

TEST REPORT

REACTION TO FIRE TEST

Test Sponsor:

International Development Company Metal Industries – Sole Proprietorship L.L.C.

Al Mafraq

P.O. Box 2621

Abu Dhabi, United Arab Emirates

T: +971 2 505 6300 | F: +971 2 582 3088

Website: www.idcuae.com

Test Material / Assembly:

4mm thick Aluclad Aluminium Composite Panel with PVDF Coating

Test Standard

BS EN 13823:2010 +A1:2014 Reaction to Fire Tests for Building Products — Building Products excluding Floorings exposed to the Thermal Attack by a Single Burning Item



**THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS**

Test Date: 10-Feb-20
Issue Date: 26-Feb-20
Test Reference No: TF180-3

PO BOX 26385, DUBAI UAE

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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

Determination of Reaction to fire performance of building products excluding floorings when exposed to thermal attack by a Single Burning Item (SBI) (a sand-box burner supplied with propane) in accordance with BS EN 13823:2010 +A1:2014.

2. SPONSOR

Name: International Development Company Metal Industries – Sole Proprietorship L.L.C.
Address: Al Mafrag
P.O. Box 2621
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
Dubai, United Arab Emirates
T: +971 (0)4 821 5777
Website: www.bell-wright.com

4. DATE OF TEST

Sample received: 13-Jan-20
Test date: 10-Feb-20

The test had been witnessed by:

Name	Company	Contact Number
Mr. Kamil Mohamed	Intertek Middle East	+971 50 951 4681



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		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	

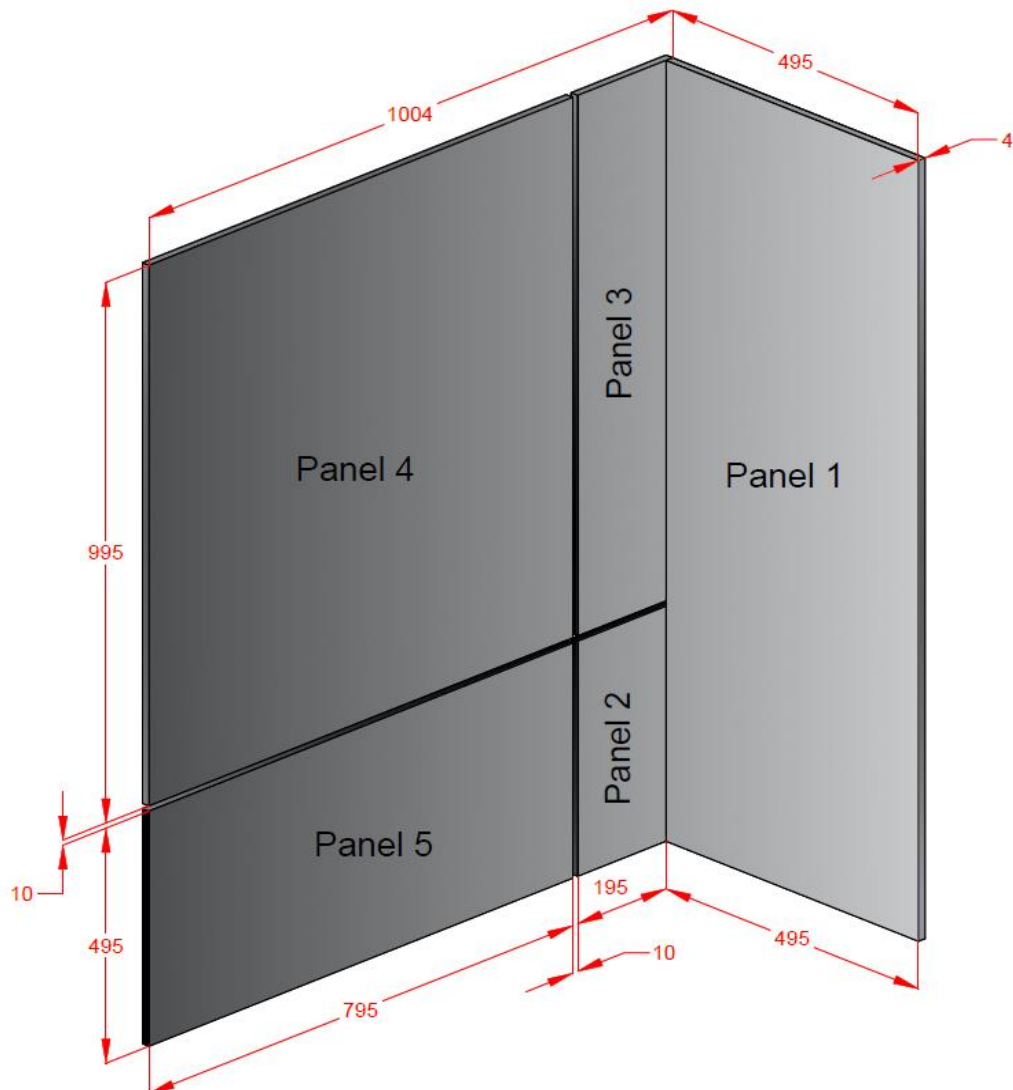


		Material	Non-combustible Mineral-filled Core* (stated)
		Manufacturer	Alubotec* (stated)
		Thickness	3.1mm (Measured by TBWIC)
		Area Density	5.61 kg/m ² (Measured by TBWIC)
	Layer 6	Product Description	Adhesive
		Material	Maleic Anhydride Modified Polyethylene* (stated)
		Manufacturer	Emirates Panel 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)
	Layer 8	Area Density	1.355 kg/m ² * (calculated from stated value)
		Product Description	Service coat
		Material	Polyester* (stated)
		Manufacturer	Jiangsu Metcoplus* (stated)
Colour Code		Grey* (stated)	
Thickness		0.006mm* (stated)	
Substrate Details	Area Density	0.007 kg/m ² * (stated)	
	Material	Calcium Silicate Board (Verified by TBWIC)	
	Density	885 kg/m ³ (Measured by TBWIC)	
	Thickness	12 mm (Measured by TBWIC)	
Type of joint	Classification	A2-s1,d0 as per BS EN 13501-1:2018 (Verified by TBWIC)	
	<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. Refer to Drawing No.1 & 2 for more details.</p>		
Specimen Dimensions	<p>Small Wing: Panel 1 - 495 x 1500 mm (w x h) (Measured)</p> <p>Long Wing: Panel 2 – 199 x 495 mm (w x h) (Measured)</p> <p>Panel 3 – 199 x 995 mm (w x h) (Measured)</p> <p>Panel 4 – 795 x 495 mm (w x h) (Measured)</p> <p>Panel 5 – 795 x 995 mm (w x h) (Measured)</p>		

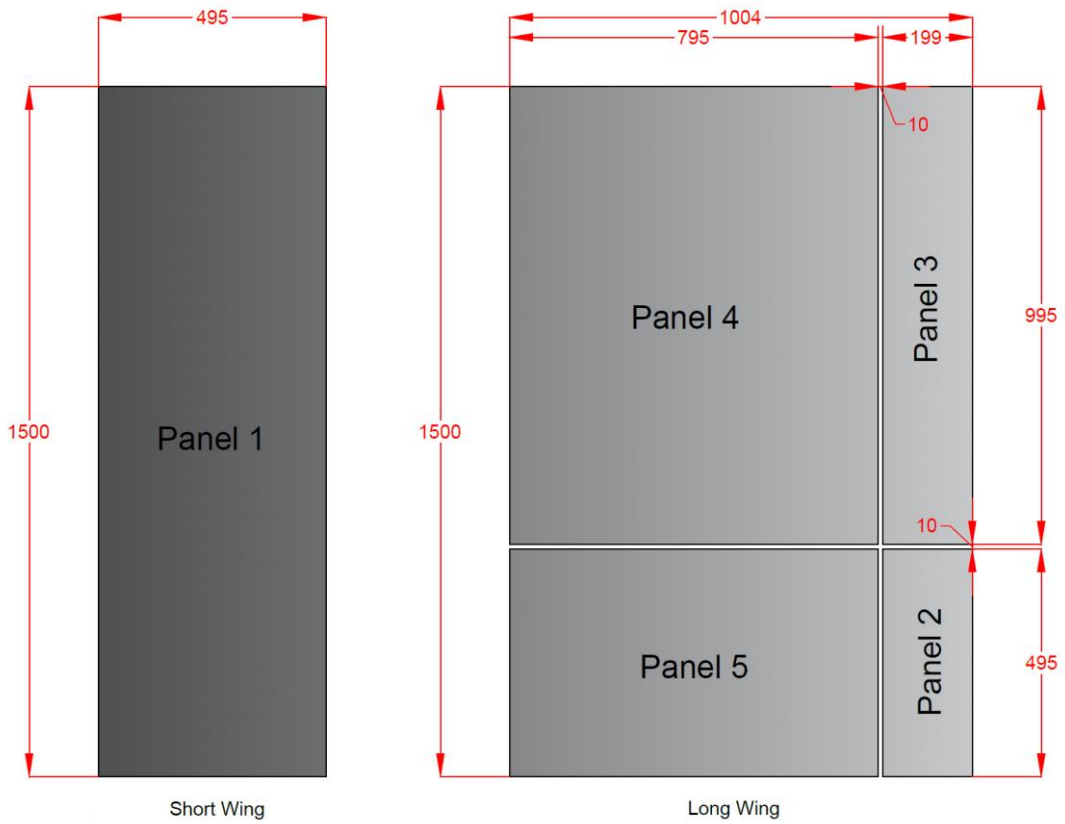


	Refer to Drawing No.1 & 2 for more information/details.
Specimen Placement/ Mounting	<p>The specimen was prepared according to section 5.2.2 of BS EN 13823:2010+A1:2014. It was mounted mechanically using 3.5 x 25mm drywall screws and washers on a calcium silicate board substrate.</p> <p>The panels were tested with an 80mm air gap between the rear side of the panel and the face of the substrate. The specimen was placed such that the bottom edges of the long and short wings rested against the respective U-profiles on the trolley floor and the side edge of the short wing specimen met the extended long wing specimen at the primary burner side.</p> <p>Refer to Drawing No. 1 & 2 for more details.</p>

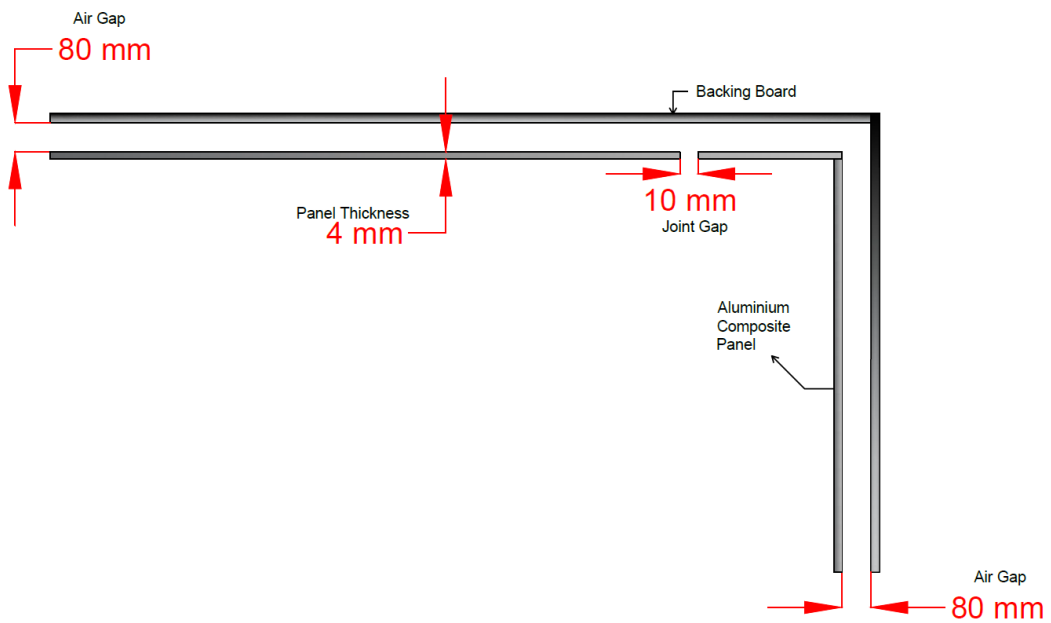
6. SPECIMEN DRAWING



Drawing 1: Front view of the long and short wing of test specimen.
All dimensions are in millimeters (mm)



Drawing 2: Dimensions of the long and short wing of the test specimen.
All dimensions are in millimeters (mm)

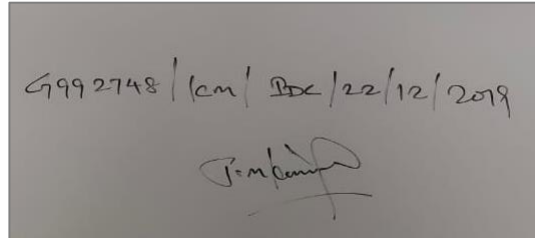


Drawing 3: Top view of the mounted specimen with airgap.
All dimensions are in millimeters (mm)



7. 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.

8. METHOD OF TEST

8.1. Test Procedure

The specimen consisted of large and a small wing which were mounted on a trolley using mechanical clamps. The trolley with a sandbox burner at the bottom of the vertical corner was positioned in a frame beneath an exhaust system.

A gas burner (primary burner) with a heat release rate of 30 kW was in the corner of the small and long wing during testing. The test duration was 21 minutes. The combustion gases were collected through a hood where heat release rate and smoke production were measured instrumentally and physical characteristics were assessed by observation.

8.2. Conditioning

After delivery on 13-Jan-20, the specimens were conditioned to constant weight at 21 to 25°C and 45 to 55% relative humidity.

9. OBSERVATION

Test Data and Observation

General Information	Specimen 1	Specimen 2	Specimen 3
Observations			
Occurrence of sustained flames reaching the far edge of long wing specimen at any height between 500-1000mm at any time during the test - LFS	Nil	Nil	Nil
Flaming droplets/particles within the first 600s	Nil	Nil	Nil
Burning droplets/particles ≥10 s within the first 600s	Nil	Nil	Nil
End of test, s	1560	1560	1560



10. SUMMARY OF RESULTS

The test specimen has been evaluated in accordance with BS EN 13823:2010 +A1:2014 Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item.

The complete test results for the panels are:

TEST PARAMETERS	TEST RESULTS			Average
	Specimen 1	Specimen 2	Specimen 3	
FIGRA, W/s (THR (t) Threshold of 0.2 MJ)	0	0	0	0
FIGRA, W/s (THR (t) Threshold of 0.4 MJ)	0	0	0	0
THR 600s, MJ	0.1	0.2	0.3	0.2
SMOGRA, m ² /s ²	0	0	0	0
TSP 600s, m ²	19.6	23.7	20.8	21.4
Occurrence of sustained flames reaching the far edge of long wing specimen at any height between 500-1000mm at any time during the test - LFS	Nil	Nil	Nil	Nil
Flaming droplets/particles ≥ 10s within the first 600s	Nil	Nil	Nil	Nil
Burning droplets/particles ≤10 s within the first 600s	Nil	Nil	Nil	Nil

“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 sole criterion for assessing the potential fire hazard of the product in use”- Clause 10q, BS EN 13823:2010+A1:2014.



11. LIMITATION

Results are valid for the tested configuration only.

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 Compliance Engineer

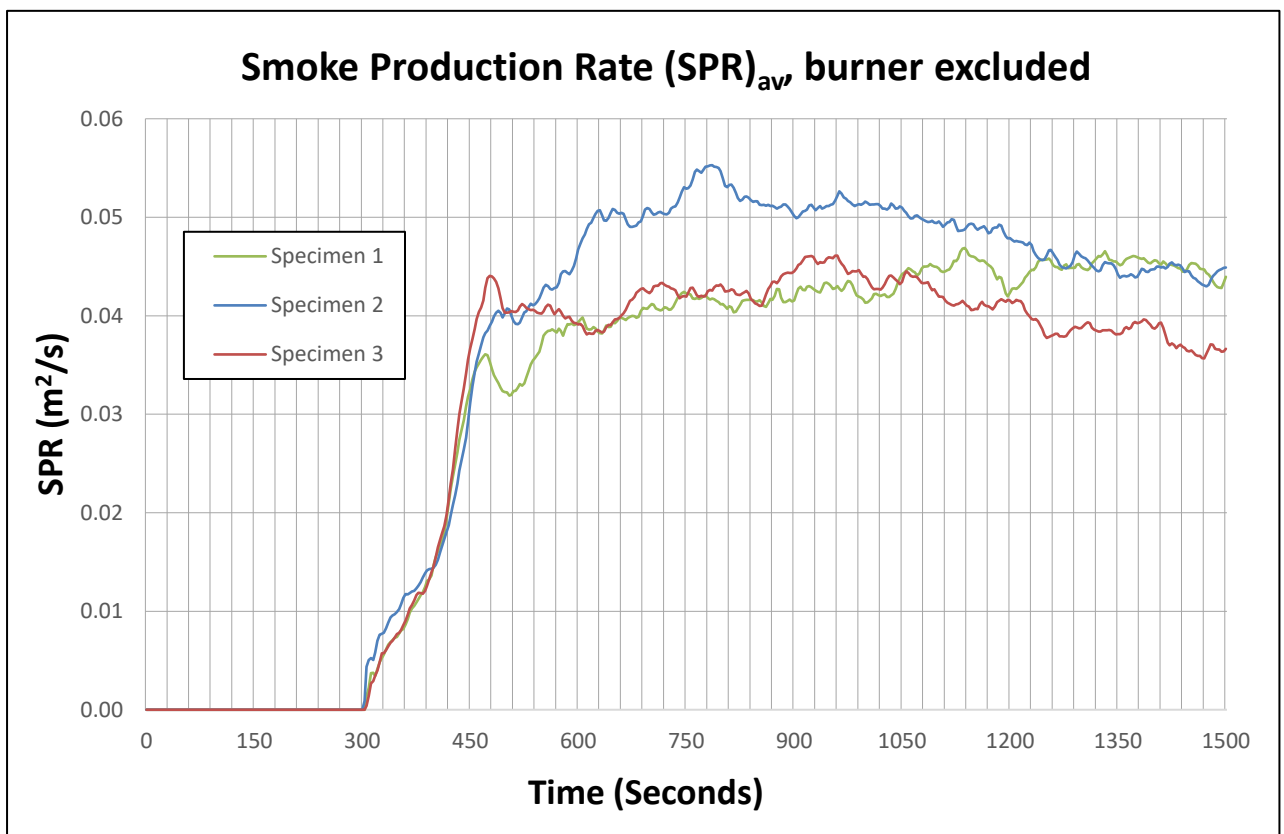
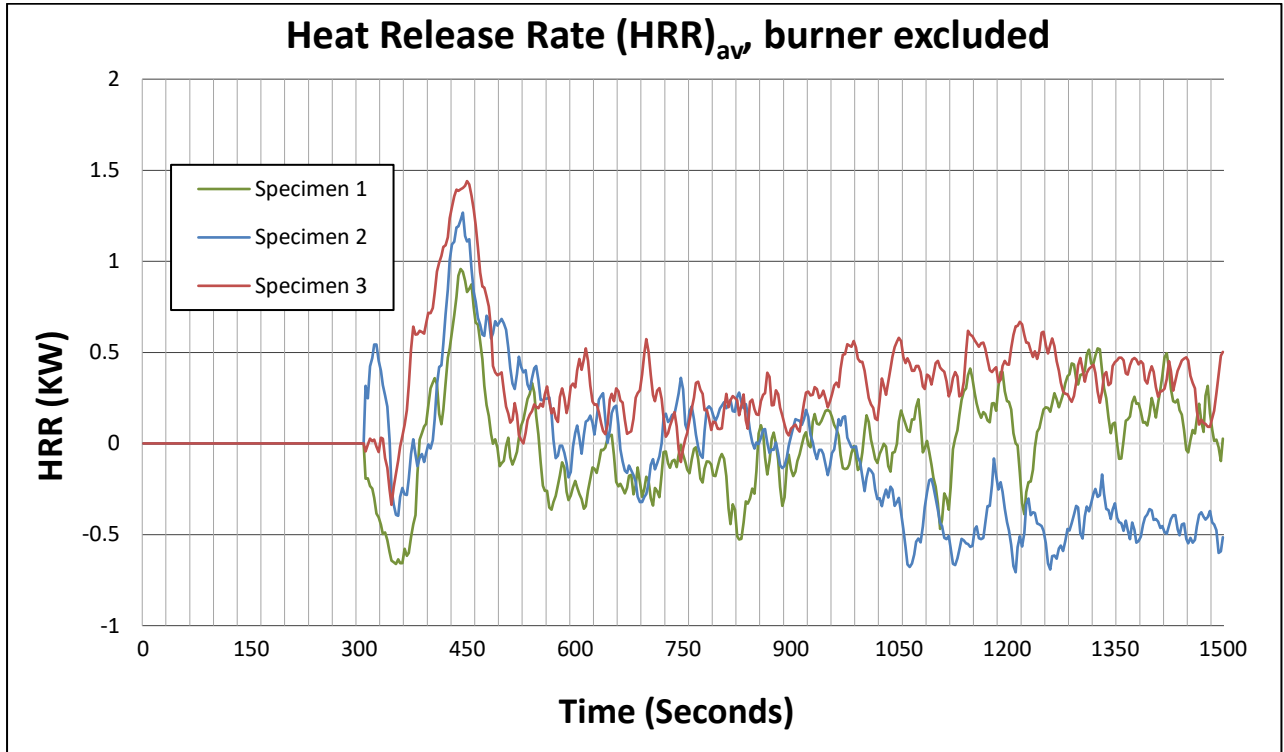
Reviewed & Approved by:

Suketa Tyagi
Reaction to Fire - Manager



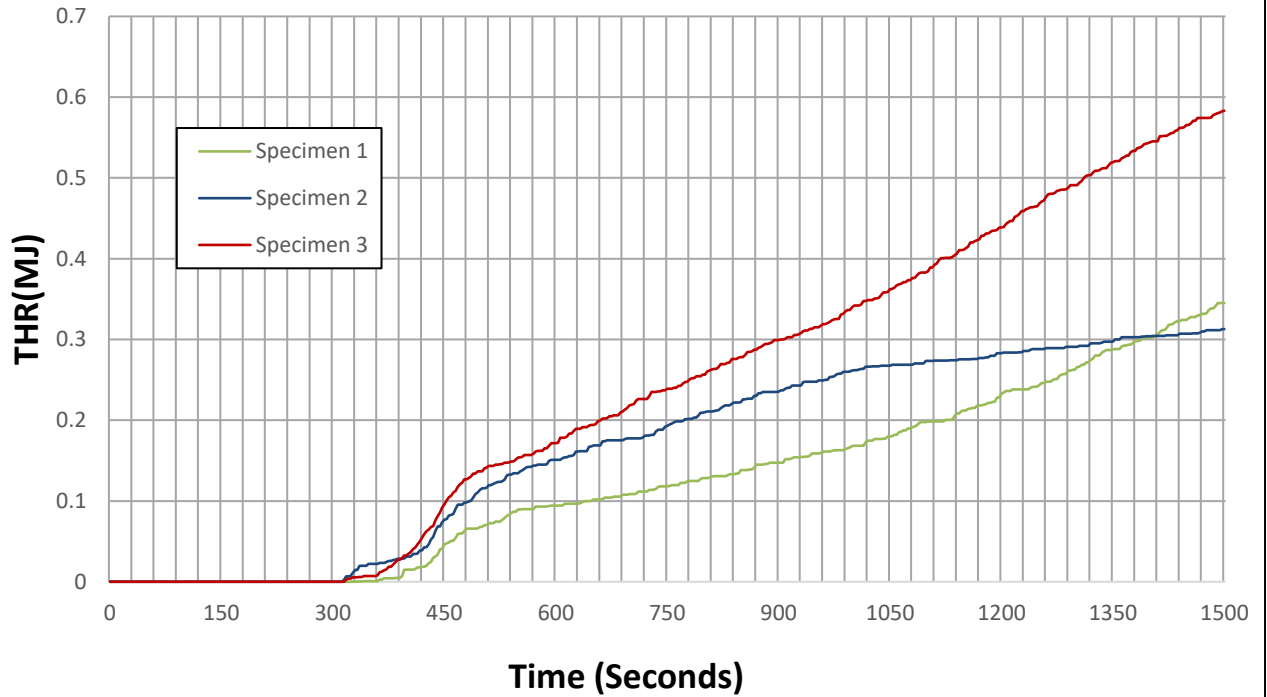


12. APPENDIX 1- GRAPHS

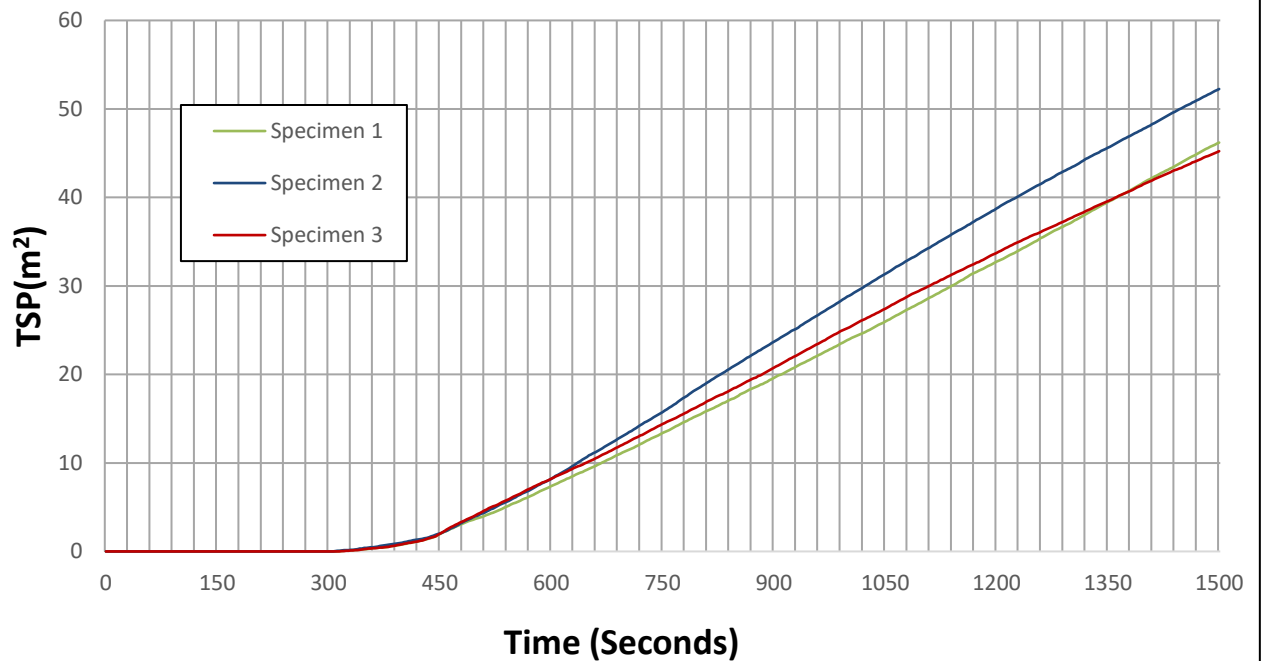


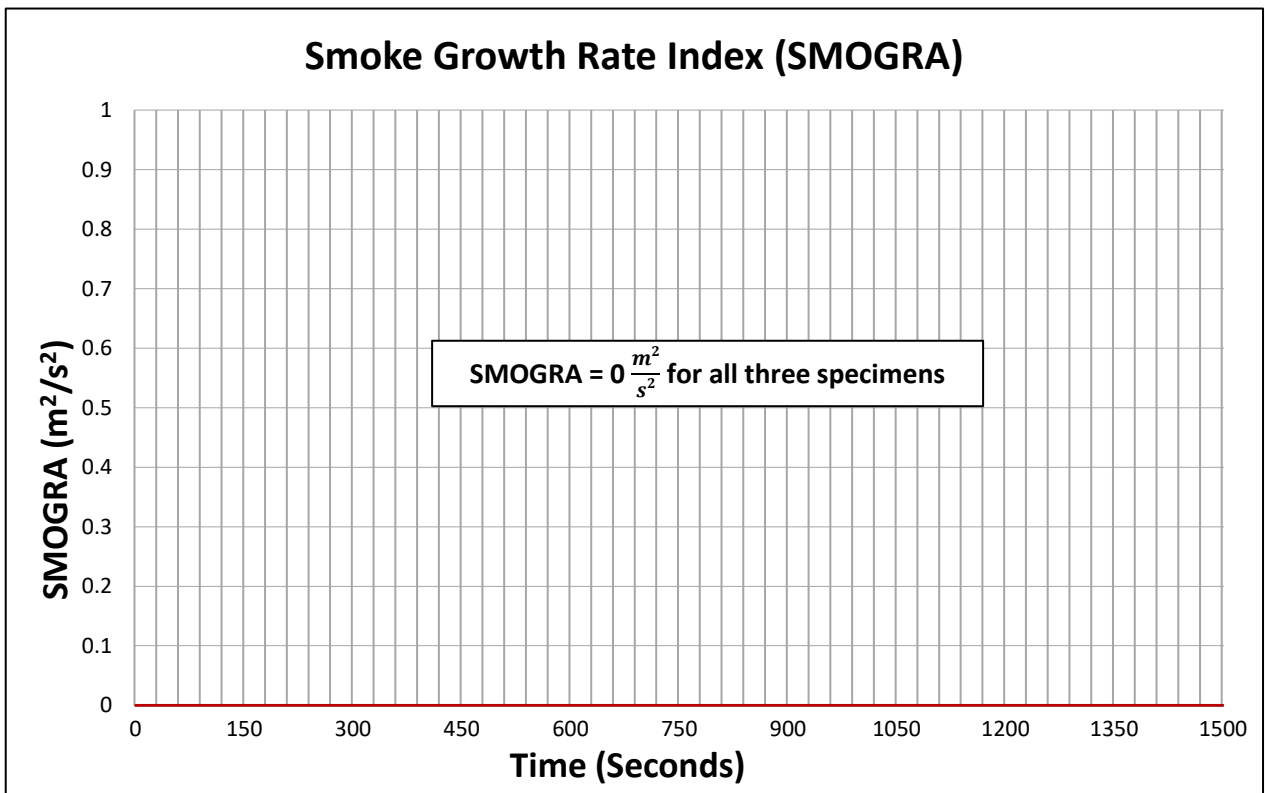
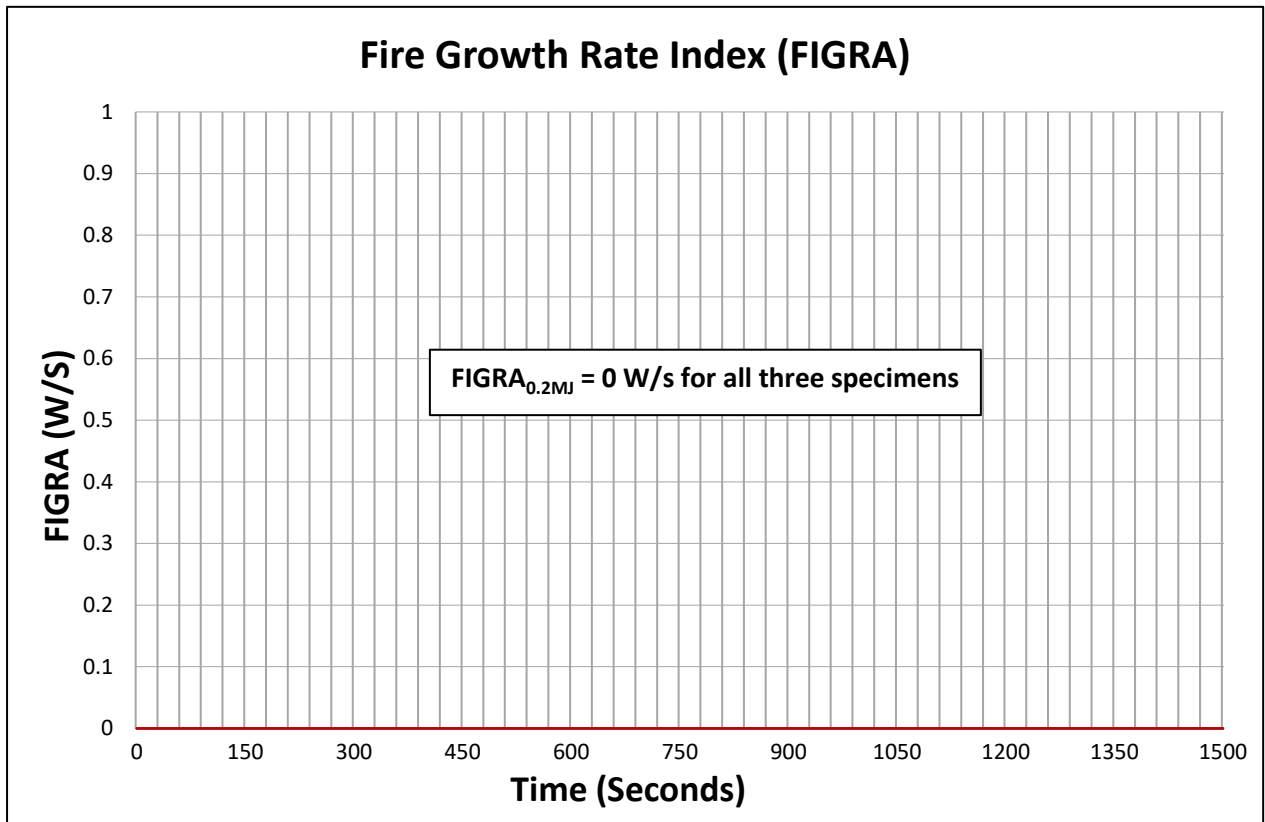


Total Heat Released (THR), Burner Excluded



Total Smoke Production (TSP), Burner Excluded







13. APPENDIX 2- PHOTOGRAPHS



Picture 1: Specimen before the test



Picture 2: Specimen after the test

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