



CUARZO POLAR WHITE

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 1 of 9

FOSHAN VEMY BUILDING MATERIAL CO., LTD
NO.1 HUIYIN ROAD, SHEN CUN MECHANICAL AND PLASTICS ZONE, BAINI TOWN, SANSHUI
DISTRICT, FOSHAN CITY, GUANGDONG PROVINCE, CHINA

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

Sample Name : DIAMOND QUARTZ SURFACE
Stone type : ENGINEERED QUARTZ STONE
SGS Ref No. : XMML131205001
Manufacturer : FOSHAN VEMY BUILDING MATERIAL CO., LTD
Test required : Selected test(s) as requested by applicant
Date of Receipt : Dec.17, 2013
Test Period : Dec.17, 2013 to Jan.06, 2014

Test result(s) : For further details, please refer to the following page(s)
***** To be continued*****

Signed for and on behalf of
SGS-CSTC Ltd.



Civi Huang
Xiamen Materials Lab Technical Supervisor

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Attention: To verify the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Xiamen Branch (Xiamen Commercial Inspection General Laboratory)

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 2 of 9

Summary of test results:
(Average value)

Test item(s)	Test method(s)	Test result(s)
Absorption by weight	ASTM C97/C97M-09	0.05 %
Density		2350 kg/m ³
Abrasion resistance (polished)	ASTM C241/C241M-13	51
Flexural strength	ASTM C880/C880M-09	Dry condition: 35.8 MPa
		Wet condition: 38.0 MPa
Compressive strength	ASTM C170/C170M-09	Dry condition: 199 MPa
		Wet condition: 192 MPa
Specular Gloss(60°)	ASTM D523-08	42.5
Linear shrinkage and coefficient of thermal expansion	ASTM C531-00	36×10 ⁻⁶ /°C
Mohs' hardness (polished)	EN 101:1991	7~8
Linear thermal expansion coefficient	Refer to ISO 10545-8:1994	35×10 ⁻⁶ /°C
Abrasion resistance of unglazed tiles (polished)	Refer to ISO 10545-6:2010	39 mm ³
Radioactivity	GB 6566-2010	Class A

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client, and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Attention: To ensure the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS CST Standards Technical Services Co., Ltd.
Xiamen Branch (Xiamen) Commercial Inspection Laboratory

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 3 of 9

1. Absorption by weight and density

Test Method:

ASTM C97/C97M-09 Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

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

Test Result:

Specimens identification No.	1	2	3	4	5
Absorption by weight (%)	0.06	0.05	0.05	0.05	0.05
Mean water absorption (%)	0.05				
Density (kg/m ³)	2350	2360	2350	2350	2350
Mean density (kg/m ³)	2350				

2. Abrasion resistance

Test Method:

ASTM C241/C241M-13 Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

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

Test Result:

Testing face: polished

Specimens identification No.	1	2	3
Abrasive hardness	54	51	49
Mean abrasive hardness	51		

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client, and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) shall be retained for 90 days only.

Attention: To verify the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS CST Standards Technical Services Co., Ltd.
 Xiamen Branch Center/Commercial/Construction Material Laboratory

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)



TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 4 of 9

3. Flexural strength

Test Method:

ASTM C880/C880M-09 Standard Test Method for Flexural Strength of Dimension Stone

Specimens: Agglomerated stone, 250mm×100mm×20mm, 3pcs, one face polished

Span: 200mm

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	37.1	37.4	34.5	33.4	36.8
Mean flexural strength value (MPa)	35.8				
Standard deviation(MPa)	1.8				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual flexural strength value (MPa)	38.7	37.6	34.8	41.0	37.7
Mean flexural strength value (MPa)	38.0				
Standard deviation(MPa)	2.2				

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Attention: To verify the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS-CSI Standards Technical Services Co., Ltd.
 Xiamen Branch / 厦门分公司 / 检测实验室

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 5 of 9

4. Compressive strength

Test Method:

ASTM C170/C170M-09 Standard Test Method for Compressive Strength of Dimension Stone

Specimens: 50mm×50mm×20mm, total 20pcs, one face polished, two samples 50mm×50mm×20mm were overlaid to form one specimen 50mm×50mm×40mm

Test Result:

Dry Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	196	199	197	200	202
Mean compressive strength value (MPa)	199				

Wet Condition:

Specimens identification No.	1	2	3	4	5
Individual compressive strength value (MPa)	188	194	192	195	191
Mean compressive strength value (MPa)	192				

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To ensure the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS-CSI Standards Technical Services Co., Ltd.
 Xiamen Branch: Xiamen Commercial Consulate General Library

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 6 of 9

5. Specular gloss

Test Method:

ASTM D523-08 Standard Test Method for Specular Gloss

Specimens: Agglomerated stone, 250mm×250mm×20mm, 5pcs, one face polished

Testing surface: polished

Test Result:

Incidence angle: 60°

Specimens identification No.	1	2	3	4	5
Individual value	43.4	40.7	40.5	43.3	44.4
Mean value	42.5				

6. Linear shrinkage and coefficient of thermal expansion

Test Method:

ASTM C531-00(2012) Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes¹

Specimens: Agglomerated stone, 250mm×20mm×20mm, 4pcs, one face polished

Test Result:

Specimens identification No.	1	2	3	4
Individual value(10 ⁻⁶ /°C)	35	36	37	38
Mean value(10 ⁻⁶ /°C)	36			

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client, and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Attention: To ensure the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS-CSI Standards Technical Services Co., Ltd.
 Xiamen Branch (Xiamen) Commercial Inspection Laboratory

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 7 of 9

7. Mohs' hardness

Test Method:

Refer to EN 101:1991 Ceramic tiles: determination of scratch hardness of surface according to Mohs

Specimens: Agglomerated stone, 100mm×100mm×20mm, 3pcs, one face polished

Testing surface: polished

Test Result:

Specimens identification No.	1	2	3
Mohs' hardness	7~8	7~8	7~8
Mean value	7~8		

8. Linear thermal expansion coefficient

Test Method:

Refer to ISO 10545-8:1994 Ceramic tiles - Part 8: Determination of linear thermal expansion

Specimens: Agglomerated stone, 50mm×20mm×5mm, 2pcs, one face polished

Test Result:

Temperature: from 30℃ to 60℃.

Specimens identification No.	1	2
Linear thermal expansion coefficient (10 ⁻⁶ /℃)	36	34
Mean value(10 ⁻⁶ /℃)	35	

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client, and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) may be retained for 30 days only.

Attention: To verify the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS CST Standards Technical Services Co., Ltd. No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
 Xiamen Branch Test Center Commercial Conducted Thermal Laboratory 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT

No. : XMCCM131201220-4.1

Date : Jan.24, 2014

Page: 8 of 9

9. Abrasion resistance of unglazed tiles

Test Method:

Refer to ISO 10545-6:2010 Ceramic tiles — Part 6: Determination of resistance to deep abrasion for unglazed tiles

Specimens: Agglomerated stone, 150mm×150mm×20mm, 5pcs, one face polished

Testing surface: polished

Test Result:

Specimens identification No.	1		2		3		4		5	
Individual volume (mm ³)	38	41	34	41	38	41	41	38	38	41
Mean volume (mm ³)	39									

10. Radioactivity

Sample description:

Agglomerated stone, see the photo

Test Method:

GB 6566-2010 Limit of radionuclides in building materials

Test result:

Test items	Requirement in Standard (requirements of Class A of GB 6566-2010)	Test Results
Internal exposure index I_{Ra}	$I_{Ra} \leq 1.0$	<0.1
External exposure index I_γ	$I_\gamma \leq 1.3$	<0.1

Specific activity of the nuclides

Nuclides	Units	Specific activity
Ra-226	Bq/kg	2.09
Th-232		1.47
K-40		5.13

Note: 1. The sample complies with requirements of GB 6566-2010 Class A decorative materials, it's unlimited in manufacture, selling and using.

2. The test was carried out by external laboratory assessed as competent.

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein is for reference only. The Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Attention: To ensure the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

SGS CSTI Standards Technical Services Co., Ltd.
Xiamen Branch (厦门) Xiamen (Xiamen) Xiamen (Xiamen) Xiamen (Xiamen)

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn
中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e sgs.china@sgs.com