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

Test Sponsor:

Euroclad Group Ltd
Wentloong Corporate Park
Cardiff, CF3 2ER, United Kingdom
T: +44 2922 010101
Website: www.eurocladgroup.com

Test Material / Assembly:

Eurobond Panel Sandwich Panel

THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

Issue Date: 15-Jun-23
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1. INTRODUCTION

This classification report defines the classification assigned to Eurobond Panel Sandwich 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: Euroclad Group Ltd
Address: Wentloong Corporate Park
Cardiff, CF3 2ER, United Kingdom
T: +44 2922 010101
Website: www.eurocladgroup.com

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.

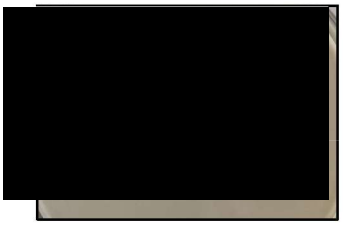
Product Description		Eurobond Panel Sandwich Panel *	
Manufacturer		Euroclad Group, Wentloog Corporate Park, Cardiff CF3 2ER*	
Trade Name		Eurobond Panel – Europanel * *The sponsor also refers to the same product as Rockspan / Rainspan / Firemaster**	
Thickness		75mm & 100mm (measured by TBWIC)	
Area Weight		100mm panels - 21.10 kg/m^2 (measured by TBWIC) 75mm panels - 17.62 kg/m^2 (measured by TBWIC)	
Fire Exposed Side		Black coated side*	
Product Details	**Clear Coat**	Reference	Colorcoat Prisma / S6015*
		Material	PU*
		Manufacturer	TATA*
		Dry Film Thickness	15µm* (stated)
		Area Weight	0.018 kg/m^2* (stated)
		Density	1180 kg/m^3* (stated)
	Top Coat	Reference	Prisma Black Coat*
		Material	PU*

		Manufacturer	TATA*
		Colour Tested	Black (observed)
		Dry Film Thickness	25µm* (stated)
		Area Weight	0.029 kg/m^2* (stated)
		Dry Density	1170 kg/m^3* (stated)
	Primer (PU)	Reference	BeckryPrime 266*
		Material	PU*
		Manufacturer	TATA*
		Dry Film Thickness	25µm* (stated)
		Area Weight	0.040 kg/m^2* (stated)
		Dry Density	1600 kg/m^3* (stated)
	Steel top Skin	Material	Zinc-alloy coated steel*
		Manufacturer	TATA*
		Alloy Grade	S220* (stated)
		Thickness	0.6mm* (stated)
		Area Weight	4.698 kg/m^2* (stated)
		Density	7830 kg/m^3* (stated)
	Top Skin (Rear Coat)	Reference	S666 Grey*
		Manufacturer	TATA*
		Film Thickness	10µm* (stated)
		Area Weight	0.013 kg/m^2* (stated)
		Dry Density	1330 kg/m^3* (stated)
	Adhesive	Material	Sikaforce 7748*
		Manufacturer	Sika/Covestro*
		Application Rate	300 g/m^2* (stated)
		Thickness	0.1mm* (stated)
		Area Weight	300 g/m^2* (stated)
	Core (MW Insulation)	Material	Spanrock XL*
		Manufacturer	Rockwool*
		Thickness	75mm* (stated)
		Area Weight	8.625 kg/m^2* (stated)
		Density	115 kg/m^3* (stated)
	Adhesive	Material	Sikaforce 7748*
		Manufacturer	Sika/Covestro*
		Application Rate	300 g/m^2* (stated)
		Thickness	0.1mm* (stated)

		Area Weight	300 g/m^2* (stated)
	Bottom Skin (Rear Coat)	Material	S666 Grey*
		Manufacturer	TATA*
		Thickness	0.010mm* (stated)
		Area Weight	0.013 kg/m^2* (stated)
		Density	1330 kg/m^3* (stated)
	Steel Bottom Skin	Material	Galvalloy*
		Manufacturer	TATA*
		Alloy Grade	S220* (stated)
		Thickness	0.45mm* (stated)
		Area Weight	3.52 kg/m^2* (stated)
		Density	7830 kg/m^3* (stated)
	Primer (Back)	Material	CF77 BeckyPrim 243TU*
		Manufacturer	TATA*
		Dry Film Thickness	7 µm* (stated)
		Area Weight	0.010 kg/m^2* (stated)
		Dry Density	1420 kg/m^3* (stated)
	Back Coat (Fire side)	Reference	PE25 White Liner*
		Manufacturer	TATA*
		Colour	White (observed)
		Dry Film Thickness	18µm* (stated)
		Area Weight	0.025 kg/m^2* (stated)
		Dry Density	1379 kg/m^3* (stated)

5. SPECIMEN PREPARATION PROCEDURE

TBWIC Testing Laboratory has not been involved in the selection or design of the specimen. However, the samples were selected, marked, and signed by a representative from Setsco Services Pte Ltd. on 11-Jan-23 (COC No. FSP-2021-1163) as shown below. 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)	Euroclad Group Ltd	XB132-1	BS EN ISO-1716:2018
		WG100-3	BS EN ISO-1716:2018
		XB132-4	BS EN 13823:2020
		XE071-1	BS EN 13823:2020

***Note 1**: As per the client's request only adhesive and core were tested as per EN ISO 1716 ref. XB132-1 and the rest of details were cited from WG100-3.*

6.2. Results

Test Method	Test Parameter			No. of tests	Results		
	Component type	Limits	Layer		Continuous parameter- mean (m)		Compliance parameters
BS EN ISO 1716:2018	External Non-substantial	PCS ≤ 4.0 MJ/m^2	Clear Coat (PVDF)	3	0.5	1.8	Compliant
			Top Coat (PVDF)		0.8		
			Primer		0.6		
			Primer (Back)		0.2	0.6	Compliant
			Back coat		0.4		
	Internal Non-substantial	PCS ≤ 4.0 MJ/m^2	Metal Skin (Rear Coat)	3	0.2	3.4	Compliant
			Adhesive	3	3.2		
	Substantial	PCS ≤ 3.0 MJ/kg	Steel Top Skin	0	0.0		Compliant
			Steel Bottom Skin	0	0.0		
			Stone Wool Insulation	3	0.9		
	Product as a Whole	PCS ≤ 3.0 MJ/kg	-	-	1.0		Compliant

100mm thick panels

Test Method	Parameter	No. of tests	Results	
			Continuous parameter- mean (m)	Compliance parameters

BS EN 13823:2020	$FIGRA_{0.2MJ} \leq 120$ W/s	3	24	Compliant
	$THR_{600s} \leq 7.5$ MJ	3	0.7	Compliant
	Lateral Flame Spread < Edge of specimen	3	< Edge of Specimen	Compliant
	Additional Qualification for Smoke Production (s1)			
	SMOGRA ≤ 30 m^2/s^2 Note1	3	0	Compliant
	TSP600s ≤ 50 m^2 Note1	3	27	Compliant
	Additional Qualification for Flaming Droplets/Particles (d0)			
	Flaming droplets/particles	3	Nil	Compliant

75mm thick panels

Test Method	Parameter	No. of tests	Results	
			Continuous parameter- mean (m)	Compliance parameters
BS EN 13823:2020	$FIGRA_{0.2MJ} \leq 120$ W/s	3	85	Compliant
	$THR_{600s} \leq 7.5$ MJ	3	1.0	Compliant
	Lateral Flame Spread < Edge of specimen	3	< Edge of Specimen	Compliant
	Additional Qualification for Smoke Production (s1)			
	SMOGRA ≤ 30 m^2/s^2 Note2	3	0	Compliant
	TSP600s ≤ 50 m^2 Note2	3	25	Compliant
	Additional Qualification for Flaming Droplets/Particles (d0)			
	Flaming droplets/particles	3	Nil	Compliant

***Note 2**: 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, Eurobond Panel Sandwich 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

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 thickness of panel	Valid for all thicknesses ≥ 75mm *Note3*
Thickness of metal skin (excluding organic coating)	Top skin – 0.6-1.2mm *Note 3* Bottom skin – 0.45-0.9mm *Note 3*
Grade of metal	Valid for all grades of tested metal type *Note 3*
Thickness of coatings	No variation allowed *Note 3*
Density of Mineral Wool core	Valid for ± 15% of tested density *Note 3*
Overall Density (except core)	No variation allowed
Adhesive	Valid for all adhesives with a $Q_{PCS} \leq 3.2$ MJ/m^2 *Note 3*
Product Composition	No variation allowed
Product Construction	No variation allowed
Joints	Valid for panels with or without vertical joints and horizontal joints
Type of joints	Only valid for tested joint type *Note 3*

***Note 3**: In accordance with Section C.1.3 of BS EN 14509:2013.*

8. LIMITATIONS

This document does not represent type approval or certification of the product. Similarly, the BS EN 13823 & BS EN ISO 1716 fire tests and related work which are a subject of this classification report have been conducted under Thomas Bell-Wright International Consultant's ISO 17025 UKAS accreditation scheme and quality management system. However, pursuant to UKAS Technical Bulletin *BS EN 13501 & BR 135 Classification Documents (Dated 02-Feb-2022)*, classification documents are completed on an unaccredited basis because they are not themselves test procedures. As such, this document is prepared on an unaccredited basis.

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:

[redacted]

Malak Megly
Fire Testing Engineer

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Reviewed and Authorized by:

[redacted]

Suketa Tyagi
Manager – Reaction to Fire

Report Revision Tracking		
Revision No.	**Date Issued**	**Notes & Amendments**
Rev. 00	15-Jun-23	This is the first issue of the report. No revisions are included.

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 ----