



TEST REPORT

No. : XMIN181202601CCM

Date : Jan.09, 2019

Page: 1 of 9

CUSTOMER NAME: XIAMEN GLOBAL STONE IMP & EXP CO., LTD.
ADDRESS: ROOM 402B C1 BUILDER WANDA PLAZA HULI DISTRICT XIAMEN FUJIAN
CHINA 361009

Sample Name : GLASS PANEL

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.

Test required : Selected test(s) as requested by applicant
SGS Ref. No. : GZIN1812068230MR
Date of Receipt : Dec.27, 2018
Testing Start Date : Dec.27, 2018
Testing End Date : Jan.09, 2019
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)

***** To be continued*****

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd. Xiamen Branch
Testing Center

Civi Huang Authorized Signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Xiamen Branch Testing Center Commercial Construction Material Laboratory

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Summary of test results:
(Average of results)

No.	Test item(s)	Test method(s)	Test result(s)
1	Absorption by weight	Refer to ASTM C97/C97M-18	0.05 %
	Density		2232 kg/m ³
2	Abrasion resistance (polished)	Refer to ASTM C241/C241M-15 ^{e1}	36
3	Modulus of rupture	Refer to ASTM C99/C99M-15	Dry condition: 77.0 MPa
			Wet condition: 97.5 MPa
4	Flexural strength	Refer to ASTM C880/C880M-15	Dry condition: 74.6 MPa
			Wet condition: 89.9 MPa
5	Compressive strength	Refer to ASTM C170/C170M-17	Dry condition: 258 MPa
			Wet condition: 249 MPa
6	Static coefficient of friction	ASTM C1028-07	Dry condition: 0.66
			Wet condition: 0.55
7	Quantitative Analysis of Composition in Artificial Stone	FTIR, PGC-MS, XRF, XRD and TGA	See results

***** To be continued*****



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1. Absorption by weight and density

Test Method:

Refer to ASTM C97/C97M-18 Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

Specimens: Agglomerated stone with one face polished, 50mm×50mm×20mm, 5pcs

Test Result:

Specimens identification No.	1	2	3	4	5
Absorption by weight (%)	0.05	0.05	0.06	0.06	0.05
Mean water absorption (%)	0.05				
Standard deviation (%)	0.01				
Density (kg/m ³)	2234	2234	2230	2233	2231
Mean density (kg/m ³)	2232				
Standard deviation (kg/m ³)	2				

2. Abrasion resistance

Test Method:

Refer to ASTM C241/C241M-15^{e1} Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

Specimens: Agglomerated stone with one face polished, 50mm×50mm×20mm, 3pcs

Test Result:

Testing surface: polished

Specimens identification No.	1	2	3
Abrasive hardness	36	36	36
Mean abrasive hardness	36		

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3. Modulus of rupture

Test Method:

Refer to ASTM C99/C99M-15 Standard Test Method for Modulus of Rupture of Dimension Stone

Specimens: Agglomerated stone with one face polished, 200mm×100mm×20mm, 10pcs

Test Result:

Dry condition:

Specimens identification No.	1	2	3	4	5
Individual modulus of rupture value (MPa)	75.1	75.1	76.1	77.7	81.1
Mean modulus of rupture value (MPa)	77.0				
Standard deviation (MPa)	2.6				

Wet condition:

Specimens identification No.	1	2	3	4	5
Individual modulus of rupture value (MPa)	95.3	89.8	96.9	102.5	103.0
Mean modulus of rupture value (MPa)	97.5				
Standard deviation (MPa)	5.5				

***** To be continued*****



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4. Flexural strength

Test Method:

Refer to ASTM C880/C880M-15 Standard Test Method for Flexural Strength of Dimension Stone

Specimens: Agglomerated stone with one face polished, 250mm×100mm×20mm, 10pcs

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	70.5	75.7	72.9	77.3	76.6
Mean flexural strength value (MPa)	74.6				
Standard deviation (MPa)	2.9				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	92.9	78.3	88.5	95.3	94.5
Mean flexural strength value (MPa)	89.9				
Standard deviation (MPa)	7.0				

***** To be continued*****



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5. Compressive strength

Test Method:

Refer to ASTM C170/C170M-17 Standard Test Method for Compressive Strength of Dimension Stone

Specimens: Agglomerated stone with one face polished, 50mm×50mm×20mm, 10pcs

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	274	261	251	243	259
Mean compressive strength value (MPa)	258				
Standard deviation(MPa)	12				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	261	246	255	239	243
Mean compressive strength value (MPa)	249				
Standard deviation(MPa)	10				

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6. Static coefficient of friction

Test Method:

ASTM C1028-07 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method

Specimens: Agglomerated stone with one face polished, 50mm×50mm×20mm, 3pcs

Testing surface: polished

Test Result:

Static Coefficient of Friction for Dry Surface	0.66
Static Coefficient of Friction for Wet Surface	0.55

7. Test Item: Quantitative Analysis of Composition in Artificial Stone

Sample Description: Artificial stone

Test Method:

Fourier Transform Infrared Spectrometer (FTIR)

Pyrolysis-Gas Chromatography Mass Spectrometry (PGC-MS)

X-Ray Fluorescence Spectrometer (XRF)

Thermogravimetric Analyzer (TGA)

X-ray Powder Diffractometer (XRD)

Test Result:

No.	Composition	Content, Wt%
1	Unsaturated polyester (UP)	13
2	Glass	79
3	Quartz	8

Note:

1. Wt% - weight percent.
2. Quantitative data is for reference only.

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Fig.1: FTIR spectrum of original sample

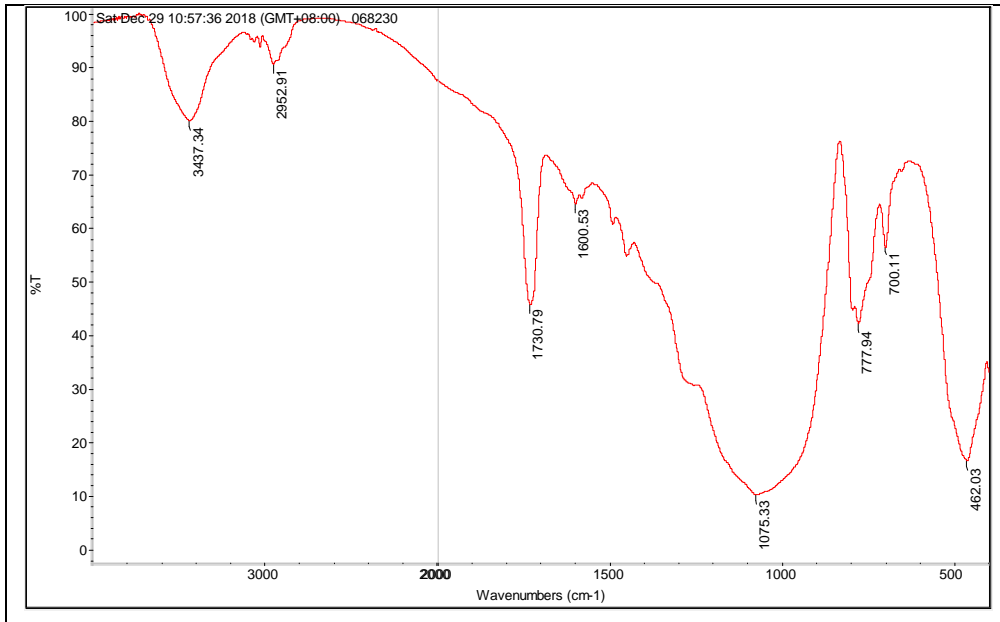
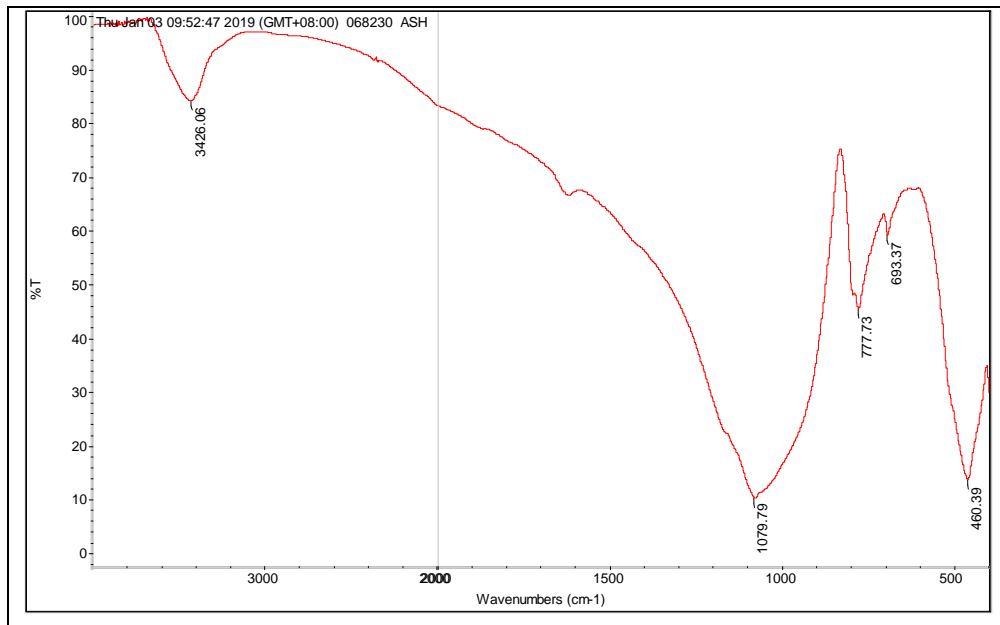


Fig.2: FTIR spectrum of calcination residue



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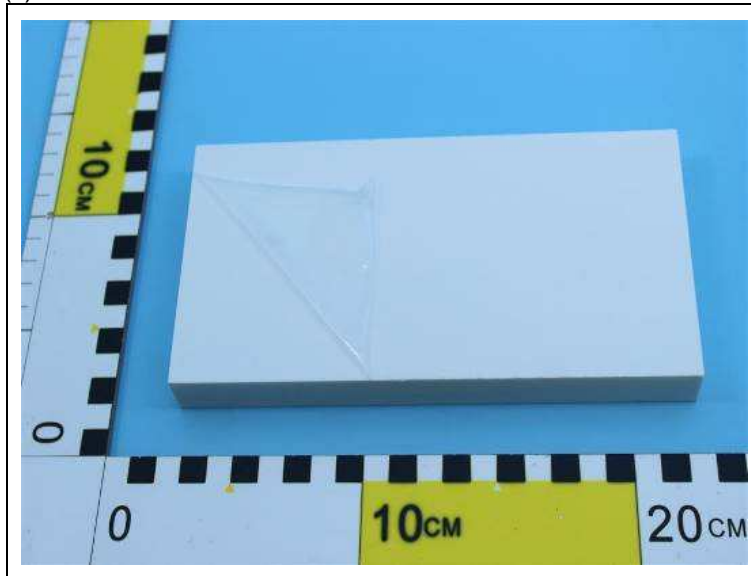
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
FTIR	NICOLET 5700	GZMR-PL-E028	2018-09-07	2019-09-06
PGC-MS	Shimadzu GCMS-QP2010	CHEM-019-P	2017-04-19	2019-04-18
EDXRF	EDX-720	CHEM-036-E	2017-04-19	2019-04-18
TGA	Discovery TGA	GZMR-PL-E194	2017-12-08	2019-12-07

Note: The above test was carried out by SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch.

Specimen photograph(s):



SGS authenticate the photo(s) on original report only

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



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