



**TEST REPORT**

Report No.: METS-R 3322-02/2022

Client / Establishment : M/s. Alloy Technology Factory Company  
Kingdom of Saudi Arabia

Sample ID : METS-S22-3322-02  
Sample Receiving Date : 08/04/2022  
Reporting Date : 03/07/2022  
Date of Analysis : 08/04/2022-03/07/2022  
Tested by : JM/SC  
Issue No : 01 (Re-Issue Date: NA)

**Sample Information:**

Sample Description : Aluminium Composite Panel- A2 FR – ACP A2 FR & A2 FR Core

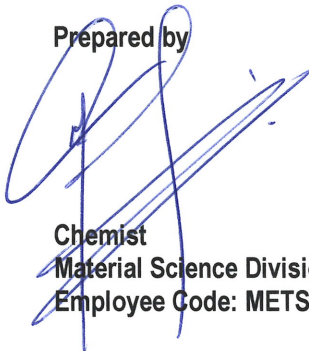
**Brief Evaluation of the Results**

	Test	Compliance
METS-S22-3322-02	Physico-Chemical Analysis	Pass


#The tested parameter comply with SASO 2752:2019 specification limit

The corresponding test results are furnished in following page

Prepared by

  
Chemist  
Material Science Division (MSD)  
Employee Code: METS AJ EC 152

Verified by

  
Team Head  
Material Science Division (MSD)  
Employee Code: METS AJ EC 136



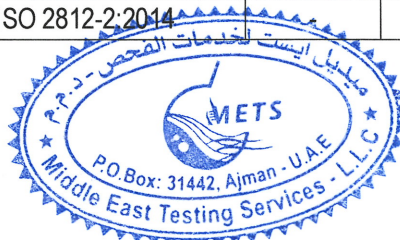


Report No.: METS-R 3322-02/2022

Date of analysis: 08/04/2022-03/07/2022

Test Results:

Parameter	Test Method	Unit	Result	Specification Limit: SASO 2752:2019	
<b>Material</b>					
Dimension	Length	SASO 2752:2019 Cl. 10.3.1	mm	300.86	±3
	Width	SASO 2752:2019 Cl. 10.3.1	mm	301.31	±2
	Thickness	SASO 2752:2019 Cl. 10.3.2	mm	4.112	±0.2
Deviation of diagonal	SASO 2752:2019 Cl. 10.3.3	mm	1.08	≤5	
Straightness at sides	SASO 2752:2019 Cl. 10.3.4	mm/m	0.31	≤1	
Warpage	SASO 2752:2019 Cl. 10.3.5	mm/m	2.01	≤5	
<b>Appearance of the panel</b>					
Wave	SASO ISO 4628 Parts (1 to 5,7,10 / 2016) part 6 / 2011 & part 8 / 2012	-	Absent	Not allowed	
Bubble		-	Absent	Not allowed	
Spot-Size		mm	Not observed	≤3	
Spot-Number		-	Not observed	≤3/m <sup>2</sup>	
Cut		-	Absent	Not allowed	
Concave-Convex		-	Absent	Not allowed	
Scratch		-	Absent	Not allowed	
Stain		-	Absent	Not allowed	
Color Deviation	SASO ASTM D 2244-2014	-	Pass	Non-obvious in visual observation, ΔE≤2	
<b>Panel mechanical properties requirements</b>					
Coating thickness	SASO ISO 2360:2012	μm	39.8	≥30	
Pencil hardness	SASO GSO ISO 15184:2015	-	F-2H	≥HB	
Coating Flexibility (T- Bent test)	ISO 17132:2007	-	Pass	≤2 Without any cracks damage on the coating	
Adhesion Grade	SASO ISO 2409:2020	Grade	0 <sup>1</sup>	≤1	
Impact resistance(kg.cm)	SASO ISO 6272-2:2014	-	No cracks observed at 50 kg.cm	Shall not be any peel off and cracks	
Abrasion resistance	SASO ASTM D 968:2017	Lμm	>2	≥ 2	
Stain resistance	SASO ISO 11998:2007	%	2	≤5	
<b>Chemical resistance</b>					
Alkali resistance	SASO ISO 2812-1:2014	-	Resistant	Shall be resistant	
Acid resistance	SASO ISO 2812-1:2014	-	Resistant	Shall be resistant	
Oil resistance	SASO ISO 2812-1:2014	-	Resistant	Shall be resistant	
Solvent resistance	SASO ISO 2812-1:2014	-	Resistant	Shall be resistant	
Hot water resistance*	SASO ISO 2812-2:2014	-	Resistant	Shall be resistant	







Report No.: METS-R 3322-02/2022

Date of analysis: 08/04/2022-03/07/2022

Test Results:

Parameter	Test Method	Unit	Result	Specification Limit: SASO 2752:2019
<b>Thermal properties (core thermal properties)</b>				
Heat Deflection Temperature	SASO ISO 75-2:2014	°C	89	85 Min
Linear Thermal Expansion Coefficient	ASTM D 696:16	µm/m-°C	151	200 Max
Self-ignition temperature	SASO ASTM D1929:2015	°C	>350	343 Min
Temperature Resistance @ -50 to +80	Visual	-	No defect	-
Thermal conductivity of core, K <sub>c</sub>	ASTM C 518-17 / BS EN ISO 6946:2007	W/mk	0.4148	-
Thermal resistance of core, R <sub>c</sub>			0.0559	-
Internal surface resistance, R <sub>SI</sub>		m²K/W	0.13	-
External surface resistance, R <sub>SE</sub>			0.04	-
Total Thermal resistance, R <sub>T</sub>			0.2259	≥0.06
Thermal transmittance (U value)	ASTM C 518-17	W/m².K	4.43	≤4.5
Drum peel strength	ASTM D1781-98 (2021)	N.mm/mm	107	≥100
Accelerated Weathering at 2000 hours	SASO ISO 16474-2:2015	-	No change observed	Shall have no change
Gloss Deviation*	SASO ISO 2813:2015	-	4	≤10
Salt Fog Resistance at 2000 hours	ISO 11997-1:2017	-	No change observed	Shall have no change
180 degrees Peel Strength	SASO ISO 8510-2:2008	N/mm	9.15	≥9.0
Shear Strength	ASTM C393 / C393 M-16	MPa	23	≥22
Bending Strength	ASTM C393/C 393 M-16	MPa	109	≥100
Bend Elastic Module	ASTM C393/C 393 M-16	MPa	21856	≥20000
Thickness of aluminium layer	ASTM A 370-04	mm	0.55	-
Mass per unit area	ASTM B 767-02	kg/m²	8.46	-
Glose initial Value at 20°*	SASO ISO 2813:2015	-	66.9	-
Glose initial Value at 60°*	SASO ISO 2813:2015	-	89.9	-
Glose initial Value at 85°*	SASO ISO 2813:2015	-	93.4	-

Form MRF 27 Issue No: 2





Report No.: METS-R 3322-02/2022

Date of analysis: 08/04/2022-03/07/2022

Test Results:

Parameter	Test Method	Unit	Result	Specification Limit SASO 2752:2019
<b>Acoustic Properties</b>				
Sound absorption Factor	ISO 354:2003	-	0.042	-
Sound Transmission loss	ISO 717-1:2020	dB	25	-
Loss Factor	EN ISO 6721 Frequency range 100 - 3200 Hz	-	0.0086	-
<b>Technical Properties</b>				
Section Modulus W	DIN 53293-1982	cm <sup>3</sup> /m	1.77	-
Rigidity – Poisson's ratio	DIN 53293-1982	kNm <sup>2</sup> /m	0.31	-
Lacquering*	FT-IR / METS-IP 160	-	Polyester	-

Note 1: Separate core samples were submitted by the client for thermal resistance and transmittance study

\* Parameter accredited by IAS in accordance with ISO/IEC 17025:2017

\*1 The edges of the cuts are completely smooth, none of the squares of the lattice is detached.

The above test results are only applicable to the sample (s) referred above. This report shall not be reproduced except in full, without the written approval of METS laboratory.

For further clarification of reports, please contact [qc@metslab.com](mailto:qc@metslab.com)

-End of Report-

