

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 1 of 8

CUSTOMER NAME: FOSHAN YAJ BUILDING CO., LTD
ADDRESS: JINXIAN ROAD, HE SHUN, LISHUI TOWN, NAN HAI DISTRICT,
FOSHAN CITY, GUANGDONG PROVINCE, P.R.CHINA

Sample Name : rock wool sandwich panel
Product Specification : 50mm sandwich panel,
pre-painted steel sheet 0.45mm thick,
rock wool density 105kg/m3

Manufacturer : FOSHAN YAJ BUILDING CO., LTD

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

Date of Receipt : Apr 23, 2018
Testing Start Date : Apr 23, 2018
Testing End Date : Jun 20, 2018
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

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

Salon

Salon Liu
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center 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-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

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 2 of 8

Test Result Summary

Test(s) Requested	Result(s)
EN 13501-1:2007+A1:2009	Classification: A2-s1, d0

Summary:

1. For further details, please refer to the following page(s).



SGS-CSTC Testing Services Co., Ltd.
Guangzhou Branch Testing 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-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

198 Kezhu Road, Science Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 3 of 8

TESTS AND RESULTS

Test Conducted:

This test is conducted as per EN 13501-1:2007+A1:2009 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 13823:2010+A1:2014 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 1716:2010 Reaction to fire tests for products -Determination of the gross heat of combustion. (Calorific Value)

Mounting and fixing (For EN 13823:2010+A1:2014):

The specimen was tested free standing at a distance of at least 80 mm from the backing board. Both wings were clamped at the top and the bottom.

Test Results:

Test method	Parameter	Number of tests	Results
EN ISO 1716:2010	For external non-substantial component (Coating): Heat of Combustion -PCS (MJ/m ²)	3	2.0
	For internal non-substantial component (glue): Heat of Combustion -PCS (MJ/m ²)		1.0
	For substantial components (rock wool): Heat of Combustion -PCS (MJ/kg)		1.5
	For substantial component (Aluminum panel): Heat of Combustion -PCS (MJ/kg)		0
	The product as a whole: Heat of Combustion -PCS (MJ/kg)		0.5
EN 13823:2010+A1:2014	FIGRA _{0.2MJ} (W/s)	3	35.9
	THR _{600s} (MJ)		2.9
	SMOGRA (m ² /s ²)		1.7
	TSP _{600s} (m ²)		7.5
	LFS < edge of specimen		Yes
	Flaming particles or droplets		No

Remark:

FIGRA-Fire growth rate index used for classification purposes [W/s]

For the classes A2 and B, FIGRA_{0.2MJ}

For the classes C and D, FIGRA_{0.4MJ}

LFS -Lateral flame spread [m]

THR_{600s}-Total heat release within 600 s [MJ]

SMOGRA -Smoke growth rate [m²/s²]

TSP_{600s} -Total smoke production within 600 s [m²]

PCS -gross heat of combustion [MJ/kg or MJ/m²]



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

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 4 of 8

Classification and direct field of application:

This classification has been carried out in accordance with EN 13501-1:2007+A1:2009.

Classification:

Fire behaviour		Smoke production			Flaming droplets	
A2	—	s	1	,	d	0

Remark:

The classes with their corresponding fire performance are given in Table 1.

Reaction to fire classification is based on the 7-step scale of A1 to F, where A1 is good and F is bad

Statement:

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Warning:

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

The test laboratory has, therefore, play no part in sampling the product for the test, although it holds appropriate references to the manufacturer's factory production control that is aimed to be relevant to the samples tested and that will provide for their traceability.



SGS-CSTC Testing Services Co., Ltd.
Guangzhou Branch Testing 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-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

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 5 of 8

Table 1 — 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 ^a 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	$PCS \leq 2.0\text{MJ/kg}$ ^a and $PCS \leq 2.0\text{MJ/kg}$ ^{b,c} and $PCS \leq 1.4\text{MJ/m}^2$ ^d and $PCS \leq 2.0\text{MJ/kg}$ ^e	-
A2	EN ISO 1182 ^a or	$\Delta T \leq 50^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f \leq 20\text{ s}$	-
	EN ISO 1716		-
	EN 13823	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
B	EN 13823 and	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 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

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 6 of 8

C	EN 13823 and	FIGRA \leq 250W/s and LFS<edge of specimen and THR600s \leq 15MJ	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure=30s	Fs \leq 150mm within 60 s	
D	EN 13823 and	FIGRA \leq 750W/s	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure=30s	Fs \leq 150mm within 60 s	
E	EN ISO 11925-2 ⁱ Exposure =15s	Fs \leq 150mm within 20 s	flaming droplets/particles ^h
F	No performance determined		

^a For homogeneous products and substantial components of non-homogeneous products.

^b For any external non-substantial component of non-homogeneous products.

^c Alternatively, any external non-substantial component having a PCS \leq 2,0 MJ/m², provided that the product satisfies the following criteria of EN 13823: FIGRA \leq 20 W/s, and LFS < edge of specimen, and THR_{600s} \leq 4,0 MJ, and s1, and d0.

^d For any internal non-substantial component of non-homogeneous products.

^e For the product as a whole.

^f In the last phase of the development of the test procedure, modifications of the smoke measurement system have been introduced, the effect of which needs further investigation. This may result in a modification of the limit values and/or parameters for the evaluation of the smoke production.

s1 = SMOGRA \leq 30m²/s² and TSP_{600s} \leq 50m²; s2 = SMOGRA \leq 180m²/s² and TSP_{600s} \leq 200m²; s3 = not s1 or s2

^g 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.

^h Pass = no ignition of the paper (no classification);

Fail = ignition of the paper (d2 classification).

ⁱ Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

SAMPLE INFORMATION AND PICTURES

Thickness; About 50mm
 Area density of the product: About 12.1kg/m²
 Area density of the coating: 66g/m²(Provided by the client)
 Area density of the glue: 40g/m²(Provided by the client)



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 Inspection & Testing Services Co., Ltd.
 Guangzhou Branch Testing Leave Commerce Construction Material Laboratory

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 7 of 8



Before test (for EN 13823)



After test (for EN 13823)



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 检测技术有限公司 广州分公司
Guangzhou Branch Testing Laboratory

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com

TEST REPORT

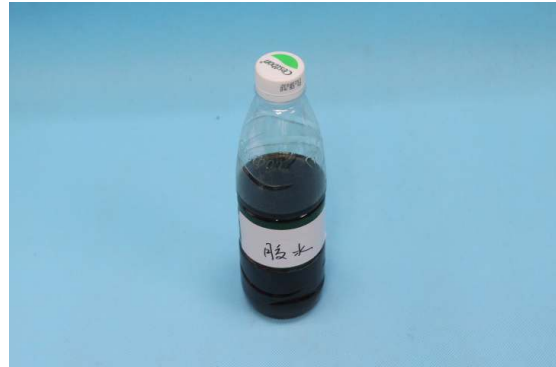
No. : GZIN1804019402CM

Date : Jun 20, 2018

Page: 8 of 8



Coating



Glue



Rock wool



Aluminum panel

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

***** 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-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 Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Leave Commercial Construction Material Laboratory

198 Kezhu Road, Sciencetech Park, Economic & Technical Development District, Guangzhou, China. 510663 t (86-20) 82155555 f (86-20) 82075080 www.sgs.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075080 e sgs.china@sgs.com