

# SHANDONG GOLDEN SUNSHINE BUILDING MATERIALS CO., LTD

## TEST REPORT

**REPORT NUMBER**

171124002SHF-BP-1

**ISSUE DATE**

2017-12-08

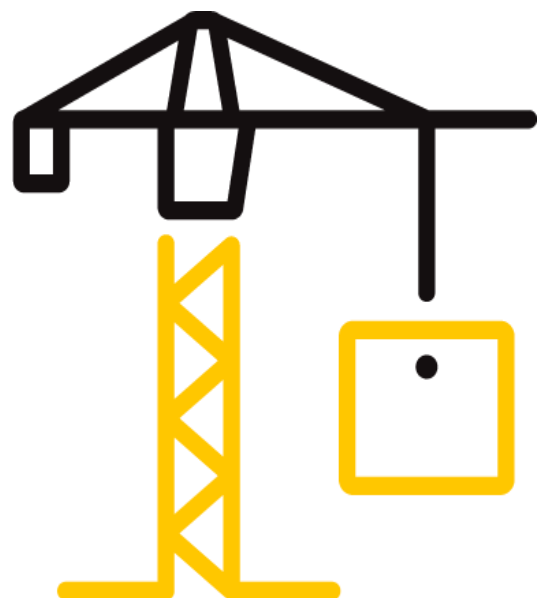
**PAGES**

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**DOCUMENT CONTROL NUMBER**

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## Test Report

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Applicant: SHANDONG GOLDEN SUNSHINE BUILDING MATERIALS CO., LTD

Applicant Address: No.1 YIHE FIVE ROAD ECONOMIC DEVELOPMENT ZONE, COMPREHENSIVE FREE TRADE ZONE, LINYI CITY, SHANDONG, CHINA

Attn: Regina

**SUBJECT:** Performance testing  
A2 FIREPROOF ALUMINUM COMPOSITE PANEL

Dear Sir,

This test report for 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
S171124002SHF.001	/	/

SAMPLE RECEIEVED: 2017-11-23  
TESTED FROM: 2017-11-24 TO 2017-12-08

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## 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 classes A2 with their corresponding fire performance are given in the table below.

Table - Classes 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 < edge of specimen and $THR_{600s} \leq 7.5 \text{ MJ}$	Smoke production <sup>e</sup> and Flaming droplets/particles <sup>f</sup>

#### 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  $TSP_{600s} \leq 200 \text{ m}^2$ ;  $s3 = \text{not } s1$  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 Items, Method and Results:

### 2 RESULTS AND OBSERATIONS

Method	Parameter	Result
EN ISO 1716:2010	Facing coating, MJ/m <sup>2</sup>	2.3
	Aluminium Substrate, MJ/kg	0
	Adhesive, MJ/m <sup>2</sup>	3.4
	Core, MJ/kg	2.7
	Adhesive, MJ/m <sup>2</sup>	3.4
	Aluminium Substrate, MJ/kg	0
	Bottom coating, MJ/m <sup>2</sup>	1.6
	The whole product, MJ/kg	3.0
EN 13823:2010+A1:2014	FIGRA <sub>0.2MJ</sub> , W/s	47
	THR <sub>600s</sub> , MJ	0.7
	LFS, m	<Edge of Specimen
	SMOGRA, m <sup>2</sup> /s <sup>2</sup>	0
	TSP <sub>600s</sub> , m <sup>2</sup>	30
	Flaming Droplets/Particles	No flaming droplets/particles occur within 600s

Note

1. This test 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 9mm thick calcium silicate board. The density of the calcium silicate board was 900kg/m<sup>3</sup>.

### 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

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### 4 Test Photos



Before test (Long wing)



Before test (Short wing)



After test (Long wing)



After test (Short wing)

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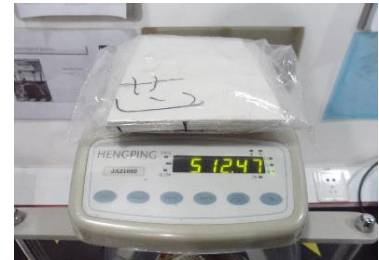
### APPENDIX: SAMPLE RECEIVED PHOTO



Test specimens



Adhesive



Core



Facing coating



Bottom coating

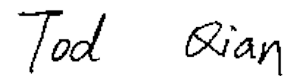
### REPORT AUTHORIZED

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: Sun Sun      Name: Sally Xie  
 Title: Approver      Title: Reviewer



Name: Tod Qian  
 Title: Project Engineer

### Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
171124002SHF-BP-1	2017-12-08	First issue	Tod Qian	Sally Xie