

GUANGZHOU GOODSENSE DECORATIVE BUILDING MATERIALS CO., LTD

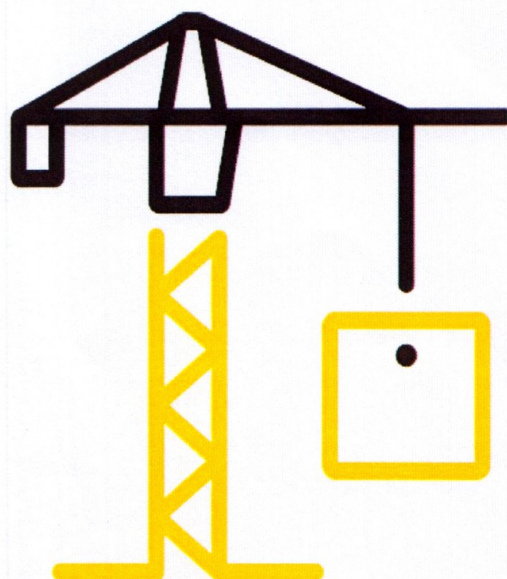
TEST REPORT

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190402005SHF-002

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2019/5/9

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Test Report

Issue Date: 2019/5/9 Intertek Report No. 190402005SHF-002

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
EN ISO 1716:2010 and EN 13823:2010+A1:2014

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

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

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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	$PCS \leq 3.0 \text{ MJ/kg}^a$ and $PCS \leq 4.0 \text{ MJ/m}^2^b$ and $PCS \leq 4.0 \text{ MJ/m}^2^c$ and $PCS \leq 3.0 \text{ MJ/kg}^d$	--
	EN 13823	$FIGRA \leq 120 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5 \text{ MJ}$	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.
 $s1 = SMOGRA \leq 30 \text{ m}^2/\text{s}^2$ and $TSP_{600s} \leq 50 \text{ m}^2$; $s2 = SMOGRA \leq 180 \text{ m}^2/\text{s}^2$ and $TSP_{600s} \leq 200 \text{ m}^2$; $s3 = \text{not } s1 \text{ or } s2$.
- f. $d0 = \text{no flaming droplets/particles in EN 13823 within 600s}$;
 $d1 = \text{no flaming droplets/particles persisting longer than 10s in EN 13823 within 600s}$;
 $d2 = \text{not } d0 \text{ or } d1$.

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Test Items, Method and Results:

2 RESULTS AND OBSERATIONS

Method	Parameter	Result
EN ISO 1716:2010	Facing coating, MJ/m ²	0.7
	Aluminium substrate, MJ/kg	0
	Adhesive film, MJ/m ²	2.0
	Core material, MJ/kg	2.4
	Adhesive film, MJ/m ²	2.0
	Aluminium substrate, MJ/kg	0
	Bottom coating, MJ/m ²	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
	SMOGR _A , m ² /s ²	0
	TSP _{600s} , m ²	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/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	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

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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)



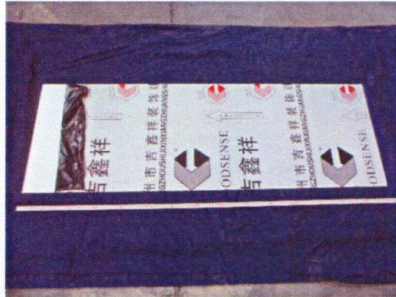
After test (Short wing)

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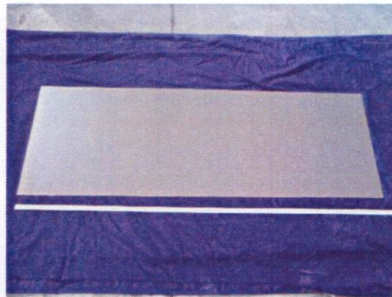
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APPENDIX: SAMPLE RECEIVED PHOTO



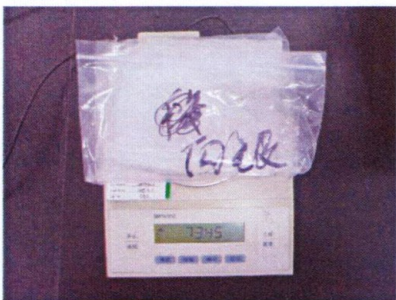
Front view



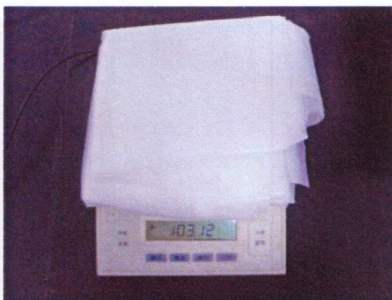
Back view



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.



Harrison Tod Qian
Name: Harrison Li Name: Tod Qian
Title: Reviewer Title: Project Engineer

Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
190402005SHF-002	2019/5/9	First issue	Tod Qian	Harrison Li