TEST REPORT

No. : SC100820741-1
Date : Sep.29,2010

JIANGSU XIECHENG SCIENCE AND TECHNOLOGY DEVE.CO.,LTD
INDUSTRIAL ZONE, JINHU COUNTY, JIANGSU PROVINCE, CHINA

THIS REPORT IS TO SUPERSEDE TEST REPORT NO.SC100820741 DATE: Sep.02, 2010

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

Sample Name	:	A2 FIRE RESISTANT ALUMINUM COMPOSITE PANEL
Sample No.	:	SC100820741
Test Required	:	Fire test
Test Method	:	EN 13501-1:2007
Product specification	:	1200 X 2400 X 4 X 0.5 X 0.5(mm)
Manufacturer	:	Jiangsu Xiecheng Science And Technology Deve.Co.,Ltd
Brand	:	ALMINE
Date of Receipt	:	Aug.09,2010
Test Period	:	Aug.09,2010 to Sep.02,2010
Test result(s)	:	Please see next pages

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

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd

Sally Xie
Authorized signatory

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Test Results:

I. Test conducted

This test is conducted as per EN 13501-1:2007 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 ISO 1716:2002 Reaction to fire tests for building products — Determination of the heat of combustion.
2. EN 13823:2002 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.

II. Details of classified product

a) Nature and end use application

The product "A2 FIRE RESISTANT ALUMINUM COMPOSITE PANEL" is defined as a decorative sheet. Its classification is valid for the following end use application:

"Eventually be used in indoor and outdoor wall for decoration (fire resistant)".

b) Description

The details of the tested specimen given below have been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

The product "A2 FIRE RESISTANT ALUMINUM COMPOSITE PANEL" is consists of aluminum Coil+ Core Material and Adhesive film.

Layer	Name	Mass per unit area	Color	Composition
No.1: Surface	Aluminum Coil	1360g/m^2	White	Al 99.9%, Others 0.1%
No.2: Middle	Adhesive Film	10g/m^2	White	EVA 100%
No.3: Middle	Core Material	5400g/m^2	White	MgO 60%, $Al(OH)_3$ 20%; Others 20%
No.4: Middle	Adhesive Film	10g/m^2	White	EVA 100%
No.5: Surface	Aluminum Coil	1360g/m^2	White	Al 99.9%, Others 0.1%

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

Mounting and fixing:

Calcium silicate board, with its density approximate 900kg/m^3, thickness 9mm is as the substrate.

The test specimens are fixed mechanically in the substrate with no cavity behind it. No joint in the long wing of the specimen.

III. Test results

Test method	Parameter	Number of tests	Results
EN ISO 1716	PCS/ MJ/kg [a]	3	1.25
	PCS/ MJ/ m^2 [b]		--
	PCS/ MJ/m^2 [d]		0.41
	PCS/ MJ/kg [e]		0.93
EN 13823	FIGRA(W/s)	3	14.6
	LFS < edge of specimen		Yes
	THR_{600s}(MJ)		2.4
	SMOGRA(m^2/s^2)		10.4
	TSP_{600s}(m^2)		10.1
	Flaming particles or droplets		No

Note:

PCS – gross calorific potential [MJ/kg or MJ/m^2]

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

IV. Classification and direct field of application

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

a) Classification

The product, A2 FIRE RESISTANT ALUMINUM COMPOSITE PANEL, classification is as following,

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

Reaction to fire classification: A2—s1, d0

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

b) Field of application

This classification for the submitted sample as described in §II b, is valid for the following end use condition:

---With all substrates classified A1 and A2

---With mechanical fixing

---No joint

---No an air gap

This classification is valid for the following product parameters:

---Characteristics are described in § II b of this test reports

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.

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

Annex A

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

Class	Test method(s)		Classification criteria	Additional classification
A1	EN ISO 1182 [a] and		$\Delta T \leq 30$℃, and $\Delta m \leq 50\%$, and $t_f = 0$(i.e. no sustained flaming)	-
	EN ISO 1716		*PCS*≤2.0MJ/kg [a] and *PCS*≤2.0MJ/kg [b c] and *PCS*≤1.4MJ/m^2 [d] and *PCS*≤2.0MJ/kg [e]	-
A2	EN ISO 1182 [a] or	and	$\Delta T \leq 50$℃, and $\Delta m \leq 50\%$, and $t_f \leq 20$ s	-
	EN ISO 1716		*PCS*≤3.0MJ/kg [a] and *PCS*≤4.0MJ/m^2 [b] and *PCS*≤4.0MJ/m^2 [d] and *PCS*≤3.0MJ/kg [e]	-
	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 $THR_{600s} \leq 7.5$MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure =30s		*Fs*≤150mm within 60s	

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

Class	Test method(s)	Classification criteria	Additional classification
C	EN 13823 and	*FIGRA*≤250W/s and *LFS*＜edge of specimen and THR_{600s}≤15MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure=30s	*F*s≤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	*F*s≤150mm within 60 s	
E	EN ISO 11925-2 [i] Exposure =15s	*F*s≤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 ≤ 2,0 MJ/m^2 , 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 ≤ $30m^2/s^2$ and TSP_{600s} ≤ $50m^2$; s2 = SMOGRA ≤ $180m^2/s^2$ and TSP_{600s} ≤ $200m^2$; s3 = not s1 or s2
[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.

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

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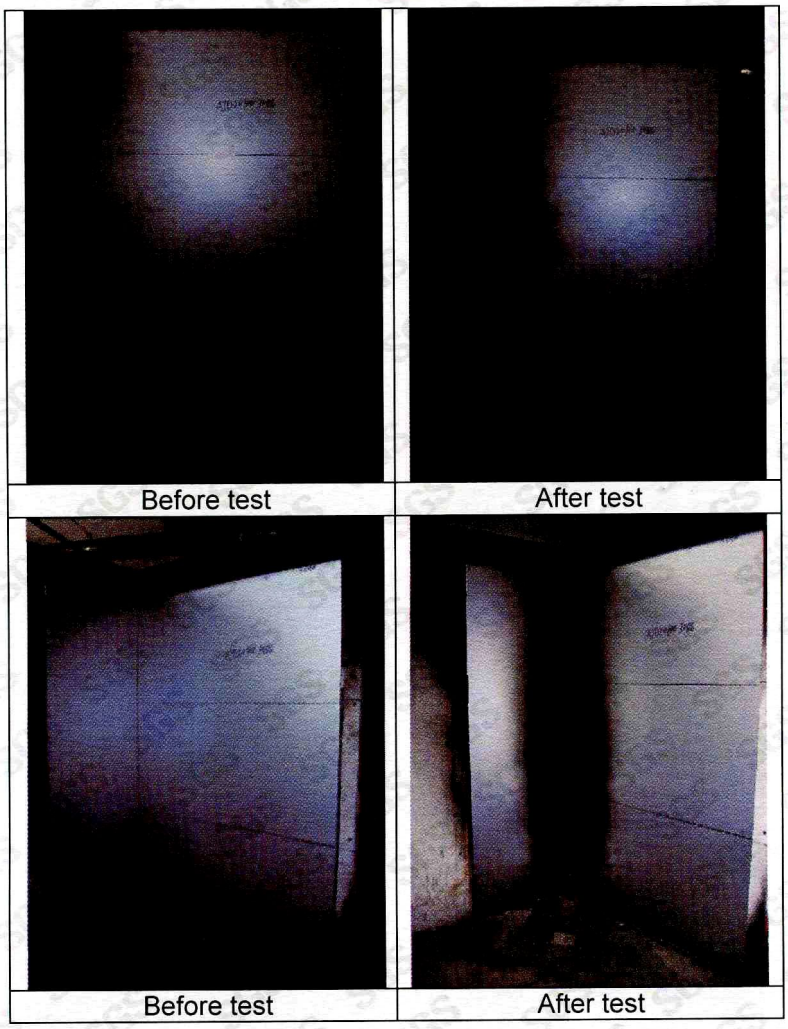
Photo Appendix:



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

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