

TEST REPORT REACTION TO FIRE TEST

Test Sponsor:

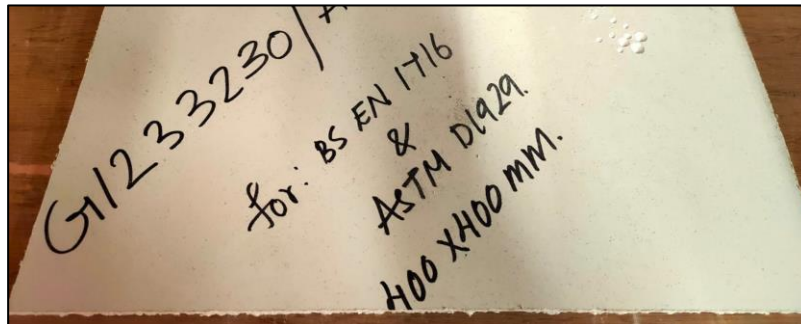
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Al Mafrag
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Test Material:

3mm thick 'Clad core' Core of Aluclad Aluminium Composite Panel

Test Standard

BS EN ISO-1716:2018 Reaction to Fire Tests for Products - Determination of the Gross Heat of Combustion (Calorific Value)



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 10-Jan-22
Issue Date: 19-Jan-22
Test Reference No: VL079-2

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DUBAI

ABU DHABI

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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**.



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1. INTRODUCTION

Determination of the calorific potential of 3mm thick 'Clad core' Core of Aluclad Aluminium Composite Panel during combustion in accordance with BS EN ISO 1716:2018; Reaction to fire tests for products - Determination of the Gross Heat of Combustion (Calorific Value).

2. SPONSOR

Name: International Development Company Metal Industries – Sole Proprietorship L.L.C. (IDCMI)
Address: Al Mafrq
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Abu Dhabi, United Arab Emirates
T: +971 2 505 6300 | F: +971 2 582 3088
Website: www.idcuae.com

3. TESTING LABORATORY

Name: Thomas Bell-Wright International Consultants (TBWIC)
Address: Corner of 46th and 47th streets, Jebel Ali Industrial Area 1
P.O. Box 26385, Dubai, U.A.E.
T: +971 (0) 4 821 5777
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4. DATE OF TEST

Sample received: 04-Jan-22
Test date: 10-Jan-22

The test was witnessed by:

Name	Company	Contact Number
Ms. Sujana Haridas	Intertek Middle East	+971 54 583 2235



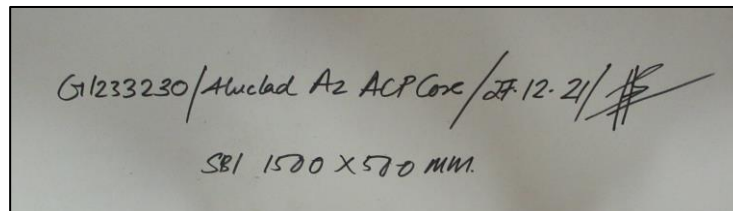
5. SPECIMEN DESCRIPTION

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	3mm thick core of 'Aluclad' Aluminium Composite Panel*
Product Reference	Clad core*
Manufacturer	International Development Company Metal Industries LLC* (stated)
Colour	White (observed)
Thickness	3.2mm (measured by TBWIC)
Area Weight	5.92 kg/m ² (measured by TBWIC)
Density	1850 kg/m ³ (measured by TBWIC)
Specimen placement	A minimum of three test specimens were tested using the crucible method in accordance with Clause 7.9 of BS EN ISO 1716:2018 test standard.

6. SPECIMEN VERIFICATION

TBWIC Testing Laboratory has not been involved in the selection or design of the specimen. However, the samples were selected, marked, and signed by Ms. Sujana Haridas from Intertek Certification (Certification Body) on 27-Dec-21 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.

7. SPECIMEN PREPARATION PROCEDURE

In accordance with section 7.2 of BS EN ISO 1716:2018, a minimum mass of 50g was taken from the homogeneous product.

Sample was ground and reduced to small granules and treated as powder as per section 7.4 of BS EN ISO 1716:2018.

8. METHOD OF TEST

8.1. Test Procedure

The test was carried out using the crucible method in accordance with Clause 7.9 of BS EN ISO 1716:2018 test standard - *Reaction to fire tests for products - Determination of the Gross Heat of Combustion (Calorific Value)*.



The combustion was facilitated using a combustion aid, benzoic acid; an additional combustible substance of known and high calorific value. The water equivalent (E) of Bomb 1 was 0.005658 MJ/K, as per the latest calibration.

8.2. Conditioning

After delivery on 04-Jan-22, the specimen was conditioned at 21 to 25 °C and 45 to 55% relative humidity in accordance with EN 13238:2010, *Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates*.

Note: There were deviations observed in the temperature and relative humidity in 4 separate probes of thermo-hygrometer in our conditioning room. However, the average values were within standard limits.

9. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with BS EN ISO 1716:2018, *Reaction to fire tests for products - Determination of the Gross Heat of Combustion (Calorific Value)*.

Deviations: There were no deviations from the test standard.

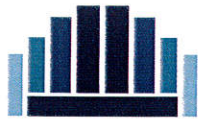
9.1. Tabulated data

The test results are:

		Core
	No. of Tests	3
Trial 1	Specimen weight (g)	0.2083
	Gross calorific value (MJ/kg)	0.3
Trial 2	Specimen weight (g)	0.2043
	Gross calorific value (MJ/kg)	0.1
Trial 3	Specimen weight (g)	0.2059
	Gross calorific value (MJ/kg)	0.3
Average Gross Calorific Value (MJ/kg)		0.2

9.2. Observations

In accordance with Section 8.3.11 of BS EN ISO 1716:2018, specimens were observed to be completely combusted.



10. VALIDATION OF THE TEST RESULTS

To be validated, the test results shall comply with the criteria specified in Clause 11 of. The following criteria apply.

Gross heat of combustion	Acceptance criteria	Range of validity
Q _{PCS} (MJ/kg)	≤0.2 MJ/kg	From any negative value to 3.2 MJ/kg
	Within 5% of the average of the 3 results	From 3.2 MJ/kg to 20.0 MJ/kg
	Within 10% of the average of the 3 results	Greater than 20.0 MJ/kg
Q _{PCS} (MJ/m ²) ^a	≤0.1 MJ/m ²	From any negative value to 4.1 MJ/m ²
	Within 5% of the average of the 3 results	From 4.1 MJ/m ² to 20 MJ/m ²
	Within 10% of the average of the 3 results	Greater than 20 MJ/m ²

^a For non-substantial components only.

10.1. Validity

The differences between the maximum and minimum Q_{PCS} values were within the range of validity specified in Clause 11 of BS EN ISO 1716:2018.

11. LIMITATION

“The test results relate to the behavior 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.”- Clause 10q of BS EN ISO 1716:2018 test standard.

This report and all records of the test to which it relates may 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



Reviewed & Approved by:

Suketa Tyagi
Manager - Reaction to Fire

---- End of Test Report ----