CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH BS EN 13501-1:2018

Test Sponsor:

Wellbond Aluminium Composite Panel Co.
22 Ahmed Tayseer Street
el Marwa Buildings, Heliopolis
Cairo, Egypt
T: +20 122 776 5519
Website: www.wellbond.com.eg

Test Material:

4mm thick Aluminium Composite Panel – "10th of Ramadan Railway Project LRT"

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

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DUBAI ABU DHABI DOHA RIYADH

Accreditation

Testing

ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories with:

United Kingdom Accreditation Service (UKAS) - Testing Laboratory: **4439**
www.ukas.com

Memberships

Members of European Group of Organization for Fire Testing, Inspection and Certification

www.egolf.org.uk

Member of Association for Specialist Fire Protection

www.asfp.org.uk

Member of Centre for Window and Cladding Technology

www.cwct.co.uk

The work which is the subject of this report falls under the accreditations of **ISO 17025 UKAS.**

Table of Contents

1. INTRODUCTION

This classification report defines the classification assigned to 4mm thick Aluminium Composite Panel in accordance with the procedures given in BS EN 13501-1:2018: Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests.

2. SPONSOR

Name: Wellbond Aluminium Composite Panel Co.
Address: 22 Ahmed Tayseer Street
el Marwa Buildings, Heliopolis
Cairo, Egypt
T: +20 122 776 5519
Website: www.wellbond.com.eg

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th Streets,
Jebel Ali Industrial Area 1
Dubai, UAE
T: T: +971 04 821 5777
Website: www.bell-wright.com

4. DETAILS OF CLASSIFIED PRODUCT

Note: The testing laboratory does not hold any responsibility for the information that has been provided by the test sponsor which could not be verified by the testing laboratory, as this could affect the validity of the test result. All information that could not be verified will be indicated by an asterisk (*) mark.

Product Description		4mm thick Aluminium Composite Panel* (stated)	
Product Reference		4mm thick Aluminium Composite Panel – "10th of Ramadan Railway Project LRT"* (stated)	
Manufacturer		Wellbond Aluminium Composite Panel Co.* (stated)	
Thickness		4mm* (stated)	
Area Weight		8.5 kg/m²* (stated) 8.15 kg/m² (measured by TBWIC)	
Product Details	**Top Coat (Fire side)**	Material	PVDF Coating* (stated)
		Manufacturer	PPG* (stated)
		Colour Tested	White (observed)
		Dry Film Thickness	0.03mm* (stated)
		Area Weight	0.04 kg/m²* (stated)
		Dry Density	1333 kg/m³* (stated)
	Aluminium Skin (Top)	Material	Aluminium* (stated)
		Manufacturer	Baililai decorative material Co., Ltd* (stated)
		Alloy Grade	Alloy 3003 H16* (stated)

		Thickness	0.5mm* (stated)
		Area wieght	1.3645 kg/m²* (stated
		Density	2710 kg/m³* (stated)
	Adhesive	Material	Bonding film* (stated)
		Manufacturer	Heyuan PLG New Materials co., Ltd* (stated)
		Film Thickness	0.05mm* (stated)
		Area Weight	0.0465 kg/m²* (stated)
		Dry Density	930 kg/m³* (stated)
	Core	Material	Mineral Core* (stated)
		Manufacturer	Jiangsu Harwal Technology Co. Ltd.* (stated)
		Thickness	3.0mm* (stated)
		Area Weight	5.7 kg/m²* (stated)
		Density	1900 kg/m³* (stated)
	Adhesive	Material	Bonding film* (stated)
		Manufacturer	Heyuan PLG New Materials co., Ltd* (stated)
		Film Thickness	0.05mm* (stated)
		Area Weight	0.0465 kg/m²* (stated)
		Dry Density	930 kg/m³* (stated)
	Aluminium Skin (Bottom)	Material	Aluminium* (stated)
		Manufacturer	Baililai decorative material Co., Ltd* (stated)
		Alloy Grade	Alloy 3003 H16* (stated)
		Thickness	0.5mm* (stated)
		Density	1.3645 kg/m²* (stated
	Back Coat	Material	Polyester coating (PE)* * (stated)
		Manufacturer	PPG* (stated)
		Colour	Gray* (stated)
		Dry Film Thickness	0.008mm* (stated)
		Area Weight	0.016 kg/m²* (stated)

5. SPECIMEN PREPARATION PROCEDURE

The choice and design and the definition of the specimen have been made by Wellbond Aluminium Composite Panel Co., and TBWIC Testing Laboratory has not been involved in the selection or design of the specimen. The results apply to the samples as received.

Note: There are contexts where information has been provided by the sponsor and verification of information has been done through either technical datasheet or other document submission, or as indicated directly by the sponsor. For this reason, materials have been tested in an as-received condition and TBWIC bears no liability for the legitimacy of the submitted information.

6. REPORT & TEST RESULTS IN SUPPORT OF THIS CLASSIFICATION

6.1. Reports

Name of Laboratory	Test Sponsor	Test Report No.	Test Method/Field of Application Rules
Thomas Bell-Wright International Consultants (TBWIC)	Wellbond Aluminium Composite Panel Co.	VJ062-1	BS EN ISO 1716:2018
		VJ062-2	BS EN 13823:2020

6.2. Results

Test Method	TEST PARAMETERS		No. of tests	TEST RESULTS	
				Continuous parameter-mean (m)	Compliance parameters
	PCS ≤ 4.0 MJ/m^2 (For External Non-Substantial component)	Top coat	3	0.7	Compliant
		Back coat		0.2	Compliant
	PCS ≤ 4.0 MJ/m^2 (For Internal Non-Substantial component)	Adhesive	3	2.1	Compliant
	PCS≤ 3.0 MJ/kg (For Substantial component)	Aluminium Skin	0	0.0	Compliant
		Core	3	0.0	Compliant
	PCS≤ 3.0 MJ/kg (For product as a whole)		-	0.6	Compliant

Test Method	TEST PARAMETERS	No. of tests	TEST RESULTS	
			Continuous parameter-mean (m)	Compliance parameters
BS EN 13823:2020	FIGRA$_{0.2MJ}$ ≤ 120 W/s	3	0	Compliant
	THR$_{600s}$ ≤ 7.5 MJ	3	0.6	Compliant
	Lateral Flame Spread < Edge of Specimen	3	Nil	Compliant
	CRITERIA for subclass "s1"			
	SMOGRA ≤ 30 m^2/s^2 Note 1	3	0	Compliant
	TSP$_{600s}$ ≤ 50 m^2 Note 1	3	17	Compliant
	CRITERIA for subclass "d0"			
	Flaming droplets/particles within 600s	3	Nil	Compliant

Note 1: *Corrected value as per ANNEX A, Clause A.6.1.2 of BS EN 13823:2020.*

7. CLASSIFICATION & FIELD OF APPLICATION

7.1. Reference of classification

This classification has been carried out in accordance with Clause 8 of EN 13501-1:2018.

7.2. Classification

The product, 4mm thick Aluminium Composite Panel in relation to its reaction to fire behavior are classified;

Fire behavior		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.

7.3. Field of application

This classification is valid for the following end use applications:

i. Construction applications

This classification is also valid for the following product parameters:

Overall product thickness	No variation allowed
Product density	No variation allowed
Product composition	No variation allowed
Colour	No variation allowed
Joints	Results valid for material with or without vertical & horizontal joints of ≤ 15mm

8. LIMITATIONS

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

This report and all records of the test to which it relates may be not be retained by TBWIC further than 5 years from the date of testing.

This test report is respectfully submitted by: Thomas Bell-Wright International Consultants

Prepared by:

Sam Sancho Thomas
Fire Testing Engineer

P.O.Box: 26385
DUBAI - U.A.E.
Thomas Bell-Wright Int'l Consultants (Dubai Br.)

Reviewed and Approved by:

Suketa Tyagi
Manager - Reaction to Fire

9. ANNEXURE 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	ΔT ≤ 30 °C; and Δm ≤ 50 %; and tf = 0 (i.e. no sustained flaming)	-
	EN ISO 1716	PCS ≤ 2,0 MJ/kg [a] and PCS ≤ 2,0 MJ/kg [b c] and PCS ≤ 1,4 MJ/m^2 [d] and PCS ≤ 2,0 MJ/kg [e]	-
A2	EN ISO 1182 [a] or	ΔT ≤ 50 °C; and Δm ≤ 50 %; and tf ≤ 20 s	-
	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 [d] and PCS ≤ 3,0 MJ/kg [e]	-
	EN 13823	FIGRA ≤ 120 W/s and LFS < edge of specimen and THR_{600s} ≤ 7,5 MJ	Smoke production [f] and Flaming droplets/particles [g]
B	EN 13823 and	FIGRA ≤ 120 W/s and LFS < edge of specimen and THR_{600s} ≤ 7,5 MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i]: Exposure = 30 s	Fs ≤ 150 mm within 60 s	
C	EN 13823 and	FIGRA ≤ 250 W/s and LFS < edge of specimen and THR_{600s} ≤ 15 MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i]: Exposure = 30 s	Fs ≤ 150 mm within 60 s	
D	EN 13823 and	FIGRA ≤ 750 W/s	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i]: Exposure = 30 s	Fs ≤ 150 mm within 60 s	
E	EN ISO 11925-2 [i]: Exposure = 15 s	Fs ≤ 150 mm within 20 s	Flaming droplets/particles [h]
F	EN ISO 11925-2 [i]: Exposure = 15 s	Fs > 150 mm within 20 s	

[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 ≤ 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.*

---- End of Classification Report ----