

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

Test Sponsor:

International Development Company Metal Industries – Sole Proprietorship L.L.C.
(IDCMI)

Al Mafrq

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Test Material / Assembly:

4mm thick Aluclad Aluminium Composite Panel with PVDF Coating



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DUBAI

ABU DHABI

DOHA



Accreditation

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 International Trade Council

www.thetradecouncil.com

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 wholly or partly under the accreditations of **ISO 17025 UKAS**.



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1. INTRODUCTION

This classification report defines the classification assigned to 4mm thick Aluclad Aluminium Composite Panel with PVDF Coating 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: International Development Company Metal Industries – Sole Proprietorship L.L.C. (IDCMI)
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3. TESTING LABORATORY

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 Jebel Ali Industrial Area 1
 Dubai, UAE
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 Website: www.bell-wright.com

4. DETAILS OF CLASSIFIED PRODUCT

4.1. Product Description

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 Aluclad Aluminium Composite Panel with PVDF Coating	
Manufacturer		International Development Company Metal Industries LLC	
Thickness		4mm (Measured by TBWIC)	
Area Density		8.37 kg/m ² (Measured by TBWIC)	
Product Details	Layer 1	Product Description	Topcoat
		Material	Polyvinylidene flouride (PVDF)* (stated)
		Manufacturer	Good Luck Decorative Materials Manufacturer LLC* (stated)
		Colour	Silver* (stated)
		Thickness	0.02mm* (stated)
		Area Density	0.055 kg/m ² * (stated)
	Layer 2	Product Description	Primer
		Material	Polyester* (stated)



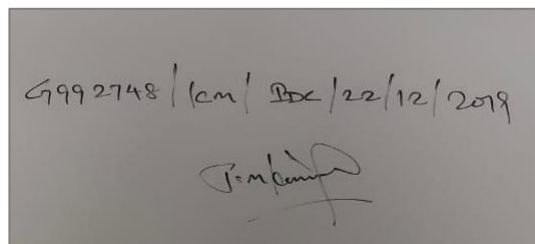
		Manufacturer	Good Luck Decorative Materials Manufacturer LLC* (stated)
		Colour	White* (stated)
		Thickness	0.006mm* (stated)
		Area Density	0.007 kg/m ² * (stated)
	Layer 3	Product Description	Top Skin
		Material	Aluminium* (stated)
		Manufacturer	Good Luck Decorative Materials Manufacturer LLC* (stated)
		Alloy Grade	3003-H16* (stated)
		Thickness	0.5mm* (stated)
		Density	2710 kg/m ³ * (stated)
		Area Density	1.355 kg/m ² * (calculated from stated value)
	Layer 4	Product Description	Adhesive
		Material	Maleic Anhydride Modified Polyethylene* (stated)
		Manufacturer	Emirates Panel Plastic Industries* (stated)
		Colour Code	Ivory* (stated)
		Thickness	0.08mm* (stated)
		Area Density	0.084 kg/m ² * (stated)
	Layer 5	Product Description	Core
		Material	Non-combustible Mineral-filled Core* (stated)
		Manufacturer	Alubotec* (stated)
		Thickness	3.1mm (Measured by TBWIC)
		Area Density	5.61 kg/m ² (Measured by TBWIC)
	Layer 6	Product Description	Adhesive
		Material	Maleic Anhydride Modified Polyethylene* (stated)
		Manufacturer	Emirates Panel Plastic Industries* (stated)
		Colour Code	Ivory* (stated)
Thickness		0.08mm* (stated)	
Area Density		0.084 kg/m ² * (stated)	
Layer 7	Product Description	Bottom Skin	
	Material	Aluminium* (stated)	
	Manufacturer	Jiangsu Metcoplus* (stated)	
	Alloy Grade	3003-H16* (stated)	
	Thickness	0.5mm* (stated)	
	Density	2710 kg/m ³ * (stated)	



		Area Density	1.355 kg/m ² * (calculated from stated value)
	Layer 8	Product Description	Service coat
		Material	Polyester* (stated)
		Manufacturer	Jiangsu Metcoplus* (stated)
		Colour Code	Grey* (stated)
		Thickness	0.006mm* (stated)
		Area Density	0.007 kg/m ² * (stated)
Substrate Details		Material	Calcium Silicate Board (Verified by TBWIC)
		Density	885 kg/m ³ (Measured by TBWIC)
		Thickness	12 mm (Measured by TBWIC)
		Classification	A2-s1,d0 as per BS EN 13501-1:2018 (Verified by TBWIC)
Type of joint	<p>1. Horizontal Joints: 10mm joint at 500 mm from the specimen bottom to the center of the joint, measured when the wings were mounted.</p> <p>2. Vertical Joints: 10mm joint at 200 mm from the corner line to the center of the joint, measured when the wings were mounted.</p>		

5. SPECIMEN VERIFICATION

TBWIC testing laboratory has not been involved in the selection or design of the specimen. However, the panels were selected, marked, and signed by Mr. Kamil Mohamed from Intertek Certification (Certification Body) on 22-Dec-19 as shown below. The results apply to the sample 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

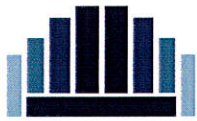
6.1. Reports

Name of Laboratory	Test Sponsor	Test Report No.	Test Method/Field of Application Rules
Thomas Bell-Wright International Consultants (TBWIC)	International Development Company Metal Industries LLC (IDCMI)	TF180-1	BS EN ISO-1716:2018
		TF180-3	BS EN 13823:2010+A1:2014

6.2. Results

Test Method	TEST PARAMETERS		No. of tests	TEST RESULTS	
				Continuous Parameter-Mean (m)	Compliance Parameters
BS EN ISO 1716:2018	PCS ≤ 3.0 MJ/kg (for Substantial component)	Aluminium Sheet	0	0	Compliant
		Mineral Core	3	0.5	Compliant
	PCS ≤ 4.0 MJ/m ² (for External Non-Substantial component)	Topcoat	3	1.1	Compliant
		Primer	3	0.1	Compliant
		(Topcoat + Primer)		1.2	Compliant
	Service coat	3	0.1	Compliant	
	PCS ≤ 4.0 MJ/m ² (for Internal Non-Substantial component)	Adhesive	3	3.7	Compliant
PCS ≤ 3.0 MJ/kg (For product as a whole)		3	1.4	Compliant	

Test Method	TEST PARAMETERS		No. of tests	TEST RESULTS	
				Continuous Parameter-Mean (m)	Compliance Parameters
BS EN 13823:2010 +A1:2014	FIGRA _{0.2} MJ ≤ 120 W/S		3	0	Compliant
	THR _{600s} ≤ 7.5 MJ		3	0.2	Compliant
	Lateral Flame Spread < Edge of Specimen		3	< Edge of Specimen	Compliant
	CRITERIA for subclass "s1"				
	SMOGRA ≤ 30m ² /s ²		3	0	Compliant
	TSP _{600s} ≤ 50m ²		3	21.4	Compliant
	CRITERIA for subclass "d0"				
	Flaming droplets/particles within 600s		3	Nil	Compliant



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 Aluclad Aluminium Composite Panel with PVDF Coating, 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

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/Shape	No variation allowed
Colour	No variation allowed
Joints	Results valid for product with no joints Results valid for product with vertical open joints upto 10mm Results valid for product with horizontal open joints upto 10mm
Substrate	Results valid for A1 and A2-s1, d0 substrates only.

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:

Approved by:


Sujana Haridas
Fire Testing Engineer


Suketa Tyagi
Reaction to Fire - Manager





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	$\Delta T \leq 30 \text{ }^\circ\text{C}$; and $\Delta m \leq 50 \%$; and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2,0 \text{ MJ/kg}$ ^a and $PCS \leq 2,0 \text{ MJ/kg}$ ^{b c} and $PCS \leq 1,4 \text{ MJ/m}^2$ ^d and $PCS \leq 2,0 \text{ MJ/kg}$ ^e	-
A2	EN ISO 1182 ^a or	$\Delta T \leq 50 \text{ }^\circ\text{C}$; and $\Delta m \leq 50 \%$; and $t_f \leq 20 \text{ s}$	-
	EN ISO 1716 and	$PCS \leq 3,0 \text{ MJ/kg}$ ^a and $PCS \leq 4,0 \text{ MJ/m}^2$ ^b and $PCS \leq 4,0 \text{ MJ/m}^2$ ^d and $PCS \leq 3,0 \text{ MJ/kg}$ ^e	-
	EN 13823	$FIGRA \leq 120 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7,5 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
B	EN 13823 and	$FIGRA \leq 120 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7,5 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ : Exposure = 30 s	$F_s \leq 150 \text{ mm}$ within 60 s	
C	EN 13823 and	$FIGRA \leq 250 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 15 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ : Exposure = 30 s	$F_s \leq 150 \text{ mm}$ within 60 s	
D	EN 13823 and	$FIGRA \leq 750 \text{ W/s}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ : Exposure = 30 s	$F_s \leq 150 \text{ mm}$ within 60 s	
E	EN ISO 11925-2 ⁱ : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	Flaming droplets/particles ^h
F	EN ISO 11925-2 ⁱ : Exposure = 15 s	$F_s \geq 150 \text{ mm}$ within 20 s	Flaming droplets/particles ^h

^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 $PCS \leq 2,0 \text{ MJ/m}^2$, provided that the product satisfies the following criteria of EN 13823: $FIGRA \leq 20 \text{ W/s}$, and $LFS < \text{edge of specimen}$, and $THR_{600s} \leq 4,0 \text{ MJ}$, and s_1 , and d_0 .



^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 $\leq 30\text{m}^2/\text{s}^2$ 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** = 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).

^l Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

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