

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 1 of 29

scan to see the report



XMIN2306000471CM01

CUSTOMER NAME: YDL AUSTRALIA PTY LTD  
ADDRESS: 65 BABBAGE DR, DANDENONG SOUTH VIC 3175

Sample Name : LOW SILICA ENGINEERED STONE  
Manufacturer : XIAMEN YADONGLONG IMP.&EXP. CO., LTD  
Material : LOW SILICA ENGINEERED STONE

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. : SDFS2306003612FF, GZMR230601727601, CANIN23004823501  
Date of Receipt : 2023-06-20  
Testing Period : 2023-06-20 ~ 2023-07-18  
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. Xiamen Branch.

Bryan Hong  
Authorized signatory



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

Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 2 of 29

### Summary of Results:

No.	Test Item	Test Method	Result
1	Stain Resistance Test	Refer to CSA B45.5-17/IAPMO Z124-2017 Clause 5.11	48 (The maximum stain depth: 0.021mm)
2	Cigarette Test	Refer to CSA B45.5-17/IAPMO Z124-2017 Clause 5.14	No visible damage
3	Radioactivity	GB 6566-2010	Class A decorative materials
4	Mohs Scratch Hardness	Refer to ASTM C1895-20	No scratch:5 Scratch:6
5	Wet Pendulum Test	AS 4586-2013 Amdt 1-2017 Appendix A	SRV "wet":15
6	Dry Floor Friction Test	AS 4586-2013 Amdt 1-2017 Appendix B	0.80
7	Wet-Barefoot Inclining Platform Test	Refer to AS 4586-2013 Amdt 1- 2017 Appendix C	Critical angle of inclination: 13°
8	Oil-Wet Inclining Platform Test	AS 4586-2013 Amdt 1-2017 Appendix D	Critical angle of inclination: 2.0°
9	Shod Ramp Test	DIN EN 16165:2021-12 Annex B	Ramp test value $\alpha_{shod}$ : 2°
10	Resistance to Salt Attack	AS/NZS 4456.10:2003 Method A	Intact. See result
11	Resistance to Dry Heat	EN 13310:2015+A1:2018 Clause 5.3	No effect
12	Composition Analysis*	FTIR, PGC-MS, EDX, XRD and TGA	See result
13	Surface Burning Characteristics*	ASTM E84-23	Class A



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgsgroup.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. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 3 of 29

No.	Test Item	Test Method	Result
14	Reaction to fire *	EN 13501-1:2018	B—s1, d0
15	Asbestos*	With reference to AS 4964-2004, analysis was performed by PLM.	Negative

Note: \* test project/method was carried out by subcontractors.

Original Sample Photo:



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing 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](mailto:sgs.china@sgs.com)

# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 4 of 29

1. Test Item: Stain Resistance Test

Sample Description: See photo

Test Method: Refer to CSA B45.5-17/IAPMO Z124-2017 Clause 5.11

Test Condition:

Specimen: 100mm×100mm×20mm

Test reagents: see table 1

Contact time: 16h

Test Result:

Stain resistance total rating: 58; The maximum stain depth: 0.09mm

Table 1: Test result of stain resistance test

Reagent	Rating	
	Covered	Uncovered
Black crayon	2	2
Black liquid shoe polish	2	2
Blue washable Ink	2	2
Gentian violet solution	5(stain depth:0.012mm)	5(stain depth:0.014mm)
Beet juice	1	1
Grape juice	1	1
Lipstick	3	3
Hair dye	5(stain depth:0.019mm)	5(stain depth:0.021mm)
Iodine solution	2	2
Wet tea bag	1	1
Total rating	48 (The maximum stain depth: 0.021mm)	

Note: Cleaning procedures:



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 5 of 29

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.
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 powder 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 powder shall not constitute staining. Specimens whose stain is removed by this additional shall have a rating of 4-removable by two standard scouring powder scrubbing.
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.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 6 of 29

### 2. Test Item: Cigarette Test

Sample Description: See photo

Test Method: Refer to CSA B45.5-17/IAPMO Z124-2017 Clause 5.11

Test Condition:

Specimen: 100mm×100mm×20mm

Contact time: 120s

Test Result:

Brands of cigarettes	Yunyan	Septwolves	Hongtashan
Test result	No visible damage	No visible damage	No visible damage



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Shenzhen Technical Services Co., Ltd.  
Xiamen Branch Testing 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](mailto:sgs.china@sgs.com)

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 7 of 29

### 3. Test Item: Radioactivity

Sample Description: See photo

Test Method: GB 6566-2010

Test Condition:

Specimen: Powder, made from original sample

Test Result:

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

Specific activity of the nuclides

Nuclides	Units	Specific activity
Ra-226	Bq/kg	5.0
Th-232		6.0
K-40		33.5

Note: The sample complies with requirements of GB 6566-2010 Class A decorative materials.

Requirements of GB 6566-2010:

Main materials for building	Comply with $I_{Ra} \leq 1.0$ , $I_{\gamma} \leq 1.0$ In case of hole rate >25%, it shall comply with $I_{Ra} \leq 1.0$ , $I_{\gamma} \leq 1.3$
Decorative materials	Class A: Comply with $I_{Ra} \leq 1.0$ , $I_{\gamma} \leq 1.3$
	Class B: Comply with $I_{Ra} \leq 1.3$ , $I_{\gamma} \leq 1.9$ , but not comply with the requirement of Class A
	Class C: Comply with $I_{\gamma} \leq 2.8$ , but not comply with the requirements of Class A & Class B

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 8 of 29

### 4. Test Item: Mohs Scratch Hardness

Sample Description: See photo

Test Method: Refer to ASTM C1895-20

Test Condition:

Specimen: 100mm×100mm×20mm, 3pcs

Test surface: polished

Test Result:

Specimen No.	1	2	3
No scratch (highest numerical hardness point)	5	5	5
Scratch (lowest numerical hardness point)	6	6	6



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Shenzhen Technical Services Co., Ltd.  
Xiamen Branch Testing Center 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](mailto:sgs.china@sgs.com)



## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 9 of 29

### 5. Test Item: Wet Pendulum Test

Sample Description: See photo

Test Method: AS 4586-2013 Amdt 1-2017 Slip resistance classification of new pedestrian surface materials – Appendix A – Wet Pendulum Test Method

Test Condition:

Specimen: 200mm×150mm, 6pcs

Rubber slider: slider 96 (4S rubber)

Test surface: see photo

Test Result:

Specimen No.	1	2	3	4	5	6
Mean of British Pendulum Number (for each test surface)	16	15	15	14	14	14
Slip resistance value (SRV "wet")	15					
Class	P1					

### Classification of pedestrian surface materials according to the wet pendulum test:

Class	Pendulum SRV (slider 96)
P5	>54
P4	45-54
P3	35-44
P2	25-34
P1	12-24
P0	<12



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Xiamen Branch Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 10 of 29

### 6. Test Item: Dry Floor Friction Test

Sample Description: See photo

Test Method: AS 4586:2013 Amdt 1-2017 Slip resistance classification of new pedestrian surface materials – Appendix B – Dry Floor Friction Test Method

Test Condition:

Specimen: 500mm×500mm, 3pcs

Test surface: see photo

Condition: clean the surface and dry the specimens in natural condition.

Test Result:

Dry floor friction test, mean value: 0.80

Classification: D1

### **Classification of pedestrian surface materials according to the dry floor friction test:**

Classification	Dry floor friction test mean value
D1	≥0.40
D0	<0.40



Unless otherwise agreed in writing, 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-DocumenL.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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing Center for 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](mailto:sgs.china@sgs.com)

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 11 of 29

### 7. Test Item: Wet-Barefoot Inclining Platform Test

Sample Description: See photo

Test Method: Refer to AS 4586-2013 Amdt 1-2017 Slip resistance classification of new pedestrian surface materials – Appendix C – Wet/barefoot Inclining Platform Test Method

Test solution: potable water with a uniform concentration of 1g/L sodium lauryl sulfate was used as a wetting agent.

Test Condition:

Specimen: 500mm×500mm, 2pcs form a testing surface 1000mm×500mm, see photo

Test surface: see photo

Test result:

Test item(s)	Test result(s)
Slip resistance (wet/barefoot ramp test)	Critical angle of inclination: 13°

Note: 1. There is no verification board (standard surface) used for test.

2. Test solution temperature: 26 °C.

3. Lab environmental temperature: 23 °C.

### Allocation of mean angle of inclination to quality groups for friction characteristics:

Quality group	Mean angle of inclination(degrees)
No classification	$X < 12^\circ$
A	$X \geq 12^\circ$
B	$X \geq 18^\circ$
C	$X \geq 24^\circ$



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Shanghai Technical Services Co., Ltd.  
Xiamen Branch Testing 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 12 of 29

### 8. Test Item: Oil-Wet Inclining Platform Test

Sample Description: See photo

Test Method: AS 4586-2013 Amdt 1-2017 Slip resistance classification of new pedestrian surface materials – Appendix D – Oil-Wet Inclining Platform Test Method

Test Condition:

Specimen: 500mm×500mm, 2pcs form a testing surface 1000mm×500mm, see photo

Test surface: see photo

Test Result:

Test item(s)	Test result(s)	Classification
Slip resistance (oil-wet ramp test)	Critical angle of inclination: 2.0°	No classification

### **Classification of pedestrian surface materials according to the oil-wet inclining platform test:**

Slip resistance assessment group	Angle(degrees)
No classification	$X < 6^\circ$
R9	$6^\circ \leq X < 10^\circ$
R10	$10^\circ \leq X < 19^\circ$
R11	$19^\circ \leq X < 27^\circ$
R12	$27^\circ \leq X < 35^\circ$
R13	$X \geq 35^\circ$



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Shanghai Technical Services Co., Ltd.  
Xiamen Branch Testing 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 13 of 29

### 9. Test Item: Shod Ramp Test

Sample Description: See photo

Test Method: DIN EN 16165:2021-12 Determination of slip resistance of pedestrian surfaces -

Methods of evaluation Annex B Shod ramp test

Test Condition:

Specimen: 500mm×500mm, 2pcs form a testing surface 1000mm×500mm, see photo

Test surface: see photo

Test result:

Test item(s)	Test result(s)	Slip resistance class
Shod ramp test	Ramp test value $\alpha_{shod}$ : 2°	/

### DIN EN 16165:2021-12 NA.2 Classification of the results by shod ramp test:

Test result $\alpha_{shod}$	Slip resistance class
$6^\circ \leq \alpha_{shod} < 10^\circ$	R9
$10^\circ \leq \alpha_{shod} < 19^\circ$	R10
$19^\circ \leq \alpha_{shod} < 27^\circ$	R11
$27^\circ \leq \alpha_{shod} < 35^\circ$	R12
$35^\circ \leq \alpha_{shod}$	R13



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing Center for 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 14 of 29

10. Test Item: Resistance to Salt Attack

Sample Description: See photo

Test Method: AS/NZS 4456.10:2003 Method A

Test Condition:

Specimen: 50mm×50mm×20mm, 6pcs

Solution: 62g/L Sodium sulphate solution

Salt attack cycles: 15 cycles

Test Result:

Qualitative description after 15 cycles: specimens intact and there is no residue generated.

Total mass loss after 15 cycles:

Specimen No.	1	2	3	4	5	6
Mass loss (g)	0.01	0.00	0.02	0.01	0.03	0.01
Mean mass loss (g)	0.01					

11. Test Item: Resistance to Dry Heat

Sample Description: See photo

Test Method: EN 13310:2015+A1:2018 Clause 5.3

Test Condition:

Specimen: 200mm×200mm×20mm, 3pcs

Testing procedure: The vessel with glycerol tristearate, (180 ± 1) °C → Immediately place it on the specimen and stand for 20 min → Remove the vessel and allow the specimen to cool for a period of 45 min.

Test Result:

No effect.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing Center 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 15 of 29

### 12. Test Item: Composition Analysis

Sample Description: See photo

Test Method:

- Fourier Transform Infrared Spectrometer (FTIR)
- Pyrolysis-Gas Chromatography Mass Spectrometry (PGC-MS)
- Energy dispersive X-ray fluorescence spectrometer (EDX)
- Thermogravimetric Analyzer (TGA)
- X-ray Powder Diffractometer (XRD)

Test Result:

No.	Composition	Content, Wt%
1	Unsaturated Polyester (UP)	12
2	Quartz	35
3	Glass	53

Note:

1. Wt%- weight percent.
2. Quartz stands for crystalized silicon dioxide.
3. Quantitative data is for reference only.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing 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

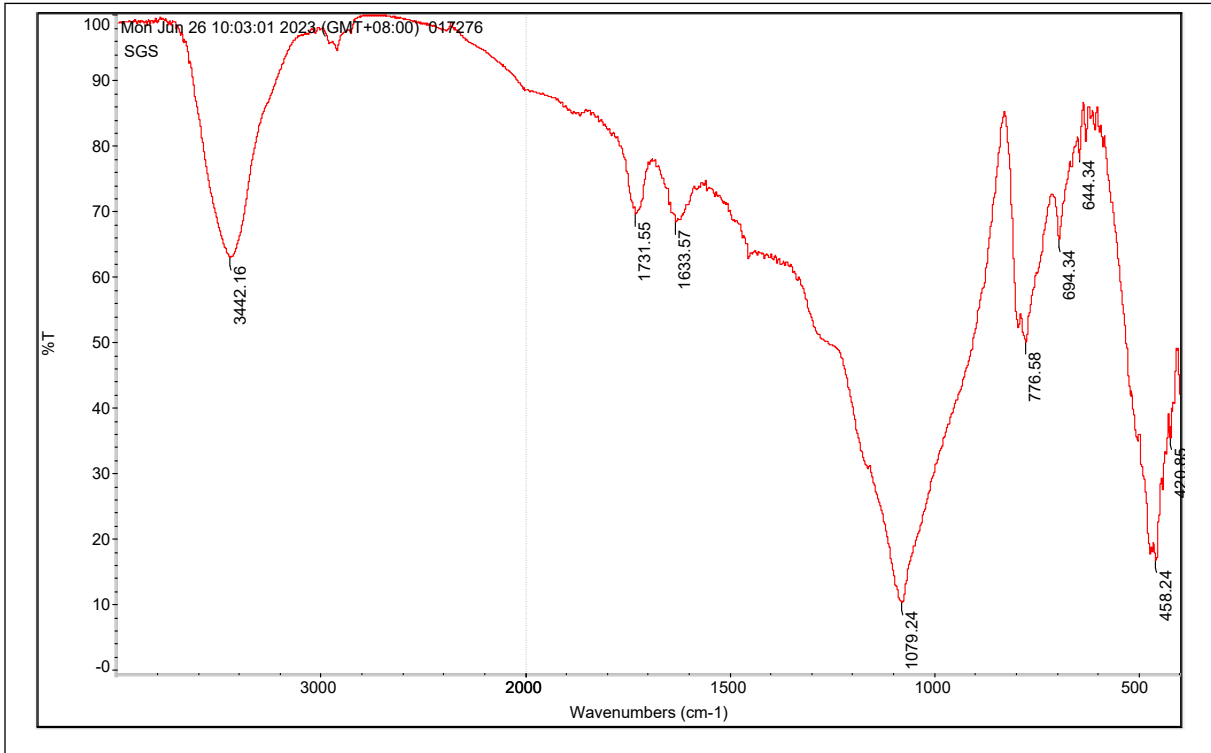
## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 16 of 29

Fig.1: FTIR spectrum of original sample



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC (Singapore) Technical Services Co., Ltd.  
Xiamen Branch Testing 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



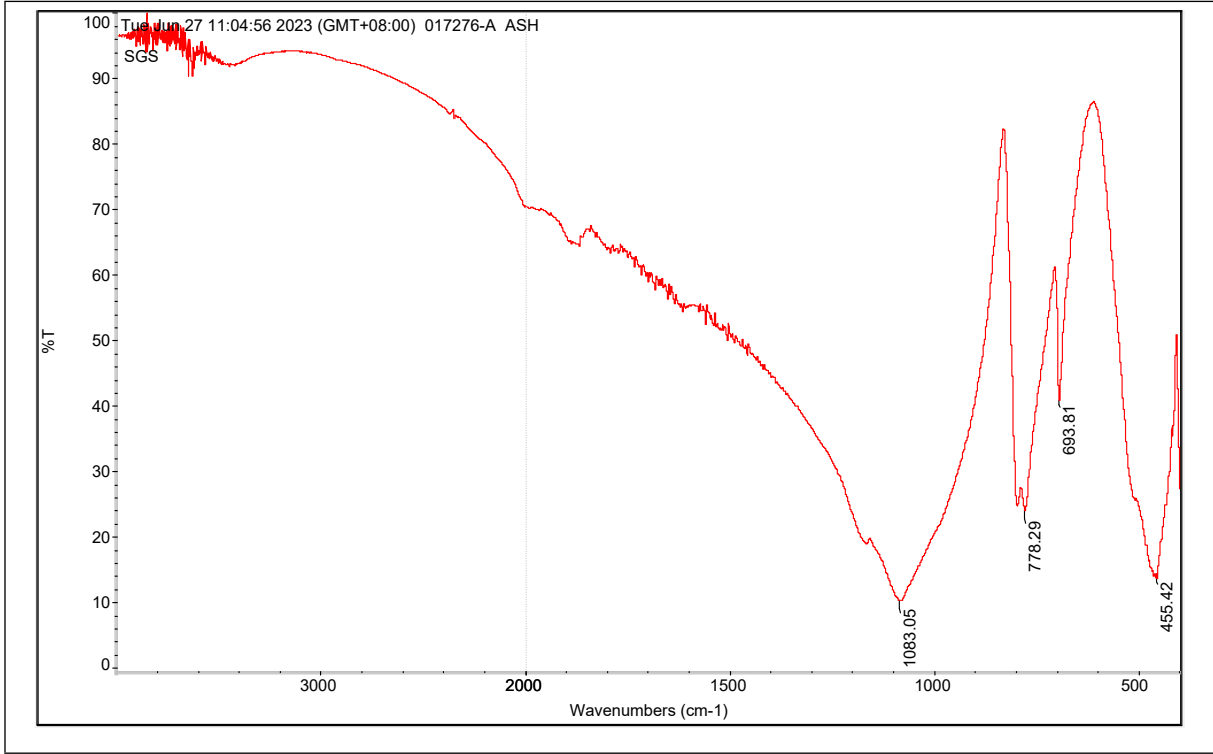
# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 17 of 29

Fig.2: FTIR spectrum of calcination residue



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Singapore Technical Services Co., Ltd.  
Xiamen Branch Testing 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

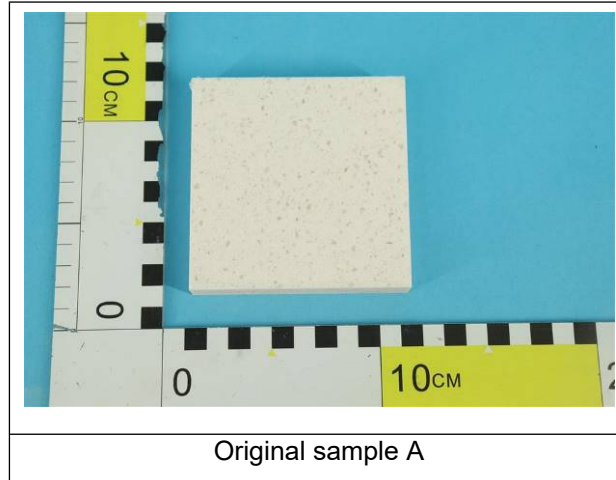
# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 18 of 29

Test Photo:



### 13. Test Item: Surface Burning Characteristics

Sample Description: See photo

#### I. TEST CONDUCTED

This test was conducted in accordance with ASTM E84-23 Standard Test Method for Surface Burning Characteristics of Building Materials.

#### II. INTRODUCTION

The method, designated as ASTM E84-23, "Standard Method of Test for Surface Burning Characteristics of Building Materials", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread index (FSI) and smoke developed index (SDI).

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke developed index are reported. However, there is not necessarily a relationship between these two measurements.



## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 19 of 29

### III. TEST PROCEDURE

The tunnel is preheated to 65.6°C (150°F), as measured by the floor-embedded thermocouple located 7.09m (23.25 ft) downstream of the burner ports, and allowed to cool to 40.6°C (105°F), as measured by the floor-embedded thermocouple located 3.96m (13 ft) from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7.32m (24 ft) long, 304.8mm (12 in) above the floor. The lid is then lowered into place.

Upon ignition of the gas burners, the flame spread distance is observed and recorded every 30 seconds. Flame spread distance versus time is plotted ignoring any flame front recessions. If the area under the curve (A) is less than or equal to 97.5 ft\*min, FSI = 0.515·A; if greater, FSI = 4900/(195-A).

The test results for smoke shall be plotted and the area under the curve shall be divided by the area under the curve for heptane, multiplied by 100, and rounded to the nearest multiple of five to establish a numerical smoke-developed index (SDI).

### IV. CONDITIONING

Prior to testing, the sample was conditioned to a constant weight at a temperature of (23±2.8)°C (73.4±5)°F and at a relative humidity of (50±5)%.

#### Sample details

Sample description	Stone
Sample size	520mm x 520mm
Thickness	50mm

**Exposed face:** Smooth surface



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing Center for 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 20 of 29

### Mounting methods:

The test specimen consisted of a total of 14 sections of material. The sections were butted together during testing to form the required specimen length. The specimen was self-supporting on the ledges of the test chamber.

### Test results:

Flame Spread Index, FSI	Smoke-developed Index, SDI
5	40

### **RATING:**

The National Fire Protection Association Life Safety Code 101, Chapter 10, Section 10.2.3 “Interior Wall and Ceiling Finish Classification”, has a means of classifying materials with respect to Flame Spread and Smoke Developed when tested in accordance with ASTM E84, UL 723 “Method of Test of Surface Burning Characteristics of Building Materials”.

International Building Code, Chapter 8, Interior Finishes, Section 803 “Wall and Ceiling Finishes”, was classified in accordance with ASTM E84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

### The classifications are as follows:

Classification	Flame Spread Index, FSI	Smoke-developed Index, SDI
Class A	0-25	0-450
Class B	26-75	0-450
Class C	76-200	0-450

Since the tested sample received a Flame Spread Index 5 and a Smoke-developed Index 40, it would meet the requirements of Class A interior Wall & Ceiling Finish Category.



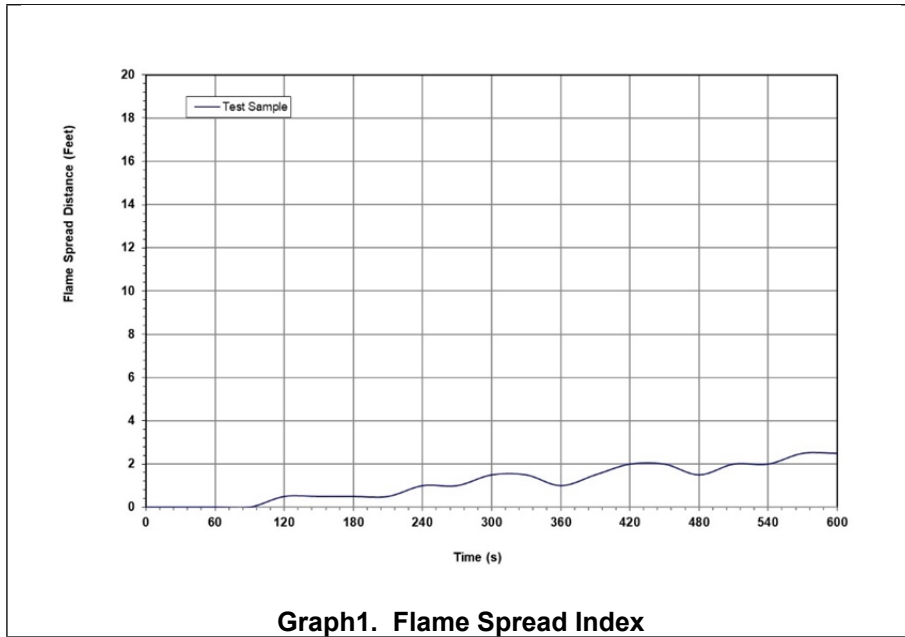
# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 21 of 29

## GRAPHICAL RESULTS:



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

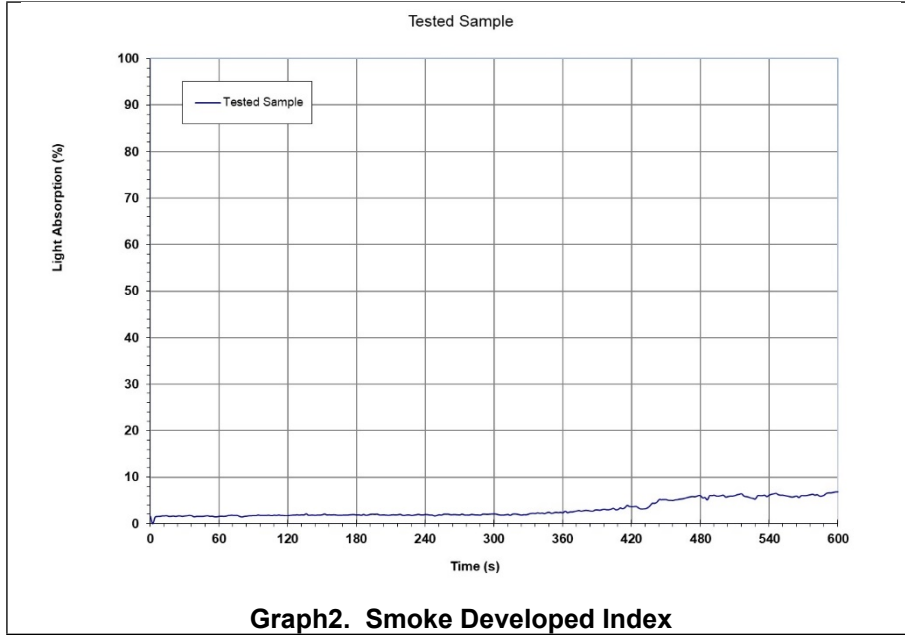
SGS-CSTC Xi'an Branch  
 No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgs.com.cn  
 中国·福建·厦门·火炬(翔安)产业区翔虹路31号 邮编:361101 t (86-592) 5765857 f (86-592) 5765380 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 22 of 29



## OBSERVATIONS

Time to ignition (sec)	252
Time to Max. FS (sec)	551
Maximum FS (feet)	2.5
Observations	No



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Shenzhen Technical Services Co., Ltd.  
Xiamen Branch Testing 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](mailto:sgs.china@sgs.com)

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 23 of 29

### **WARNING:**

The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support.

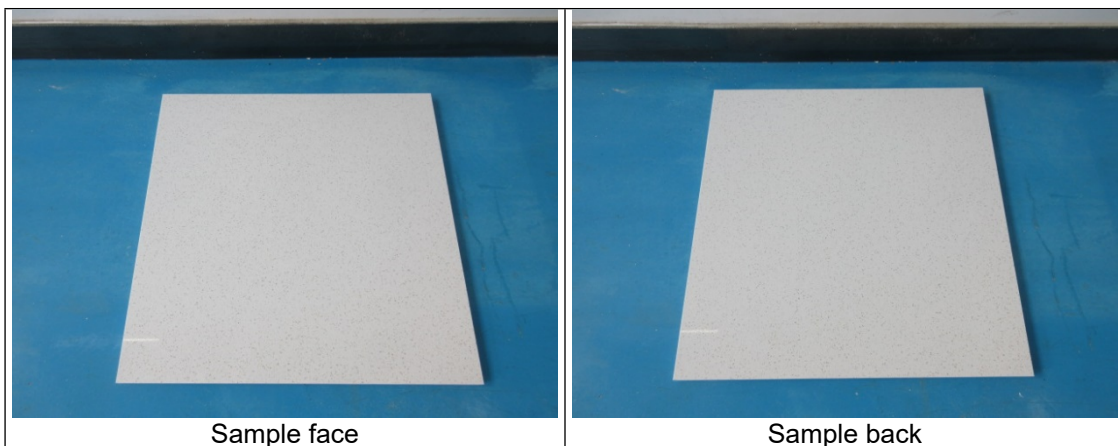
Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place.

The test results relate only to the specimens of the product in the form in which were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

### **Statement:**

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

### **Photo Appendix:**



## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 24 of 29

### 14. Test Item: Quantitative Analysis of Composition in Artificial Stone

Sample Description: See photo

#### I. Test conducted

This test is conducted as per EN 13501-1:2018 Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN 13823:2020+A1:2022 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 11925-2:2020 Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test.

#### II. Details of classified product

Sample Description	Stone
Color	White
Thickness	20mm
Area density	46.7kg/m <sup>2</sup>

#### Mounting and fixing:

The back of the sample is supported by angle iron and fixed with screws. Specimen had a ventilated cavity of 0mm away from the backing board.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Shanghai Technical Services Co., Ltd.  
Xiamen Branch Testing 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](mailto:sgs.china@sgs.com)



## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 25 of 29

### III. Test results

Test methods	Parameter	Number of tests	Results
EN 13823	FIGRA <sub>0.2MJ</sub> (W/s)	3	40.8
	FIGRA <sub>0.4MJ</sub> (W/s)		40.8
	Whether lateral flame spread (LFS) to the edge of specimen (Yes/No)		No
	THR <sub>600s</sub> (MJ)		3.0
	SMOGRA (m <sup>2</sup> /s <sup>2</sup> )		10.2
	TSP <sub>600s</sub> (m <sup>2</sup> )		35.9
	Flaming particles or droplets (Yes/No)		No
EN ISO 11925-2 Exposure = 30 s	Fs≤150mm within 60 s (Yes/No)	12	Yes
	Ignition of the filter paper (Yes/No)		No

#### Note:

FIGRA<sub>0.2MJ</sub> - Fire growth rate index at THR threshold of 0,2 MJ [W/s]

FIGRA<sub>0.4MJ</sub> - Fire growth rate index at THR threshold of 0,4 MJ [W/s]

THR<sub>600s</sub> -Total heat release within 600 s [MJ]

SMOGRA - Smoke growth rate [m<sup>2</sup>/s<sup>2</sup>]

TSP<sub>600s</sub>- Total smoke production within 600 s [m<sup>2</sup>]

### IV. Classification and field of application

#### a) Reference of classification

This classification has been carried out in accordance with **EN 13501-1:2018**.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Xiamen Branch Inspection & Testing Services Co., Ltd.  
Xiamen Branch Testing 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

## TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 26 of 29

### b) Classification

The product, 低硅石英石LOW SILICA ENGINEERED STONE (as described by the sponsor), in relation to its reaction to fire behaviour is classified:

Fire behaviour		Smoke production		Flaming droplets
B	—	s	1	d 0

Reaction to fire classification: B—s1, d0

**Remark:** The classes with their corresponding fire performance are given in annex A.

### c) Field of application

This classification is valid for the following product parameters:

--- Characteristics as described in section II of this test reports.

This classification is valid for the following end use applications:

--- Without any substrates

--- Free standing

### Limitations

This classification document does not represent type approval or certification of the product.

### Warning:

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

### Statement:

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

Note: This document cannot be reproduced except full, without prior written approval of the Company.



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com  
No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgsgroup.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. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 27 of 29

## Annex A

Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products

Class	Test method(s)	Classification criteria	Additional classification
A1	EN ISO 1182 <sup>a</sup> and	$\Delta T \leq 30^\circ\text{C}$ , and $\Delta m \leq 50\%$ , and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0\text{MJ/kg}$ <sup>a</sup> and $PCS \leq 2.0\text{MJ/kg}$ <sup>b,c</sup> and $PCS \leq 1.4\text{MJ/m}^2$ <sup>d</sup> and $PCS \leq 2.0\text{MJ/kg}$ <sup>e</sup>	-
A2	EN ISO 1182 <sup>a</sup> or	and $\Delta T \leq 50^\circ\text{C}$ , and $\Delta m \leq 50\%$ , and $t_f \leq 20\text{ s}$	-
	EN ISO 1716		-
	EN 13823	$FIGRA_{0.2\text{MJ}} \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600\text{s}} \leq 7.5\text{MJ}$	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
B	EN 13823 and	$FIGRA_{0.2\text{MJ}} \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600\text{s}} \leq 7.5\text{MJ}$	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure = 30s	$F_s \leq 150\text{mm}$ within 60s	
C	EN 13823 and	$FIGRA_{0.4\text{MJ}} \leq 250\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600\text{s}} \leq 15\text{MJ}$	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
D	EN 13823 and	$FIGRA_{0.4\text{MJ}} \leq 750\text{W/s}$	Smoke production <sup>f</sup> and Flaming droplets/particles <sup>g</sup>
	EN ISO 11925-2 <sup>i</sup> Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
E	EN ISO 11925-2 <sup>i</sup> Exposure = 15s	$F_s \leq 150\text{mm}$ within 20 s	flaming droplets/particles <sup>h</sup>
F	EN ISO 11925-2 <sup>i</sup> Exposure = 15 s	$F_s > 150\text{mm}$ within 20 s	



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.31 Xianghong Road, Xiang'an Torch Industrial Zone, Xiamen, Fujian Province, China. 361101 t (86-592) 5765857 f (86-592) 5765380 www.sgsgroup.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

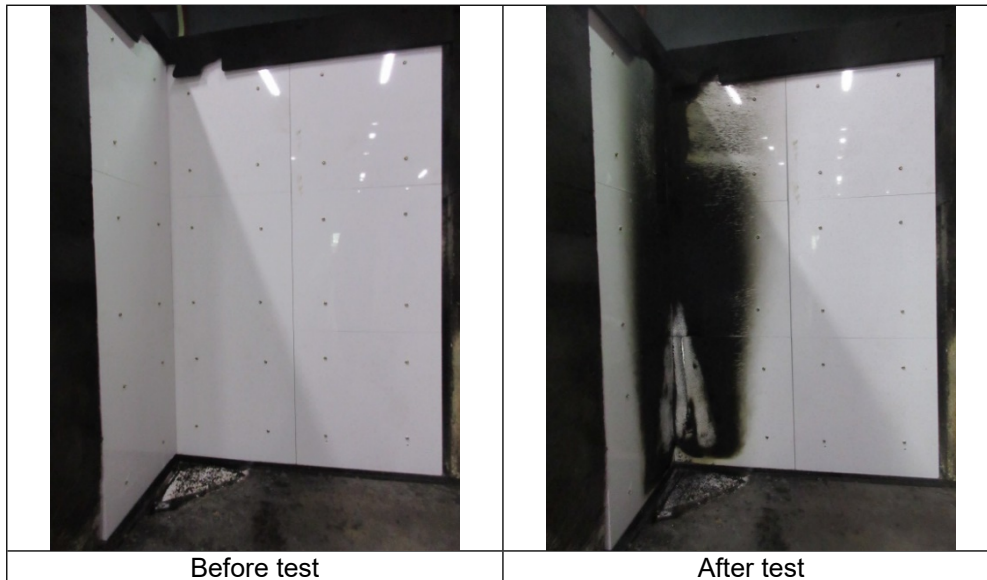
No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 28 of 29

- <sup>a</sup> For homogeneous products and substantial components of non-homogeneous products.
- <sup>b</sup> For any external non-substantial component of non-homogeneous products.
- <sup>c</sup> Alternatively, any external non-substantial component having a PCS  $\leq 2,0 \text{ MJ/m}^2$  , provided that the product satisfies the following criteria of EN 13823: FIGRA  $\leq 20 \text{ W/s}$ , and LFS < edge of specimen, and THR<sub>600s</sub>  $\leq 4,0 \text{ MJ}$ , and s1, and d0.
- <sup>d</sup> For any internal non-substantial component of non-homogeneous products.
- <sup>e</sup> For the product as a whole.
- <sup>f</sup> s1 = SMOGRA  $\leq 30\text{m}^2/\text{s}^2$  and TSP<sub>600s</sub>  $\leq 50\text{m}^2$  ; s2 = SMOGRA  $\leq 180\text{m}^2/\text{s}^2$  and TSP<sub>600s</sub>  $\leq 200\text{m}^2$ ; s3 = not s1 or s2
- <sup>g</sup> d0 = No flaming droplets/ particles in EN 13823 within 600 s;  
d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;  
d2 = not d0 or d1.  
Ignition of the paper in EN ISO 11925-2 results in a d2 classification.
- <sup>h</sup> Pass = no ignition of the paper (no classification);  
Fail = ignition of the paper (d2 classification).
- <sup>i</sup> Under conditions of surface flame attack and, if appropriate to the end–use application of the product, edge flame attack.

### Photo Appendix:



# TEST REPORT

No. : XMIN2306000471CM01\_EN

Date : 2023-08-16

Page: 29 of 29

15. Test Item: Asbestos

Sample Description: See photo

Test Method: With reference to AS 4964-2004, analysis was performed by PLM.

### Test Result(s):

Test Item(s)	CAS No.	Unit(s)	MDL	001
Actinolite	77536-66-4	%(m/m)	0.1	Negative
Amosite	12172-73-5	%(m/m)	0.1	Negative
Anthophyllite	77536-67-5	%(m/m)	0.1	Negative
Chrysotile	12001-29-5 /132207-32-0	%(m/m)	0.1	Negative
Crocidolite	12001-28-4	%(m/m)	0.1	Negative
Tremolite	77536-68-6	%(m/m)	0.1	Negative

### Notes:

(1) Negative = the absence of asbestos, Positive = the presence of asbestos.

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.

### Remarks:

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

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



Unless otherwise agreed in writing, 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 hereon 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 check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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