Comprehensive Qualification Document

GOODSENSE

- Aluminum Composite Panel
- Aluminum Core Composite Panel
- CEP Board
- ACP Tiles
- PVC Wall Panel

Guangzhou Goodsense Decorative Building Materials Co.,Ltd.

◉ Company Profile ◉

Guangzhou Goodsense Decorative Building Materials Co., Ltd is one of the biggest decorative building materials enterprises in China. It is specialized in producing decorative building materials such as Aluminum Composite Panel, Aluminum Core Composite Panel, CEP Board, ACP Tiles, PVC Wall Panel. Our company was founded in 1996. The factory covers area of 140 thousand square meters, with nearly 500 people of various kinds of advanced management, design development and production staff. It has 12 advanced international technology production lines of aluminum composite panels, which can produce two-meter width aluminum composite panel curtain wall, with an annual production capacity of 15 million square meters ACP, and 5 million square metersof ACCP. Goodsense production lines include the most complete varieties, designs and colors in the field.

Goodsense is one of the first enterprises through the ISO9001/14001 International Quality and Environmental Management System, and also one of the first enterprises through China Building Materials Certification Center (CTC) in 2008. Products tested by SGS, with every performance indicators fully meet the national standards. Our company participates in Aluminum Composite Panel national standard, and is the deputy director of the national aluminum composite industry branch unit. It was awarded the Project Recommended Products, Guangzhou Famous Trademarks, Chinese Famous Quality Products, The Industry's Most Influential Enterprises, Top Ten Enterprises, The Enterprise of China Building Decoration Materials, National System Quality Service Prestige AAA Grade Enterprise, eleven years in a row was rated as Obey the contract and Treasure Credit Enterprise.

The company emphasizes highly on its brand image."GOODSENSE" "Jiejiegao", "Zhengmao" have been selected as "Excellent Products in China". Company focuses on ACP research and development, manufacture and innovation, adhering to the quality policy of “people-oriented, technology leading”, “customer satisfaction is the source of enterprise development” as the management idea, which will continue to carry forward Goodsense spirit, based on south China, consolidate the central plains, facing the whole country, expanding overseas, leading the latest trend of decorative materials, becoming the first-class decorative building materials enterprises in China, and creating world-class brand.

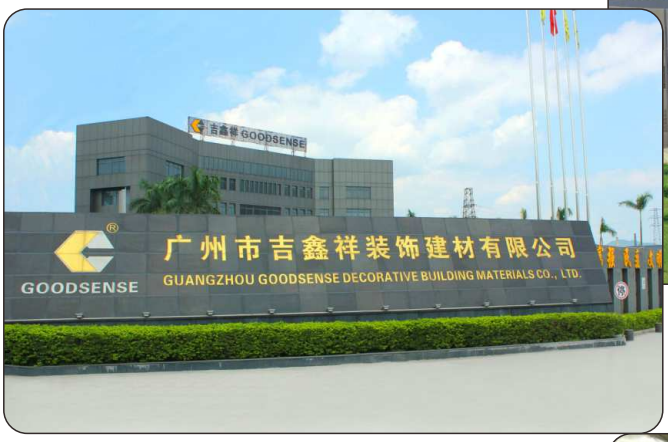
GOODSENSE®

01

Company Profile

WeChat

◉ Goodsense Factory Environment



Factory Gate

Workshop Panorama

Production Line

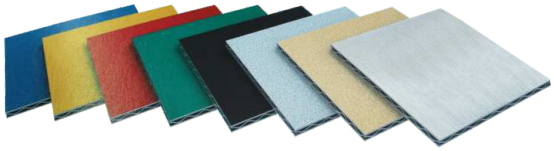
Warehouse

Test Center

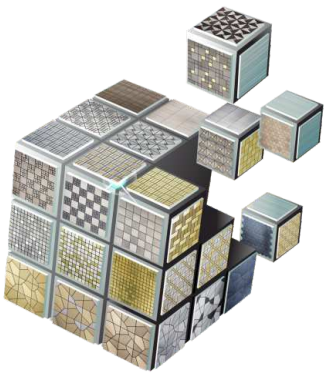
ACP Warehouse

Aluminum Composite Panel

Aluminum Core Composite Panel



ACP Tiles



CEP Board

PVC Wall Panel

◉ Company Showroom

Aluminum Composite Panel

Product Overview

Aluminium Composite Panel is a kind of compound material processed with aluminum plasitc panel producing equipment. It takes chemical-disposed doped aluminum panel chemical disposal as the facial material, and polythene plastic as the core material. The main coatings in aluminum skin are Polyester and PVDF. ACP is easy to be maintained, cleaned, constructed and processed. It is a popular decorative material.

Product Features

1. Favourable
2. Rich Colors
3. Various Thickness in Aluminum Surface
4. Wide range of Applications

- A2&B1 FR
- PVDF Coating
- Thickness:2mm-6mm
- Width:1000,1220,1500,1550
- Length: 1000-5800mm

Application

1. Building curtain wall and exterior wall
2. Interior decoration
3. Electrical panels, advertising signs and display stands
4. Industrial materials and other fields

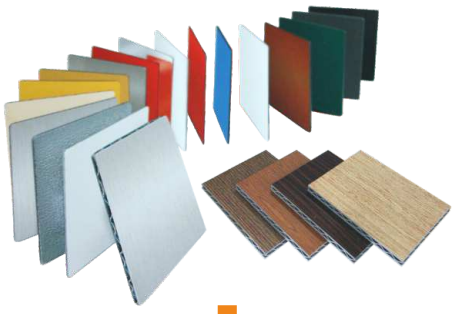
Aluminum Core Composite Panel

- Thickness: 3.0mm-4.0mm
- Width: 1220, 1500mm
- Length: 1000-6000mm

The Aluminum Core Panel consists of two aluminum cover plates and an aluminum core. The characters of this new material is composite forming, smoothness, stability, good weather resistance and good impact resistance. Because of its compound structure, it can be made into many different shapes with high instillation efficiency, convenient maintenance and easy cleaning. The Aluminum Core Panel is a new range of material for private home, public building, headquarter offices, factoryand so on.

Product Features

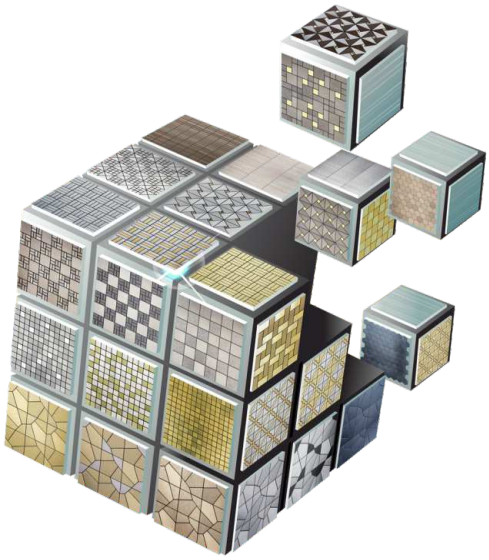
1. A2 FR
2. Light weight, green and environmental protection
3. High strength and flatness
4. Good heat insolation and sound insolation



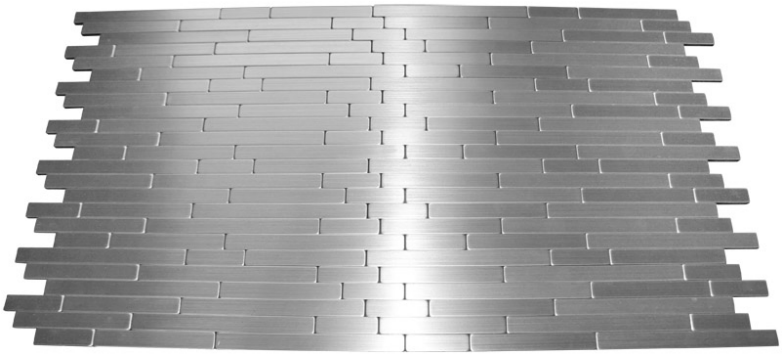
Application

1. Building curtain wall and exterior wall
2. Interior decoration
3. Special green materials for medical system
4. Advertising boards, sign boards, furniture
5. Electronics industry and other fields

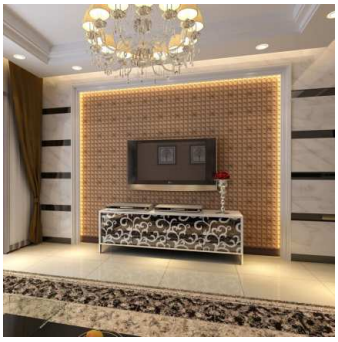
◉ ACP Tiles



GOODSENSE ACP Tiles is unique luster, rich colors, show personality, lead interior decoration new high-end fashion.

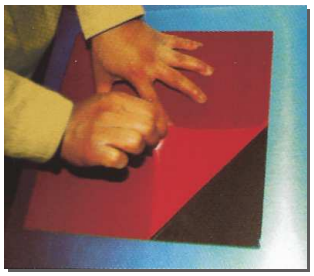


Mosaic has marvelous varied pictures with three-dimensional, inspirational, sensual and perfect color, making a small room feel active and full of energy. Mosaic expresses intense contemporary feeling, and product cost is low, benefit is big, installation is simple. Color mixture system could turn into various new colors. In the metal color system, gold Mosaic and silver Mosaic should be the representive of modern and advance.

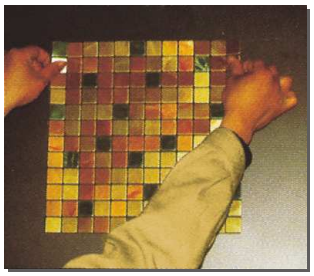


INSTALLATION

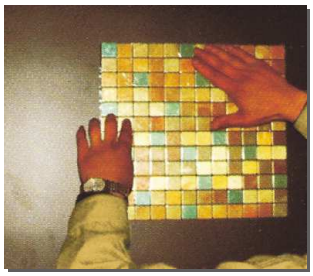
Wall bodies must be flat and clean. If apply on cement directly, water proof painting is needed on the surface, Only after the painting is dry enough, then the installation can begin.



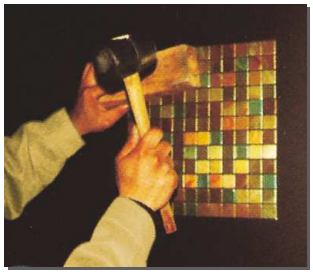
Peel off the protective film on back.



Stick Mosaic according to the horizontal line.

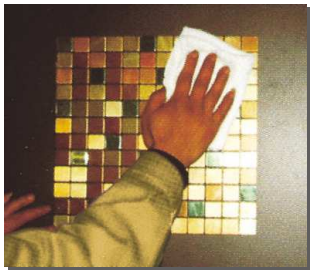


Flat the surface of Mosaic.



Knock the surface of Mosaic gently with a plastic hammer,a crosatie is mecessary between the hammer and Mosaic.

Remove the surface protective film after everything completed.



Clean the surface of Mosaic with a soft cloth.

Slightly different in colors may happen in different batches products. Please check the colors before installation. If apply on the same wall, pls contact with us to match same batch products.

◉ PVC Wall Panel

B1 Fireproof

Waterproof

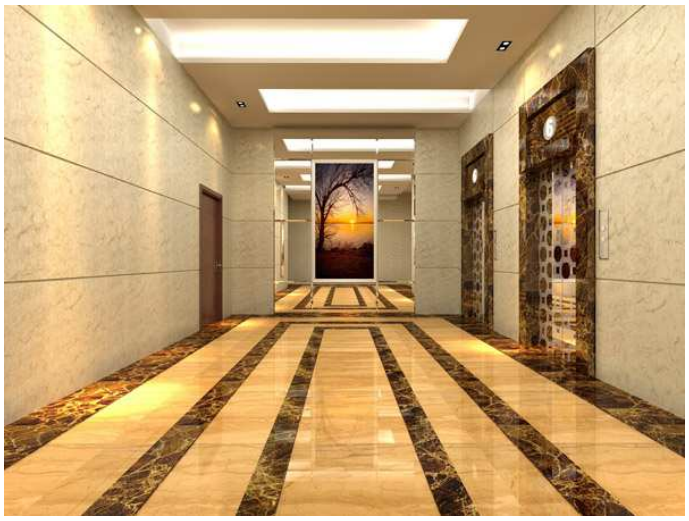
Easy to Clean

Processed and Installed Easily

Antibacterial & Mould Proof

Green Building Materials

Application



CEP Board

Application

The **Goodsense** *plus* CEP Board mainly used for advertisement board, signage board, kitchen, doors and windows, office partition, furniture, fan blade,etc

The research and development of GOODSENSE CEP board conforms to the national design requirements for building energy conservation and green environmental protection, and plays an important role in beautifying the city, saving energy and reducing emissions.

Product Features

CEP Board has a very good sound insulation, heat insulation, fire-proof ,water-proof.

GOODSENSE

02

Enterprise Honor and Test Report

WeChat

Company Qualification

营业执照

(副本)

编号 S2112014020716 (1-1)

统一社会信用代码 91440114747558360 5

名　　称	广州市吉鑫祥装饰建材有限公司
类　　型	有限责任公司(自然人投资或控股)
住　　所	广州市花都区炭步镇沿江路西竹园2号
法定代表人	张士泉
注册资本	陆仟伍佰万元整
成立日期	2003年03月12日
营业期限	2003年03月12日 至 长期
经营范围	金属制品业（具体经营项目请登录广州市商事主体信息公示平台查询。依法须经批准的项目，经相关部门批准后方可开展经营活动。）

登记机关 广州市花都区工商行政管理局

2016 年 07 月 08 日

企业信用信息公示系统网址：http://cri.gz.gov.cn

中华人民共和国国家工商行政管理总局监制

Company Qualification

WSF 世标认证

CERTIFICATE OF REGISTRATION

Registration No.03818E03110R5M
Organization Code/Unified Social Credit Code: 91440114747583605

This is to certify that the Environmental Management System of

Guangzhou Goodsense Decorative Building Materials Co., Ltd.

Audit Address: No.2, Xizhuyuan, Yanjiang Road, Tanbu Town, Huadu District, Guangzhou City, Guangdong Province/Registered Address: No.2, Xizhuyuan, Yanjiang Road, Tanbu Town, Huadu District, Guangzhou City, Guangdong Province, China

has been audited to conform to

GB/T 24001-2016/ISO 14001:2015

For the whole process of

related environmental management activities in the production and sale of aluminum-plastic composite board, PC sunlight hollow plate

Date of Initial Issuance:2003-4-9

Date of Issuance:2018-5-11 Date of Expiry:2021-5-11

This certificate will not remain valid only if the certified organization accepts at least one surveillance audit annually within the validity period of the certificate in which the surveillance audit conforming mark is in the designated position. Please follow WSF customer service by scanning QR code or visit www.wsf.cn and www.cnca.gov.cn for this certificate's validity status and related services.

World Standards For Certification Center Inc. Issued by :

Add: Floor 8-2-5/6/7, Yuanyangfengjin[illegible] Shengmen Xidajie, Haidian District, [illegible]

WSF ISO14001 IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C038-M

ISO14001:2004

WSF 世标认证

CERTIFICATE OF REGISTRATION

Registration No.03818Q03109R5M
Organization Code/Unified Social Credit Code: 91440114747583605

This is to certify that the Quality Management System of

Guangzhou Goodsense Decorative Building Materials Co., Ltd.

Audit Address: No.2, Xizhuyuan, Yanjiang Road, Tanbu Town, Huadu District, Guangzhou City, Guangdong Province/Registered Address: No.2, Xizhuyuan, Yanjiang Road, Tanbu Town, Huadu District, Guangzhou City, Guangdong Province, China

has been audited to conform to

GB/T 19001-2016/ISO 9001:2015

For the whole process of

production and sale of aluminum-plastic composite board, PC sunlight hollow plate

Date of Initial Issuance:2003-4-2

Date of Issuance:2018-5-11 Date of Expiry:2021-5-11

This certificate will not remain valid only if the certified organization accepts at least one surveillance audit annually within the validity period of the certificate in which the surveillance audit conforming mark is in the designated position. Please follow WSF customer service by scanning QR code or visit www.wsf.cn and www.cnca.gov.cn for this certificate's validity status and related services.

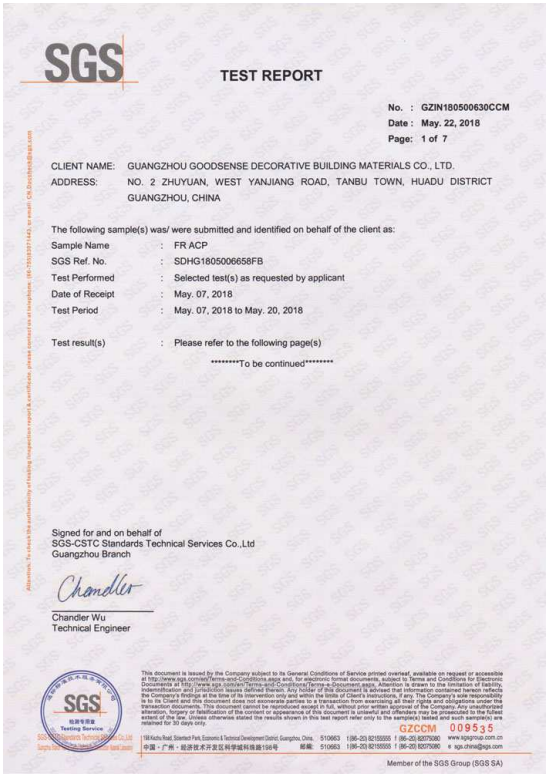
World Standards For Certification Center Inc. Issued by :

Add: Floor 8-2-5/6/7, Yuanyangfengjin[illegible] Shengmen Xidajie, Haidian District, [illegible]

WSF ISO9001 IAF CNAS 中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C038-M

ISO9001:2008

Test Report



SGS

TEST REPORT

No. : GZIN1805006630CCM
Date : May. 22, 2018
Page: 1 of 7

CLIENT NAME: GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALS CO., LTD.
ADDRESS: NO. 2 ZHUYUAN, WEST YANJIANG ROAD, TANBU TOWN, HUADU DISTRICT GUANGZHOU, CHINA

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

Sample Name	:	FR ACP
SGS Ref. No.	:	SDHG1805006658FB
Test Performed	:	Selected test(s) as requested by applicant
Date of Receipt	:	May. 07, 2018
Test Period	:	May. 07, 2018 to May. 20, 2018

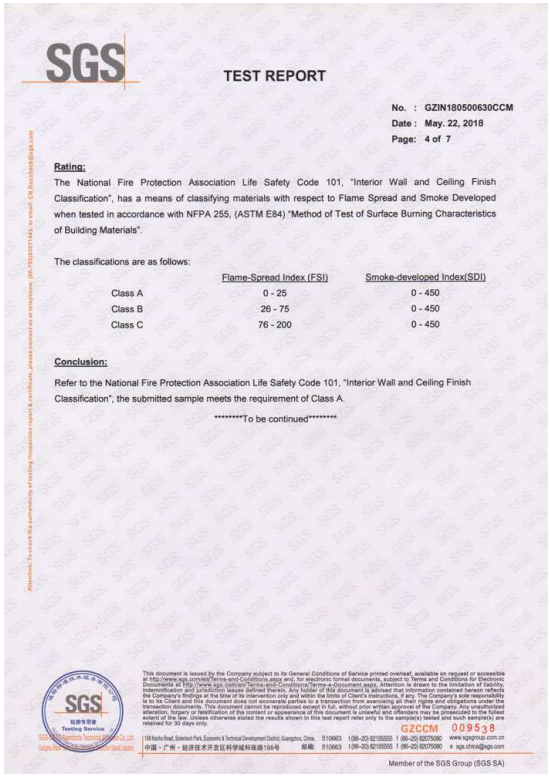
Test result(s) : Please refer to the following page(s)

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

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co.,Ltd
Guangzhou Branch

Chandler

Chandler Wu
Technical Engineer



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TEST REPORT

No. : GZIN1805006630CCM
Date : May. 22, 2018
Page: 4 of 7

Rating:

The National Fire Protection Association Life Safety Code 101, "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 NFPA 255, (ASTM E84) "Method of Test of Surface Burning Characteristics of Building Materials".

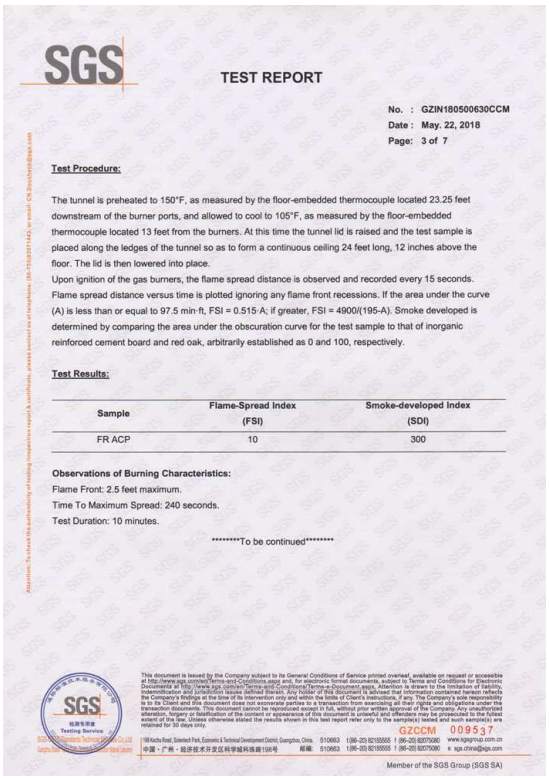
The classifications are as follows:

	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

Conclusion:

Refer to the National Fire Protection Association Life Safety Code 101, "Interior Wall and Ceiling Finish Classification", the submitted sample meets the requirement of Class A.

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



SGS

TEST REPORT

No. : GZIN1805006630CCM
Date : May. 22, 2018
Page: 3 of 7

Test Procedure:

The tunnel is preheated to 150°F, as measured by the floor-embedded thermocouple located 23.25 feet downstream of the burner ports, and allowed to cool to 105°F, as measured by the floor-embedded thermocouple located 13 feet 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 24 feet long, 12 inches 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 15 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 min·ft, FSI = 0.515·A; if greater, FSI = 4900/(195-A). Smoke developed is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, arbitrarily established as 0 and 100, respectively.

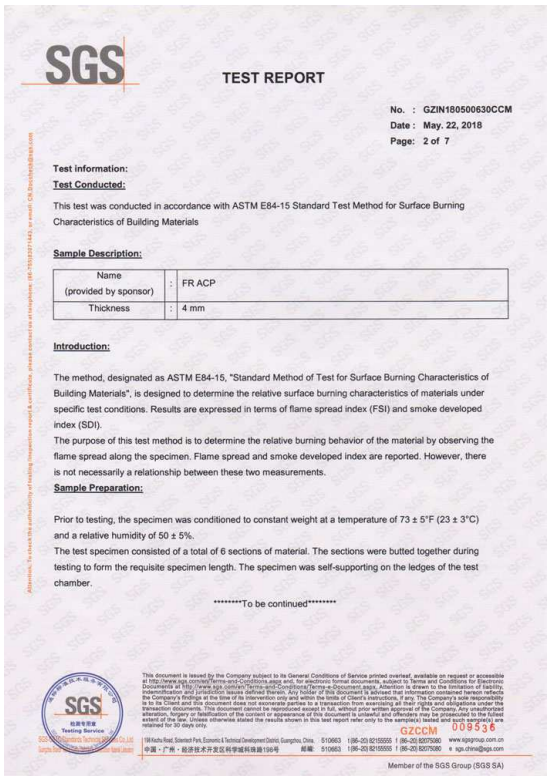
Test Results:

Sample	Flame-Spread Index (FSI)	Smoke-developed Index (SDI)
FR ACP	10	300

Observations of Burning Characteristics:

Flame Front: 2.5 feet maximum.
Time To Maximum Spread: 240 seconds.
Test Duration: 10 minutes.

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



SGS

TEST REPORT

No. : GZIN1805006630CCM
Date : May. 22, 2018
Page: 2 of 7

Test information:

Test Conducted:

This test was conducted in accordance with ASTM E84-15 Standard Test Method for Surface Burning Characteristics of Building Materials

Sample Description:

Name (provided by sponsor)	:	FR ACP
Thickness	:	4 mm

Introduction:

The method, designated as ASTM E84-15, "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.

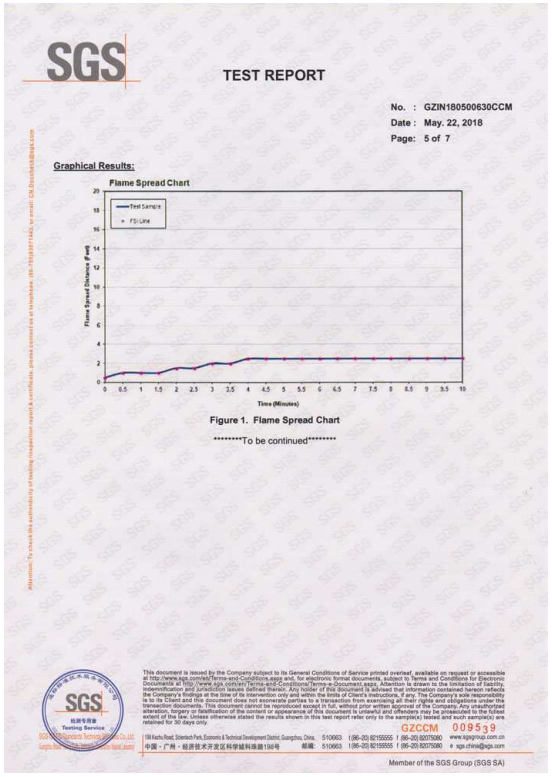
Sample Preparation:

Prior to testing, the specimen was conditioned to constant weight at a temperature of 73 ± 5°F (23 ± 3°C) and a relative humidity of 50 ± 5%.
The test specimen consisted of a total of 6 sections of material. The sections were butted together during testing to form the requisite specimen length. The specimen was self-supporting on the ledges of the test chamber.

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

SGS A2 class fire-proof **aluminum composite panel** test report

Test Report



SGS TEST REPORT

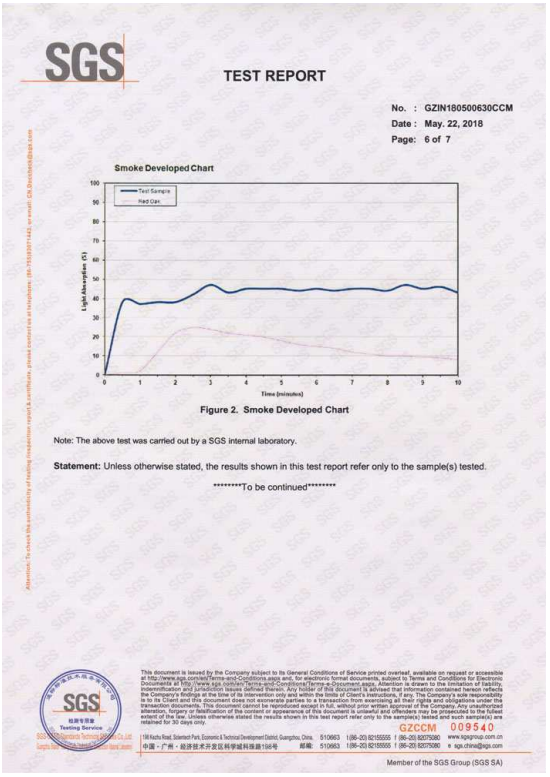
No. : GZIN180500630CCM
Date : May. 22, 2018
Page: 5 of 7

Graphical Results:

Flame Spread Chart

Figure 1. Flame Spread Chart

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



SGS TEST REPORT

No. : GZIN180500630CCM
Date : May. 22, 2018
Page: 6 of 7

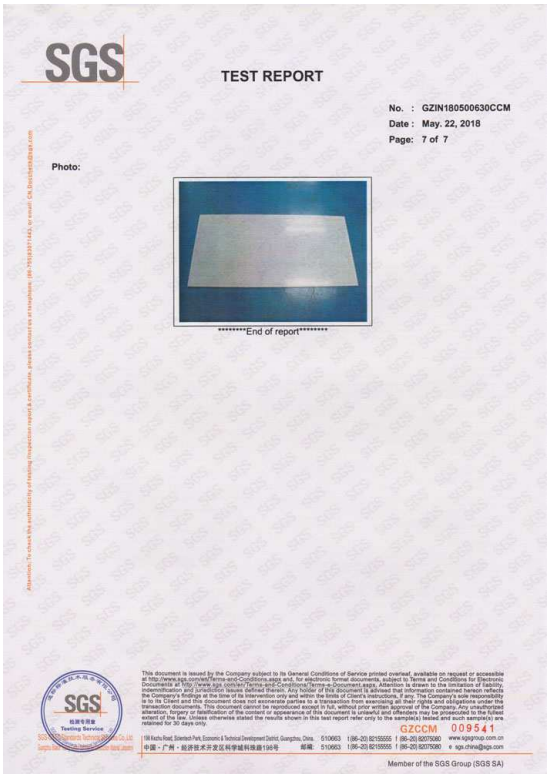
Smoke Developed Chart

Figure 2. Smoke Developed Chart

Note: The above test was carried out by a SGS internal laboratory.

Statement: Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

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



SGS TEST REPORT

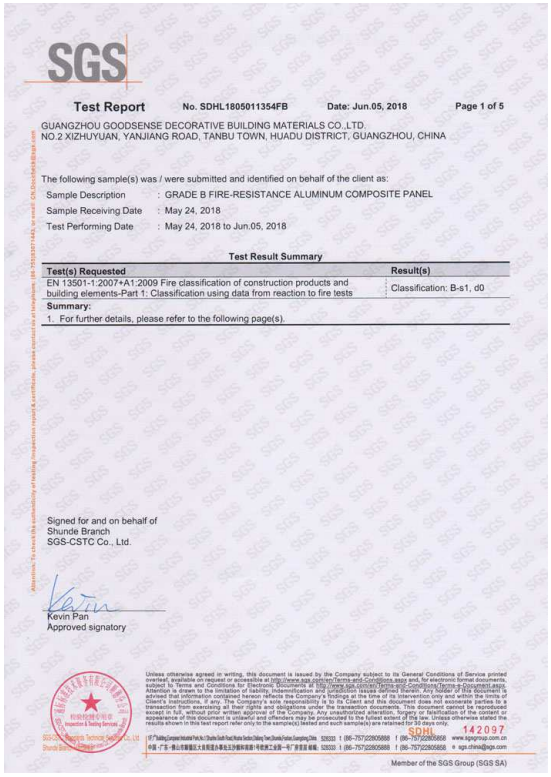
No. : GZIN180500630CCM
Date : May. 22, 2018
Page: 7 of 7

Photo:

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

SGS A2 class fire-proof **aluminum composite panel** test report

Test Report



SGS

Test Report No. SDHL1805011354FB Date: Jun.05, 2018 Page 1 of 5

GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALS CO.,LTD.
NO.2 XIZHUYUAN, YANJIANG ROAD, TANBU TOWN, HUADU DISTRICT, GUANGZHOU, CHINA

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

Sample Description	: GRADE B FIRE-RESISTANCE ALUMINUM COMPOSITE PANEL
Sample Receiving Date	: May 24, 2018
Test Performing Date	: May 24, 2018 to Jun.05, 2018

Test Result Summary

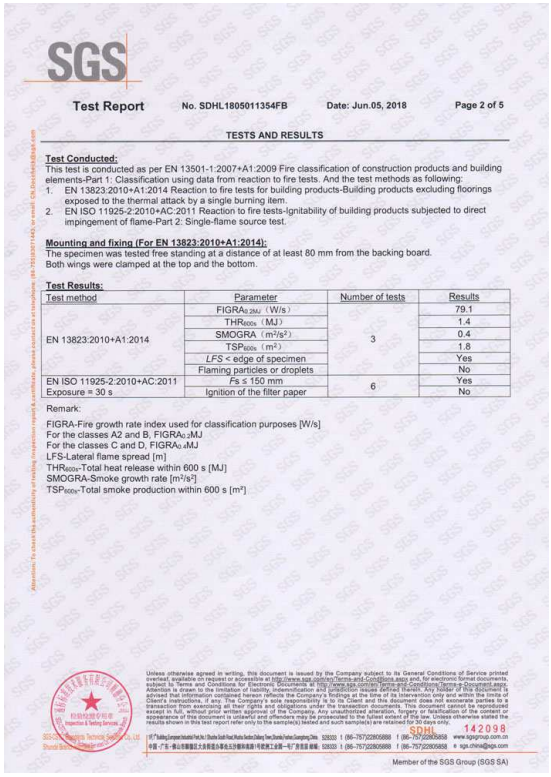
Test(s) Requested	Result(s)
EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests	: Classification: B-s1, d0

Summary:

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

Signed for and on behalf of
Shunde Branch
SGS-CSTC Co., Ltd.

Kevin Pan
Approved signatory



SGS

Test Report No. SDHL1805011354FB Date: Jun.05, 2018 Page 2 of 5

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 11925-2:2010+AC:2011 Reaction to fire tests-Ignitability of building products subjected to direct impingement of flame-Part 2: Single-flame source test.

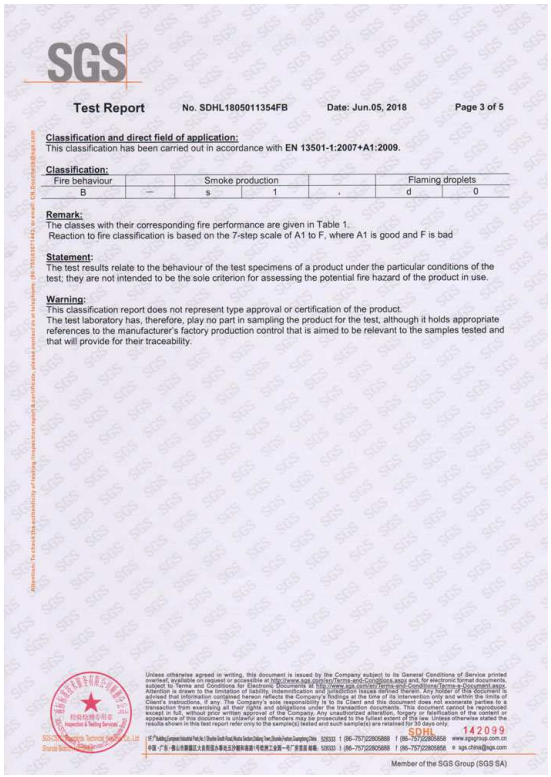
Mounting and fixing (For EN 13823:2010+A1:2014):
The specimen was tested free standing at a distance of at least 80 mm from the backing board.
Both wings were clamped at the top and the bottom.

Test Results:

Test method	Parameter	Number of tests	Results
EN 13823:2010+A1:2014	$FIGRA_{0.2MJ}$（W/s）	3	79.1
	THR_{600s}（MJ）		1.4
	SMOGRA（m^2/s^2）		0.4
	TSP_{600s}（m^2）		1.8
	LFS < edge of specimen		Yes
	Flaming particles or droplets		No
EN ISO 11925-2:2010+AC:2011 Exposure = 30 s	*Fs* ≤ 150 mm	6	Yes
	Ignition of the filter paper		No

Remark:

FIGRA-Fire growth rate index used for classification purposes [W/s]
For the classes A2 and B, $FIGRA_{0.2}$MJ
For the classes C and D, $FIGRA_{0.4}$MJ
LFS-Lateral flame spread [m]
THR_{600s}-Total heat release within 600 s [MJ]
SMOGRA-Smoke growth rate [m^2/s^2]
TSP_{600s}-Total smoke production within 600 s [m^2]



SGS

Test Report No. SDHL1805011354FB Date: Jun.05, 2018 Page 3 of 5

Classification and direct field of application:
This classification has been carried out in accordance with **EN 13501-1:2007+A1:2009.**

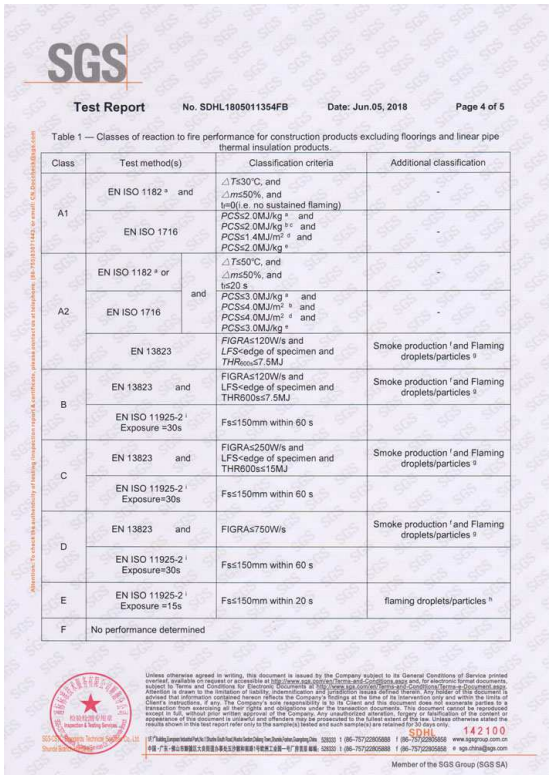
Classification:

Fire behaviour		Smoke production			Flaming droplets	
B	—	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

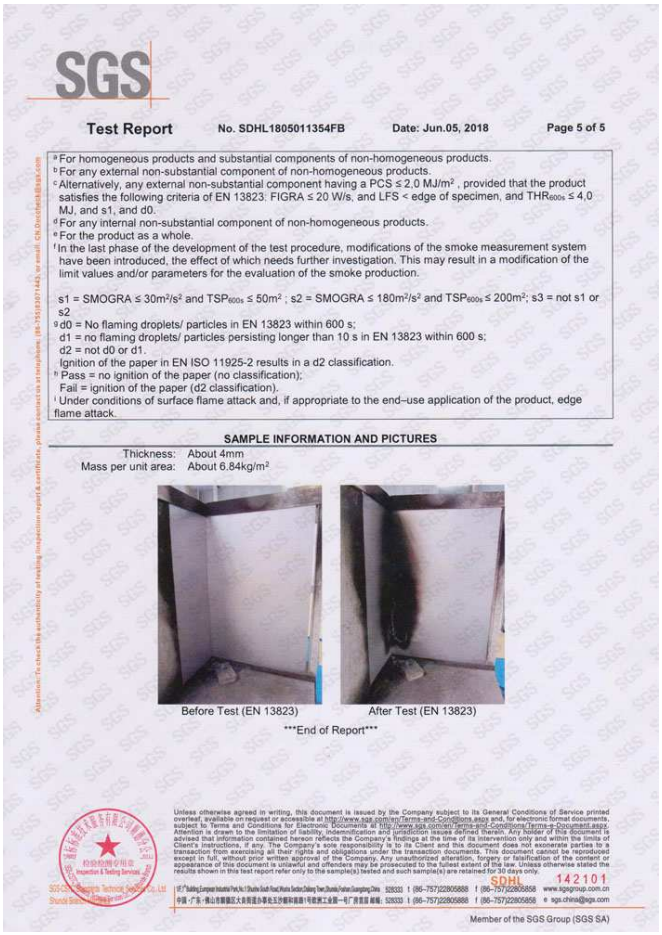
Test Report No. SDHL1805011354FB Date: Jun.05, 2018 Page 4 of 5

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	$\Delta T \leq 30°C$, and $\Delta m \leq 50\%$, and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716		$PCS \leq 2.0$MJ/kg [a] and $PCS \leq 2.0$MJ/kg [b,c] and $PCS \leq 1.4$MJ/m^2 [a] and $PCS \leq 2.0$MJ/kg [a]	-
A2	EN ISO 1182 [a] or	and	$\Delta T \leq 50°C$, and $\Delta m \leq 50\%$, and $t_f \leq 20$ s	-
	EN ISO 1716		$PCS \leq 3.0$MJ/kg [a] and $PCS \leq 4.0$MJ/m^2 [a] and $PCS \leq 4.0$MJ/m^2 [d] and $PCS \leq 3.0$MJ/kg [a]	-
	EN 13823		*FIGRA* ≤ 120W/s and *LFS* < edge of specimen and $THR_{600s} \leq 7.5$MJ	Smoke production [f] and Flaming droplets/particles [g]
B	EN 13823	and	FIGRA ≤ 120W/s and LFS < edge of specimen and THR600s ≤ 7.5MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure =30s		Fs ≤ 150mm within 60 s	
C	EN 13823	and	FIGRA ≤ 250W/s and LFS < edge of specimen and THR600s ≤ 15MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure=30s		Fs ≤ 150mm within 60 s	
D	EN 13823	and	FIGRA ≤ 750W/s	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure=30s		Fs ≤ 150mm within 60 s	
E	EN ISO 11925-2 [i] Exposure =15s		Fs ≤ 150mm within 20 s	flaming droplets/particles [h]
F	No performance determined			

SGS B1 class fire-proof **aluminum composite panel** test report

Test Report



SGS

Test Report No. SDHL1805011354FB Date: Jun.05, 2018 Page 5 of 5

[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 ≤ 2,0 MJ/m² , provided that the product satisfies the following criteria of EN 13823: FIGRA ≤ 20 W/s, and LFS < edge of specimen, and THR_{600s} ≤ 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 ≤ 30m²/s² and TSP_{600s} ≤ 50m² ; s2 = SMOGRA ≤ 180m²/s² and TSP_{600s} ≤ 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 4mm
Mass per unit area: About 6.84kg/m²

Before Test (EN 13823) After Test (EN 13823)

End of Report

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SDHL 142101

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SGS B1 class fire-proof **aluminum composite panel** test report

Test Report

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GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALS CO., LTD

TEST REPORT

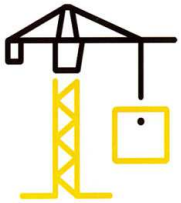
REPORT NUMBER
190402005SHF-001-R1

ISSUE DATE
2019/4/22

REVISE DATE
2019/4/28

PAGES
6

DOCUMENT CONTROL NUMBER
LFT-APAC-SHF-OP-10k



Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch
Plant 5, No. 6958 Daye Road, Fengxian District, Shanghai, China
Tel: 021-61136116 Fax: 021-61189921
Website: www.intertek.com

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Test Report

Issue Date: 2019/4/28 Intertek Report No. 190402005SHF-001-R1

Applicant: GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALS CO., LTD

Applicant Address: NO.2 ZHUYUAN, WEST YANJIANG ROAD, TANBU TOWN, HUADU DISTRICT, GUANGZHOU, CHINA

Attn: Yunhua Duan

SUBJECT: Performance testing
Aluminum Composite Panel (A2 FR)

Dear Sir,
This test report represents the results of our evaluation of the above referenced product(s) to the requirements contained in the following standards:

TEST METHODS AND STANDARDS
Refer to the next following Pages.

SAMPLE ID	MODEL	SPECIFICATION
S190402005SHF.001~002	Silver Metallic (PVDF)	4*0.5mm Brand name: GOODSENSE

SAMPLE RECEIEVED: 2019/4/1
TESTED FROM: 2019/4/2 TO 2019/4/22

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Test Report

Issue Date: 2019/4/28 Intertek Report No. 190402005SHF-001-R1

Test Items, Method and Results:
EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

1.1 HEAT OF COMBUSTION TEST
The test was conducted in accordance with EN ISO 1716. This test evaluates the gross heat of combustion (Q_{PCS}) of products at constant volume in a bomb calorimeter.

1.2 SINGLE BURNING ITEM TEST
The test was conducted in accordance with EN 13823. This test evaluates the potential contribution of a product to the development of a fire, under a fire situation simulating a single burning item near to the product.

1.3 CLASSIFICATION CRITERIA
The classification was determined in accordance with EN 13501-1:2007+A1:2009. The class A2 with its corresponding fire performance is given in the table below.

Table - Class of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products.

Class	Test Method(s)	Classification criteria	Additional classifications
A2	EN ISO 1716 and	PCS ≤3.0 MJ/kg [a] and PCS ≤4.0 MJ/m² [b] and PCS ≤4.0 MJ/m² [c] and PCS ≤3.0 MJ/kg [d]	–
	EN 13823	FIGRA ≤ 120 W/s and LFS < edge of specimen and THR_{600s} ≤ 7.5 MJ	Smoke production [e] and Flaming droplets/particles [f]

Note:
a. For homogeneous products and substantial components of non-homogeneous products.
b. For any external non-substantial component of non-homogeneous products.
c. For any internal non-substantial component of non-homogeneous products.
d. For the product as a whole.
e. 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 ≤ 30m²/s² and TSP_{600s} ≤ 50m²; s2 = SMOGRA ≤ 180m²/s² and TSP_{600s} ≤ 200m²; s3 = not s1 or s2.
f. d0 = no flaming droplets/particles in EN 13823 within 600s;
d1 = no flaming droplets/particles persisting longer than 10s in EN 13823 within 600s;
d2 = not d0 or d1.

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Test Report

Issue Date: 2019/4/28 Intertek Report No. 190402005SHF-001-R1

Test Items, Method and Results:

2 RESULTS AND OBSERVATIONS

Method	Parameter		Result
EN ISO 1716:2010	PCS	Facing coating, MJ/m²	0.7
		Aluminium substrate, MJ/kg	0
		Adhesive film, MJ/m²	2.0
		Core material, MJ/kg	2.4
		Adhesive film, MJ/m²	2.0
		Aluminium substrate, MJ/kg	0
		Bottom coating, MJ/m²	0.1
		The whole product, MJ/kg	2.2
EN 13823:2010+A1:2014 *		$FIGRA_{0.2MJ}$, W/s	0
		THR_{600s}, MJ	0.4
		LFS, m	<Edge of specimen
		SMOGRA, m²/s²	0
		TSP_{600s}, m²	23
		Flaming droplets/particles	No flaming droplets/particles occur within 600s

Note
1. Test item marked with * was conducted at the external approved facility, located at Guangzhou.

2. Per EN 13823, the samples were free standing at a distance of 80mm from the backing board. Backing board was a 12mm thick calcium silicate board. The density of the calcium silicate board was 900kg/m³.

3. The information of each component of the product was declared by applicant, see below table.

Layer No. (from face to back)	Material of each Layer	Mass per unit area (kg/m²)	Thickness (mm)
1	Facing coating	0.0338	0.025
2	Aluminium substrate	1.3100	0.480
3	Adhesive film	0.0465	0.050
4	Core material	5.7000	3.000
5	Adhesive film	0.0465	0.050
6	Aluminium substrate	1.3100	0.480
7	Bottom coating	0.0160	0.008

intertek A2 class fire-proof **aluminum composite panel** test report

Test Report

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Test Report

Issue Date: 2019/4/28 Intertek Report No. 190402005SHF-001-R1

3 CLASSIFICATION

The classification has been carried out in accordance with EN 13501-1.

Fire behaviour		Smoke production		Flaming Droplets	
A2	-	s 1	-	d	0

Reaction to fire classification: A2 - s1, d0

4 Test Photos of EN 13823

Before test (Long wing)

Before test (Short wing)

After test (Long wing)

After test (Short wing)

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Test Report

Issue Date: 2019/4/28 Intertek Report No. 190402005SHF-001-R1

APPENDIX: SAMPLE RECEIVED PHOTO

Front view

Back view

Core material

Facing coating

Adhesive film

Bottom coating

REPORT AUTHORIZED

When signed with physical or electronic signature, the contents of this report have been prepared and approved per Intertek's quality process in accordance with ISO 17025.

Sally Tod Qian

Name: Sally Xie
Title: Reviewer

Name: Tod Qian
Title: Project Engineer

Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
190402005SHF-001	2019/4/22	First issue	Tod Qian	Sally Xie
190402005SHF-001-R1	2019/4/28	Add brand logo	Tod Qian	Sally Xie

intertek A2 class fire-proof **aluminum composite panel** test report

Test Report

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Guangzhou Jixin Xiang Decoration Building Materials Co., Ltd.

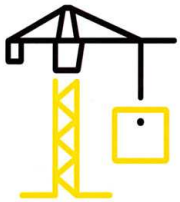
TEST REPORT

REPORT NUMBER
181030002SHF-001

ISSUE DATE
2018/11/16

PAGES
6

DOCUMENT CONTROL NUMBER
LFT-APAC-SHF-OP-10k



Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch
Plant 5, No. 6958 Daye Road, Fengxian District, Shanghai, China
Tel: 021-61136116 Fax: 021-61189921
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Test Report

Issue Date: 2018/11/16 Intertek Report No. 181030002SHF-001

Applicant: Guangzhou Jixin Xiang Decoration Building Materials Co., Ltd.

Applicant Address: No. 2, Yanjiang road, huadu district, Guangzhou, Guangdong province

Attn: Hua Du

SUBJECT: Performance testing
Three-dimensional composite aluminum plate

Dear Sir,
This test report represents the results of our evaluation of the above referenced product(s) to the requirements contained in the following standards:

TEST METHODS AND STANDARDS
Refer to the next following Pages.

SAMPLE ID	MODEL	SPECIFICATION
S181030002SHF.001~002	9901	4.0*0.48

SAMPLE RECEIEVED: 2018/10/29
TESTED FROM: 2018/10/30 TO 2018/11/16

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Total Quality. Assured.

Test Report

Issue Date: 2018/11/16 Intertek Report No. 181030002SHF-001

Test Items, Method and Results:
Test method: EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

1.1 HEAT OF COMBUSTION TEST
The test was conducted in accordance with EN ISO 1716. This test evaluates the gross heat of combustion (Q_{PCS}) of products at constant volume in a bomb calorimeter.

1.2 SINGLE BURNING ITEM TEST
The test was conducted in accordance with EN 13823. This test evaluates the potential contribution of a product to the development of a fire, under a fire situation simulating a single burning item near to the product.

1.3 CLASSIFICATION CRITERIA
The classification was determined in accordance with EN 13501-1:2007+A1:2009. The class A2 with its corresponding fire performance is given in the table below.

Table - Class of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products.

Class	Test Method(s)	Classification criteria	Additional classifications
A2	EN ISO 1716 and	PCS ≤3.0 MJ/kg [a] and PCS ≤4.0 MJ/m^2 [b] and PCS ≤4.0 MJ/m^2 [c] and PCS ≤3.0 MJ/kg [d]	--
	EN 13823	FIGRA ≤ 120 W/s and LFS < edge of specimen and THR_{600s} ≤ 7.5 MJ	Smoke production [e] and Flaming droplets/particles [f]

Note:
a. For homogeneous products and substantial components of non-homogeneous products.
b. For any external non-substantial component of non-homogeneous products.
c. For any internal non-substantial component of non-homogeneous products.
d. For the product as a whole.
e. 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 ≤ 30m^2/s^2 and TSP_{600s} ≤ 50m^2; s2 = SMOGRA ≤ 180m^2/s^2 and TSP_{600s} ≤ 200m^2; s3 = not s1 or s2.
f. d0 = no flaming droplets/particles in EN 13823 within 600s;
d1 = no flaming droplets/particles persisting longer than 10s in EN 13823 within 600s;
d2 = not d0 or d1.

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Test Report

Issue Date: 2018/11/16 Intertek Report No. 181030002SHF-001

Test Items, Method and Results:

2 RESULTS AND OBSERVATIONS

Method	Parameter		Result
EN ISO 1716:2010	PCS	Facing coating, MJ/m^2	0.4
		Aluminium substrate, MJ/kg	0
		Adhesive film, MJ/m^2	2.1
		Core material, MJ/kg	0
		Adhesive film, MJ/m^2	2.1
		Aluminium substrate, MJ/kg	0
		Bottom coating, MJ/m^2	0.1
		The whole product, MJ/kg	1.3
EN 13823:2010+A1:2014 *		$FIGRA_{0.2MJ}$, W/s	0
		THR_{600s}, MJ	0.4
		LFS, m	<Edge of specimen
		SMOGRA, m^2/s^2	0
		TSP_{600s}, m^2	22
		Flaming droplets/particles	No flaming droplets/particles occur within 600s

Note
1. Test item marked with * was conducted at the external approved facility, located at Guangzhou.

2. Per EN 13823, the samples were free standing at a distance of 80mm from the backing board. Backing board was a 12mm thick calcium silicate board. The density of the calcium silicate board was 900kg/m^3.

3. The information of each component of the product was declared by applicant, see below table.

Layer No. (from face to back)	Material of each Layer	Mass per unit area (kg/m^2)	Thickness (mm)
1	Facing coating	0.0338	0.025
2	Aluminium substrate	1.3100	0.480
3	Adhesive film	0.0465	0.050
4	Core material	0.7600	2.850
5	Adhesive film	0.0465	0.050
6	Aluminium substrate	1.3100	0.480
7	Bottom coating	0.0160	0.080

intertek A2 class fire-proof **aluminum core composite panel** test report

Test Report

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Test Report

Issue Date: 2018/11/16 Intertek Report No. 181030002SHF-001

3 CLASSIFICATION

The classification has been carried out in accordance with EN 13501-1.

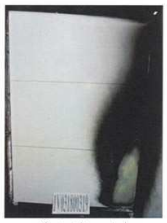
Fire behaviour		Smoke production		Flaming Droplets	
A2	-	s 1	-	d	0

Reaction to fire classification: *A2 - s1, d0*

4 Test Photos of EN 13823

Before test (Long wing)

Before test (Short wing)



After test (Long wing)

After test (Short wing)

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Test Report

Issue Date: 2018/11/16 Intertek Report No. 181030002SHF-001

APPENDIX: SAMPLE RECEIVED PHOTO

Front view

Back view

Section view

Facing coating

Adhesive film

Bottom coating

REPORT AUTHORIZED

When signed with physical or electronic signature, the contents of this report have been prepared and approved per Intertek's quality process in accordance with ISO 17025.

Name: Sally Xie
Title: Reviewer

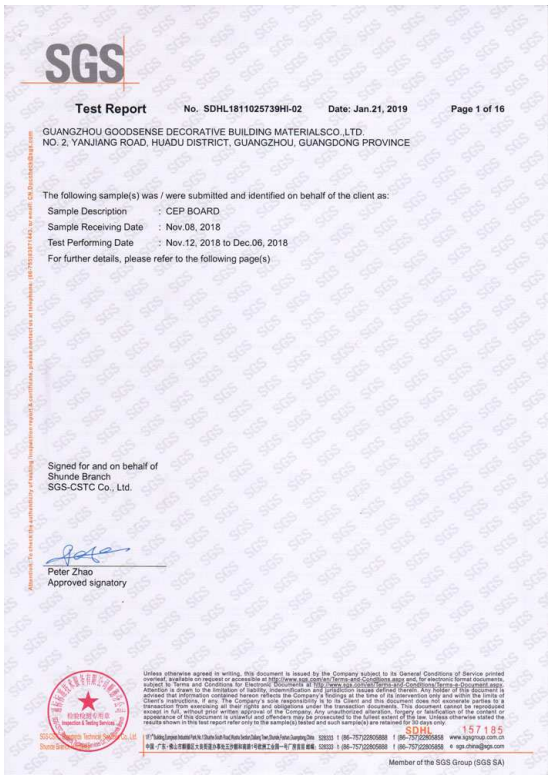
Name: Tod Qian
Title: Project Engineer

Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
181030002SHF-001	2018/11/16	First issue	Tod Qian	Sally Xie

intertek A2 class fire-proof **aluminum core composite panel** test report

Test Report



SGS

Test Report No. SDHL1811025739HI-02 Date: Jan.21, 2019 Page 1 of 16

GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALSCO.,LTD.
NO. 2, YANJIANG ROAD, HUADU DISTRICT, GUANGZHOU, GUANGDONG PROVINCE

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

Sample Description : CEP BOARD
Sample Receiving Date : Nov.08, 2018
Test Performing Date : Nov.12, 2018 to Dec.06, 2018
For further details, please refer to the following page(s)

Signed for and on behalf of
Shunde Branch
SGS-CSTC Co., Ltd.

Peter Zhao
Approved signatory

SDHL 157185

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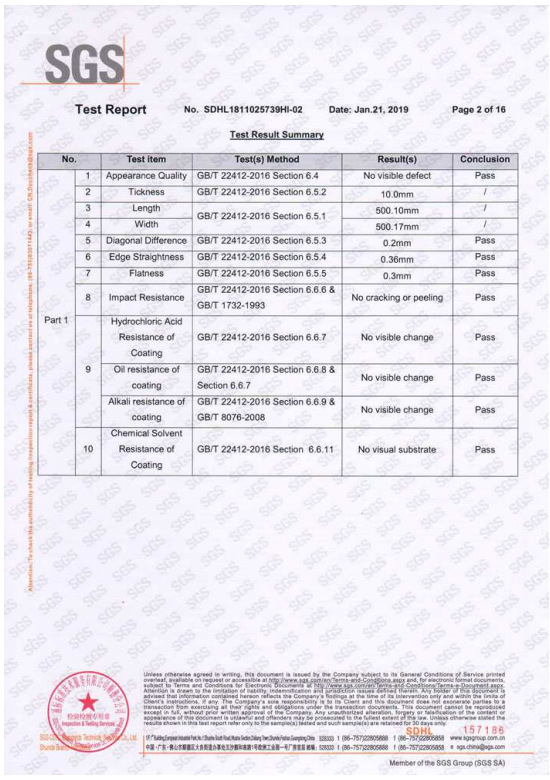

SGS

Test Report No. SDHL1811025739HI-02 Date: Jan.21, 2019 Page 2 of 16

Test Result Summary

No.		Test Item	Test(s) Method	Result(s)	Conclusion
Part 1	1	Appearance Quality	GB/T 22412-2016 Section 6.4	No visible defect	Pass
	2	Tickness	GB/T 22412-2016 Section 6.5.2	10.0mm	/
	3	Length	GB/T 22412-2016 Section 6.5.1	500.10mm	/
	4	Width		500.17mm	/
	5	Diagonal Difference	GB/T 22412-2016 Section 6.5.3	0.2mm	Pass
	6	Edge Straightness	GB/T 22412-2016 Section 6.5.4	0.36mm	Pass
	7	Flatness	GB/T 22412-2016 Section 6.5.5	0.3mm	Pass
	8	Impact Resistance	GB/T 22412-2016 Section 6.6.6 & GB/T 1732-1993	No cracking or peeling	Pass
		Hydrochloric Acid Resistance of Coating	GB/T 22412-2016 Section 6.6.7	No visible change	Pass
	9	Oil resistance of coating	GB/T 22412-2016 Section 6.6.8 & Section 6.6.7	No visible change	Pass
		Alkali resistance of coating	GB/T 22412-2016 Section 6.6.9 & GB/T 8076-2008	No visible change	Pass
	10	Chemical Solvent Resistance of Coating	GB/T 22412-2016 Section 6.6.11	No visual substrate	Pass

SDHL 157186

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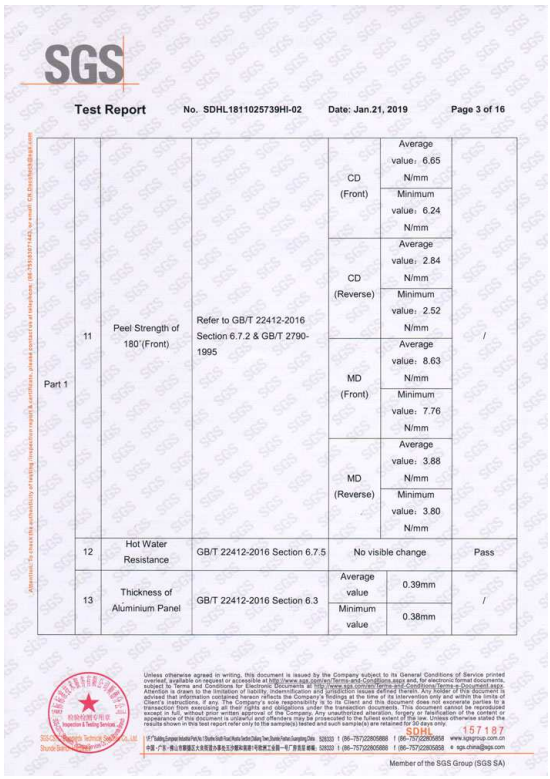

SGS

Test Report No. SDHL1811025739HI-02 Date: Jan.21, 2019 Page 3 of 16

Part 1	11	Peel Strength of 180°(Front)	Refer to GB/T 22412-2016 Section 6.7.2 & GB/T 2790-1995	CD (Front)	Average value：6.65 N/mm Minimum value：6.24 N/mm	/
				CD (Reverse)	Average value：2.84 N/mm Minimum value：2.52 N/mm	
				MD (Front)	Average value：8.63 N/mm Minimum value：7.76 N/mm	
				MD (Reverse)	Average value：3.88 N/mm Minimum value：3.80 N/mm	
	12	Hot Water Resistance	GB/T 22412-2016 Section 6.7.5	No visible change		Pass
	13	Thickness of Aluminium Panel	GB/T 22412-2016 Section 6.3	Average value	0.39mm	/
				Minimum value	0.38mm	

SDHL 157187

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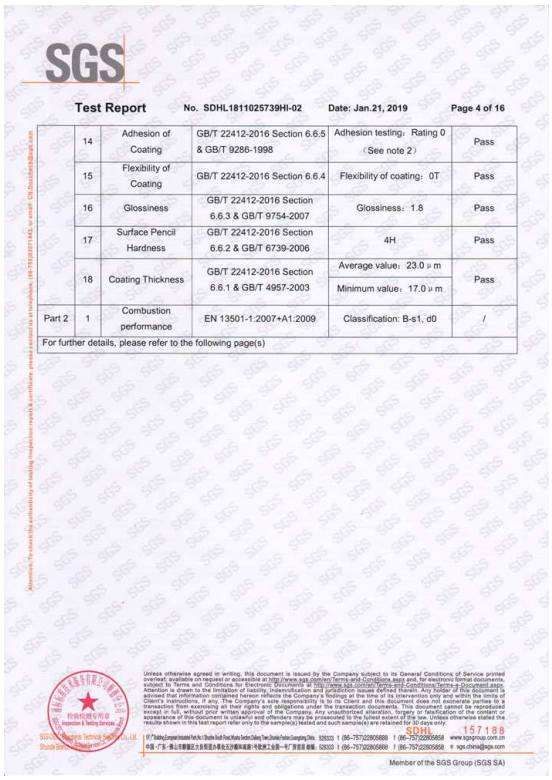

SGS

Test Report No. SDHL1811025739HI-02 Date: Jan.21, 2019 Page 4 of 16

	14	Adhesion of Coating	GB/T 22412-2016 Section 6.6.5 & GB/T 9286-1998	Adhesion testing：Rating 0 （See note 2）	Pass
	15	Flexibility of Coating	GB/T 22412-2016 Section 6.6.4	Flexibility of coating：0T	Pass
	16	Glossiness	GB/T 22412-2016 Section 6.6.3 & GB/T 9754-2007	Glossiness：1.8	Pass
	17	Surface Pencil Hardness	GB/T 22412-2016 Section 6.6.2 & GB/T 6739-2006	4H	Pass
	18	Coating Thickness	GB/T 22412-2016 Section 6.6.1 & GB/T 4957-2003	Average value：23.0 μm Minimum value：17.0 μm	Pass
Part 2	1	Combustion performance	EN 13501-1:2007+A1:2009	Classification: B-s1, d0	/

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

SDHL 157188

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SGS **CEP Board panel** test report

Test Report

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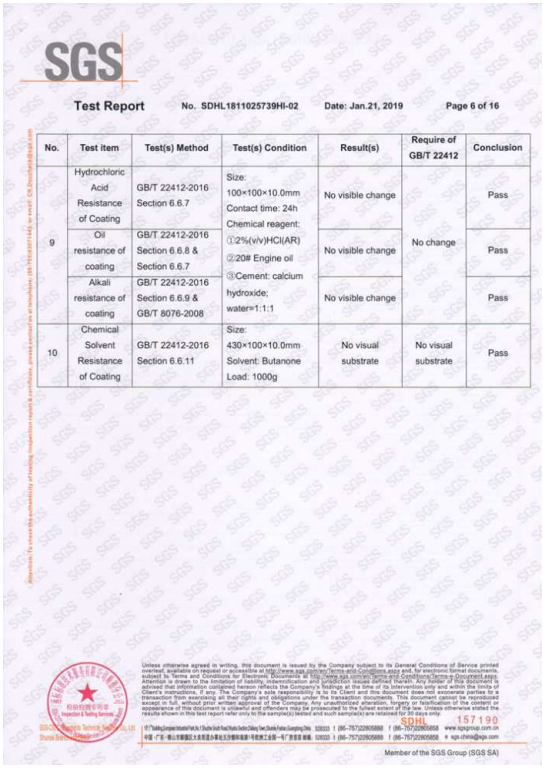
Test Information:
Sample description: See photos
Part 1:

No.	Test item	Test(s) Method	Test(s) Condition	Result(s)	Require of GB/T 22412	Conclusion
1	Appearance Quality	GB/T 22412-2016 Section 6.4	Size: 500×500×10.0mm	No visible defect	See Table 1	Pass
2	Tickness	GB/T 22412-2016 Section 6.5.2	Size: 500×500×10.0mm	10.0mm	/	/
3	Length	GB/T 22412-2016 Section 6.5.1	Size: 500×500×10.0mm	500.10mm	/	/
4	Width			500.17mm	/	/
5	Diagonal Difference	GB/T 22412-2016 Section 6.5.3	Size: 500×500×10.0mm	0.2mm	≤5mm	Pass
6	Edge Straightness	GB/T 22412-2016 Section 6.5.4	Size: 500×500×10.0mm	0.36mm	≤1mm/m	Pass
7	Flatness	GB/T 22412-2016 Section 6.5.5	Size: 500×500×10.0mm	0.3mm	≤5mm/m	Pass
8	Impact Resistance	GB/T 22412-2016 Section 6.6.6 & GB/T 1732-1993	Size: 75×50×10.0mm Drop diameter: 12.7mm Drop weight: 1kg Height: 20cm	No cracking or peeling	≥20kg·cm	Pass



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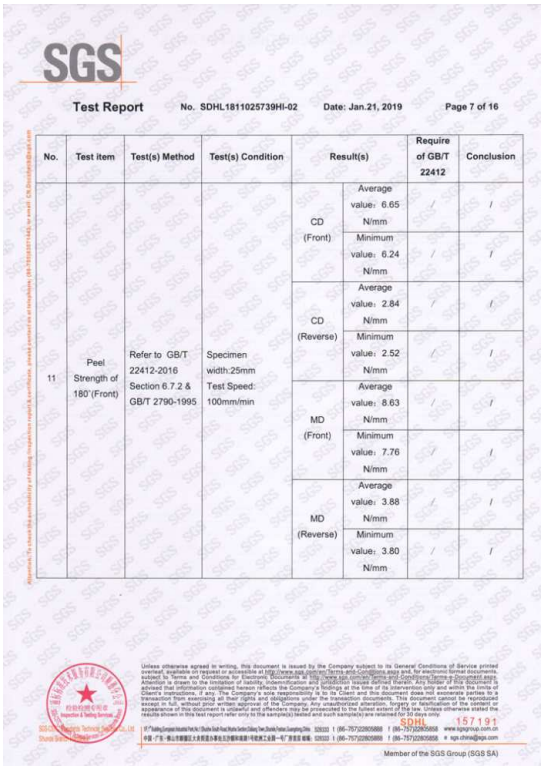
No.	Test item	Test(s) Method	Test(s) Condition	Result(s)	Require of GB/T 22412	Conclusion
9	Hydrochloric Acid Resistance of Coating	GB/T 22412-2016 Section 6.6.7	Size: 100×100×10.0mm Contact time: 24h Chemical reagent: ①2%(v/v)HCl(AR) ②20# Engine oil ③Cement: calcium hydroxide: water=1:1:1	No visible change	No change	Pass
	Oil resistance of coating	GB/T 22412-2016 Section 6.6.8 & Section 6.6.7		No visible change		Pass
	Alkali resistance of coating	GB/T 22412-2016 Section 6.6.9 & GB/T 8076-2008		No visible change		Pass
10	Chemical Solvent Resistance of Coating	GB/T 22412-2016 Section 6.6.11	Size: 430×100×10.0mm Solvent: Butanone Load: 1000g	No visual substrate	No visual substrate	Pass



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No.	Test item	Test(s) Method	Test(s) Condition	Result(s)		Require of GB/T 22412	Conclusion
11	Peel Strength of 180°(Front)	Refer to GB/T 22412-2016 Section 6.7.2 & GB/T 2790-1995	Specimen width:25mm Test Speed: 100mm/min	CD (Front)	Average value：6.65 N/mm	/	/
					Minimum value：6.24 N/mm	/	/
				CD (Reverse)	Average value：2.84 N/mm	/	/
					Minimum value：2.52 N/mm	/	/
				MD (Front)	Average value：8.63 N/mm	/	/
					Minimum value：7.76 N/mm	/	/
				MD (Reverse)	Average value：3.88 N/mm	/	/
					Minimum value：3.80 N/mm	/	/

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No.	Test item	Test(s) Method	Test(s) Condition	Result(s)		Require of GB/T 22412	Conclusion
12	Hot Water Resistance	GB/T 22412-2016 Section 6.7.5	Size: 200×200×10.0mm Soak conditions: (98±2)℃，2h→natural cooling to room temperature in the distilled water	No visible change		No change	Pass
13	Thickness of Aluminium Panel	GB/T 22412-2016 Section 6.3	Measurement by digital display micrometer and eddy current method Laboratory environment: 23±2℃, 50±5%RH	Average value	0.390 mm	/	/
				Minimum value	0.377 mm	/	
14	Adhesion of Coating	GB/T 22412-2016 Section 6.6.5 & GB/T 9286-1998	Spacing: 1mm Tape: 3M® 600 Laboratory environment: 23±2℃, 50±5%RH	Adhesion testing，Rating 0 （See note 2）		Rating 0	Pass

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No.	Test item	Test(s) Method	Test(s) Condition	Result(s)	Require of GB/T 22412	Conclusion
15	Flexibility of Coating	GB/T 22412-2016 Section 6.6.4	Laboratory environment: 23±2℃, 50±5%RH T - bending	Flexibility of coating：0T	≤3T	Pass
16	Glossiness	GB/T 22412-2016 Section 6.6.3 & GB/T 9754-2007	Laboratory environment: 23±2℃, 50±5%RH Light source: standard C light source	Glossiness：1.8	≤10	Pass
17	Surface Pencil Hardness	GB/T 22412-2016 Section 6.6.2 & GB/T 6739-2006	Laboratory environment: 23±2℃, 50±5%RH Pencil: Mitsubishi® Load:（750±10）g	4H （See note 3）	≥HB	Pass
18	Coating Thickness	GB/T 22412-2016 Section 6.6.1 & GB/T 4957-2003	Eddy current method Laboratory environment: 23±2℃, 50±5%RH	Average value：23.0 μm	≥16 μm	Pass
				Minimum value：17.0 μm	≥14 μm	

Note: 1. All samples were tested after film removal
2. In the GB/T 9286, classification 0 is the best and classification 5 is the worst.
3. According to GB/T 6739-2006, 9H is the hardest, 9B is the softest.
9B-8B-7B-6B-5B-4B-3B-2B-B-HB-F-H-2H-3H-4H-5H-6H-7H-8H-9H
softer ←→ harder

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Photo Appendix:

Original sample | Adhesion of Coating
Impact Resistance | Hydrochloric Acid Resistance of Coating
Oil resistance of coating | Alkali resistance of coating

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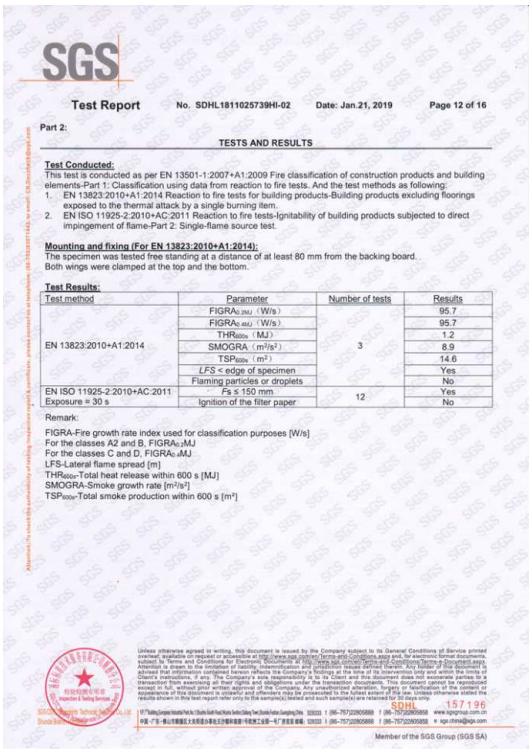
Chemical Solvent Resistance of Coating | Hot Water Resistance
Surface Pencil Hardness | /



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Part 2:

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 11925-2:2010+AC:2011 Reaction to fire tests-Ignitability of building products subjected to direct impingement of flame-Part 2: Single-flame source test.

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 13823:2010+A1:2014	$FIGRA_{0.2MJ}$（W/s）	3	95.7
	$FIGRA_{0.4MJ}$（W/s）		95.7
	THR_{600s}（MJ）		1.2
	SMOGRA（m^2/s^2）		8.9
	TSP_{600s}（m^2）		14.6
	LFS < edge of specimen		Yes
	Flaming particles or droplets		No
EN ISO 11925-2:2010+AC:2011 Exposure = 30 s	*Fs* ≤ 150 mm	12	Yes
	Ignition of the filter paper		No

Remark:
FIGRA-Fire growth rate index used for classification purposes [W/s]
For the classes A2 and B, $FIGRA_{0.4MJ}$
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 [m^2/s^2]
TSP_{600s}-Total smoke production within 600 s [m^2]

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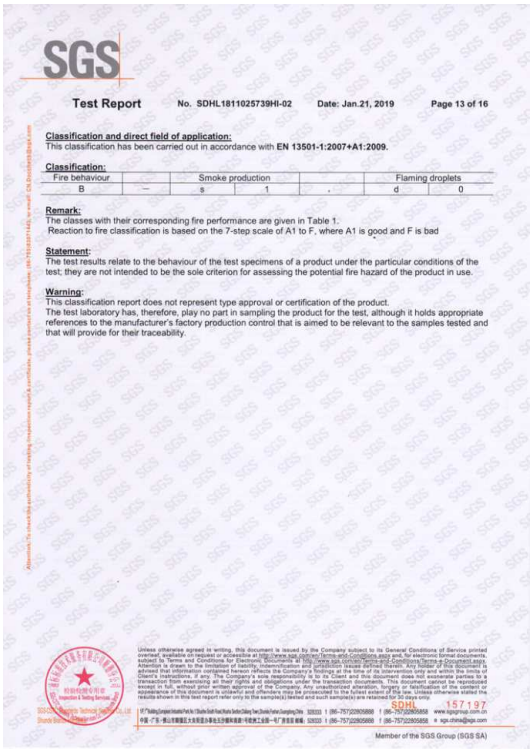

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Classification and direct field of application:
This classification has been carried out in accordance with **EN 13501-1:2007+A1:2009.**

Classification:

Fire behaviour		Smoke production			Flaming droplets	
B	–	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.

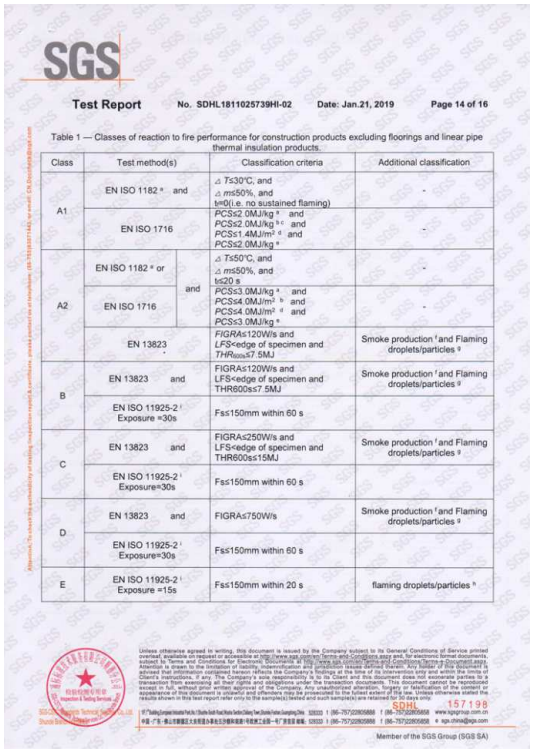

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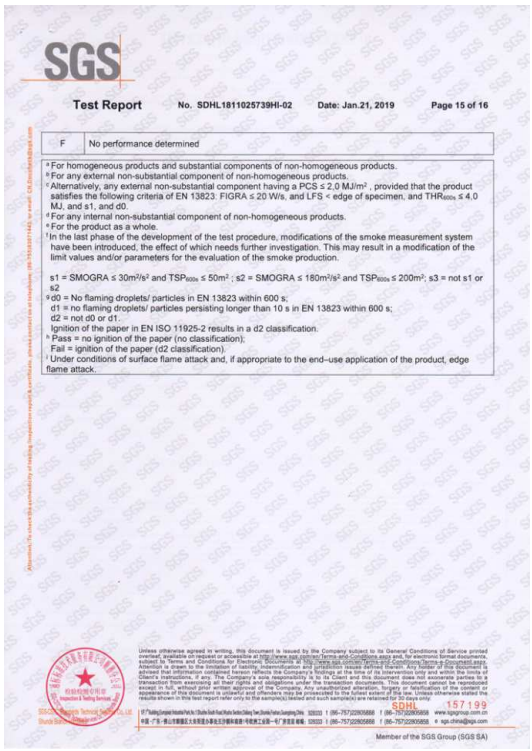
Table 1 — Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products.

Class	Test method(s)		Classification criteria	Additional classification
A1	EN ISO 1182 [a] and		ΔT≤30°C, and Δm≤50%, and t=0(i.e. no sustained flaming)	-
	EN ISO 1716		PCS≤2.0MJ/kg [a, c] and PCS≤2.0MJ/kg [b, c] and PCS≤1.4MJ/m² [d] and PCS≤2.0MJ/kg [e]	-
A2	EN ISO 1182 [a] or	and	ΔT≤50°C, and Δm≤50%, and ts≤20 s	-
	EN ISO 1716		PCS≤3.0MJ/kg [a] and PCS≤4.0MJ/m² [b] and PCS≤4.0MJ/m² [d] and PCS≤3.0MJ/kg [e]	-
	EN 13823		FIGRA≤120W/s and LFS<edge of specimen and THR_{600s}≤7.5MJ	Smoke production [f] and Flaming droplets/particles [g]
B	EN 13823	and	FIGRA≤120W/s and LFS<edge of specimen and THR600s≤7.5MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [f] Exposure =30s		Fs≤150mm within 60 s	
C	EN 13823	and	FIGRA≤250W/s and LFS<edge of specimen and THR600s≤15MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [f] Exposure=30s		Fs≤150mm within 60 s	
D	EN 13823	and	FIGRA≤750W/s	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [f] Exposure=30s		Fs≤150mm within 60 s	
E	EN ISO 11925-2 [f] Exposure =15s		Fs≤150mm within 20 s	flaming droplets/particles [h]



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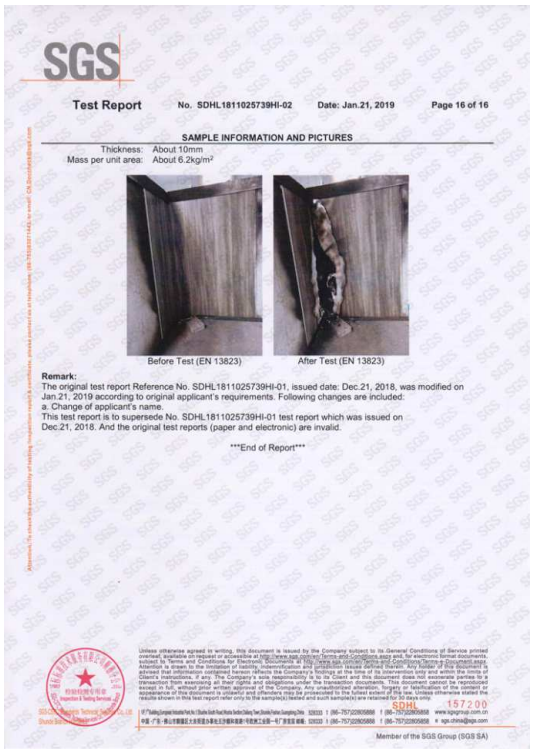
F	No performance determined

[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 ≤ 2.0 MJ/m², provided that the product satisfies the following criteria of EN 13823: FIGRA ≤ 20 W/s, and LFS < edge of specimen, and THR_{600s} ≤ 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 ≤ 30m²/s² and TSP_{600s} ≤ 50m² ; s2 = SMOGRA ≤ 180m²/s² and TSP_{600s} ≤ 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.



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SAMPLE INFORMATION AND PICTURES

Thickness: About 10mm
Mass per unit area: About 6.2kg/m²

Before Test (EN 13823)

After Test (EN 13823)

Remark:
The original test report Reference No. SDHL1811025739HI-01, issued date: Dec.21, 2018, was modified on Jan.21, 2019 according to original applicant's requirements. Following changes are included:
a. Change of applicant's name.
This test report is to supersede No. SDHL1811025739HI-01 test report which was issued on Dec.21, 2018. And the original test reports (paper and electronic) are invalid.

End of Report

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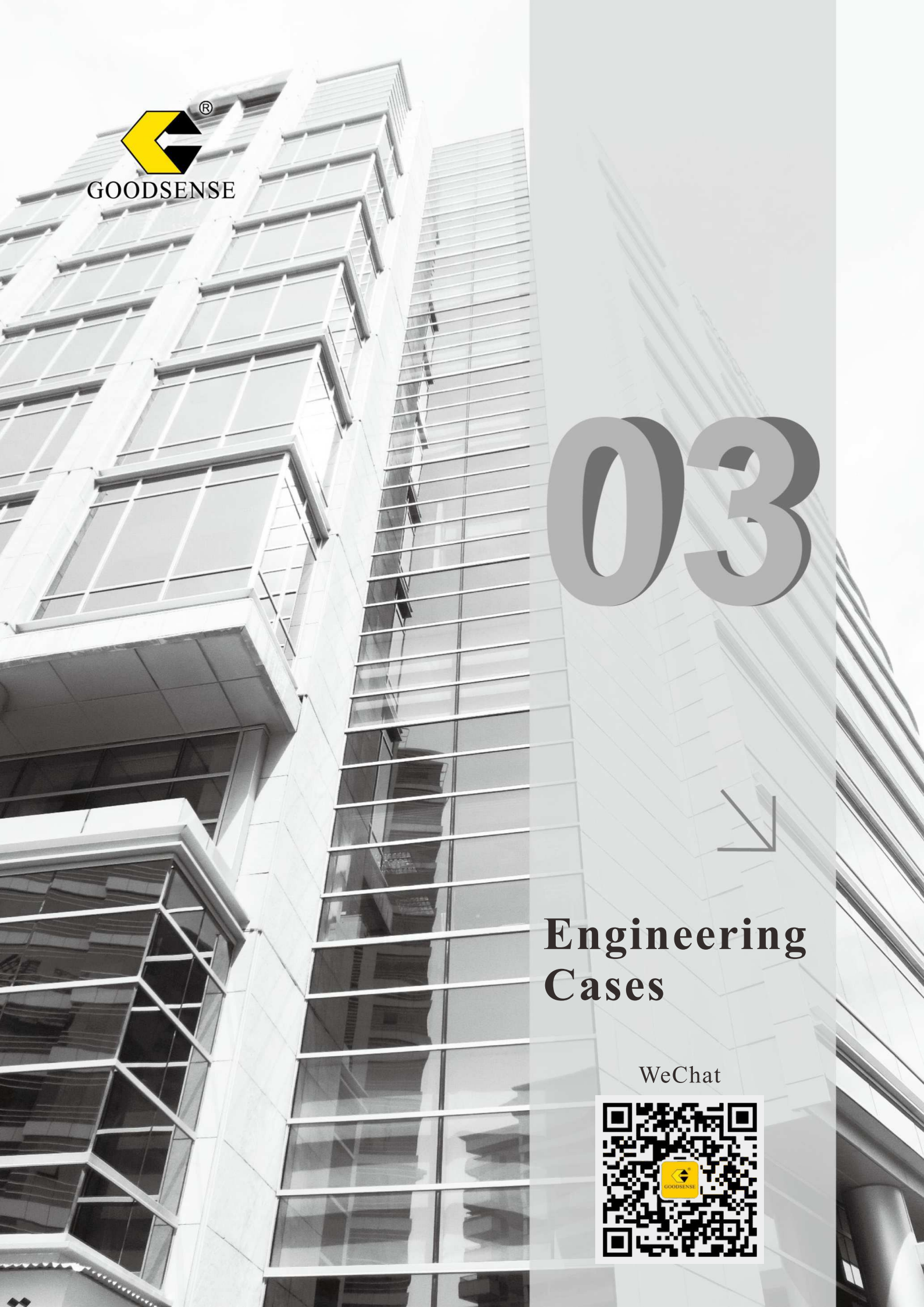

GOODSENSE

03

Engineering Cases

WeChat

Engineering Cases

Engineering Cases

Engineering Cases

Engineering Cases

Engineering Cases

Engineering Cases

Engineering Cases

Engineering Cases


和平商务中心


东莞天一城广场

Engineering Cases


广州亚运场馆

广州白云万达广场

Engineering Cases

Engineering Cases

Engineering Cases