water for 5h, then stop heating, Continue to immerse in water for 24h →③the temperature in the freezing chamber reaches -3℃ between 3 and 6 h →④When the temperature reach (-3±0.25)℃, engage the water pump to add water to the freezing container and adjust the overflow device to maintain a water level such that the specimens are submerged at least 1/2 their thickness, but not fully submerged →⑤When the temperature reach (5±0.25)℃, disengage the water pump. ③~⑤ as a cycle, there are 20 cycles →⑥Dry in an oven at 150℃ for 24h →⑦Cool to room temperature in a desiccator.

Test Result:

Test Item	Test Result	
	Appearance Change	Weight Loss (%)
Resistance to Freeze-Thaw Cycling	No cracking, disintegration or spalling	0.06%



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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 9 of 14

Test Item 6: Mohs' Hardness

Sample Description: See photo

Test Method: EN 101:1991

Test Condition:

Specimen: 100mm×100mm×19.74mm

Test surface: See photo

Test Result:

Test Item	Test Result
Mohs' Hardness	Moh's Hardness 6

Test Item 7: Water Absorption

Sample Description: See photo

Test Method: With reference to ASTM C373-18 and Client's requirement

Test Condition:

Specimen: 100mm×100mm×19.74mm

Condition: Dry at 150℃ until constant mass→ Cool to room temperature in desiccator →

Evacuate to a pressure of (10±5)kPa, 30min → immersed in water, 15min

Test Result:

Test Item	Test Result
Water Absorption	0.04%

TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 10 of 14

Test Item 8: Rockwell Hardness

Sample Description: Panel

Test Method: ASTM D785-08(2015) Procedure A

Test Condition:

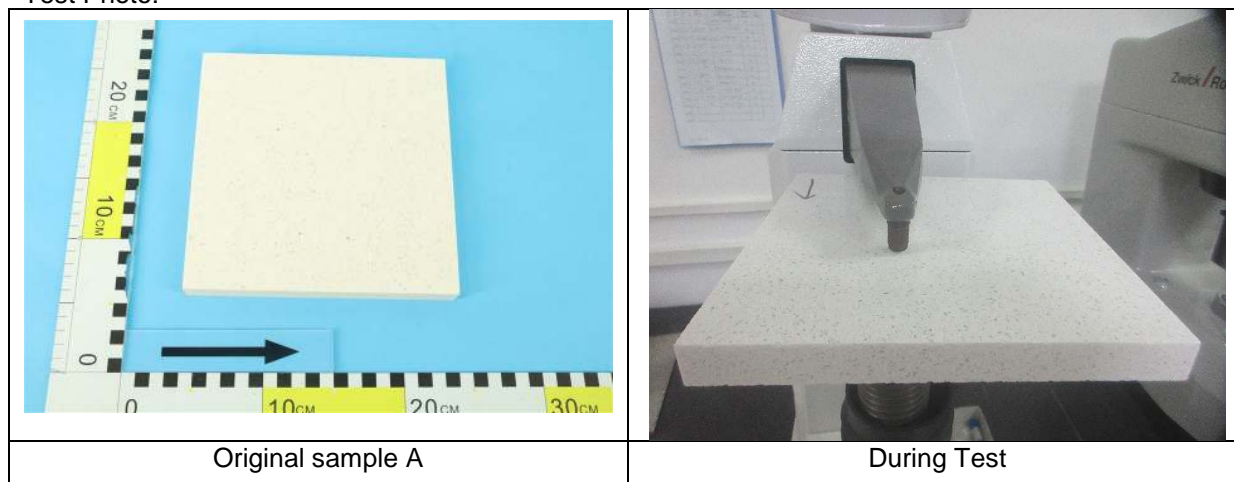
Specimen thickness: 20.07mm

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

Test Result:

Test Item	Test Result
Rockwell Hardness	115M

Test Photo:



TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 11 of 14

Test Item 9: Flexural Test

Sample Description: Panel

Test Method: ASTM D790-17 Procedure A

Test Condition:

Specimen: 400mm×20.9mm×19.6mm

Testing speed: 8.3mm/min

Span: 312mm

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

Test Result:

Test Item	Test Result
Flexural Strength	51.4MPa
Flexural Modulus	25300MPa

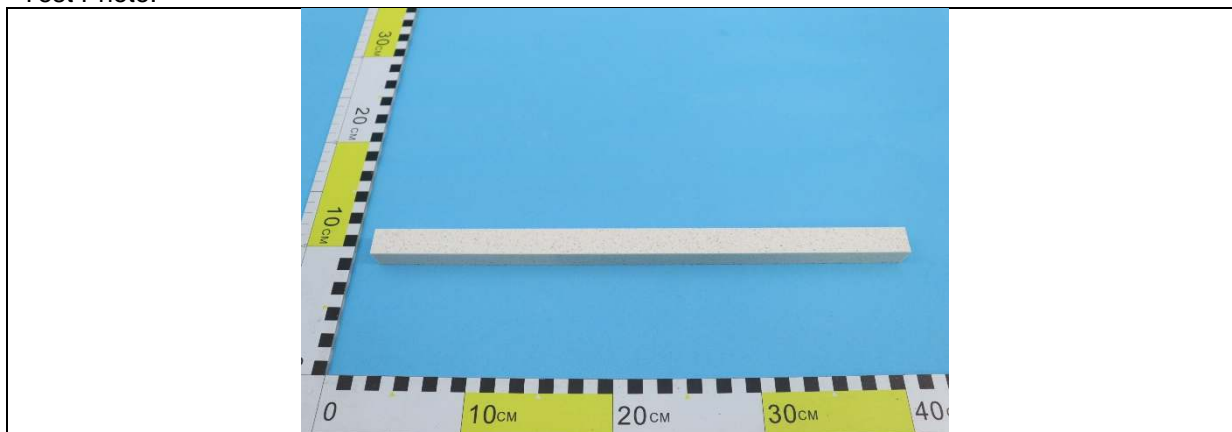
TEST REPORT

No. : GZIN2207006296CM

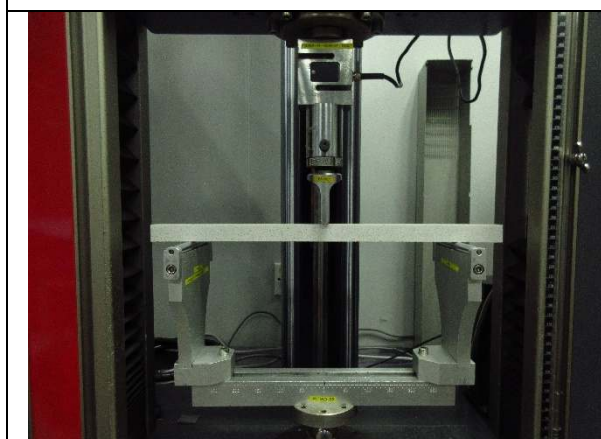
Date : Aug 23, 2022

Page: 12 of 14

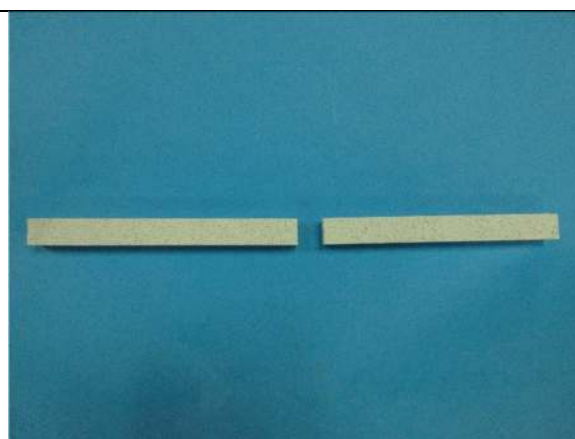
Test Photo:



Original sample A



During Test



After Test

TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 13 of 14

Test Item 10: Coefficient of Linear Thermal Expansion

Sample Description: Board

Test Method: With reference to ASTM D696-16 and client's requirement

Specimens conditioning: 23±2°C, 50±10%RH, 40h

Test Condition:

Test temperature range: -30°C~30°C

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

Test Result:

Test Item	Test Result
Coefficient of Linear Thermal Expansion	10.730×10 ⁻⁶ /°C

Note: The result was reference only as the number and material quality of specimens does not meet the requirement.

Test Photo:



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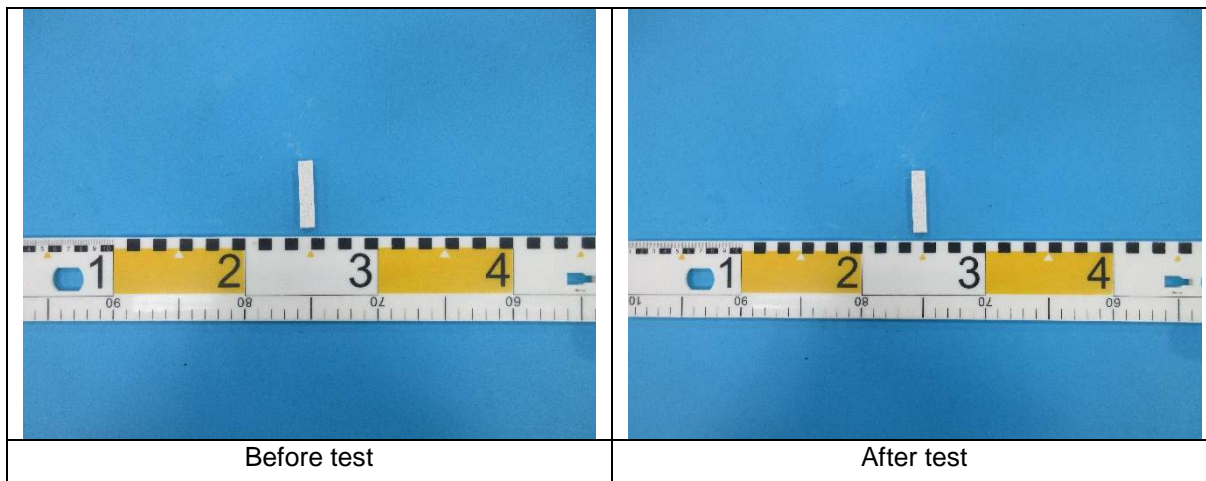
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TEST REPORT

No. : GZIN2207006296CM

Date : Aug 23, 2022

Page: 14 of 14



Note: Test Item 10 was carried out by other laboratory in SGS group.

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