Mitsubishi Chemical Infratec Co.,Ltd.

Summary of Technical Data Sheet – ALPOLIC™ A2 reAL anodised

(Made in Germany)

The material properties and data in this document are portrayed as general information for reference only and are not product specifications. Due to product changes, improvements and other factors, Mitsubishi Chemical Infratec Co., Ltd. reserves the right to change or withdraw information contained herein without prior notice.

1. General

ALPOLIC™ A2 reAL anodised is an aluminum composite material (ACM) with a high fire-retardant core, used as exterior and interior claddings and roof covering in new buildings and retrofit applications. The material is manufactured by Mitsubishi Polyester Film GmbH with the address, Kasteler Strasse 45/E512, 65203 Wiesbaden Germany, and furnished by approved dealers or distributors.

Technical data may be changed in part without affecting the material quality.

2. Product composition

ALPOLIC A2 is composed of a superior fire-retardant core sandwiched between two skins of 0.5mm thick aluminum alloy:

Composition	Skin material	(Top) 0.5mm thick aluminum alloy (5005-H14 or equivalent) (Back) 0.5mm thick aluminum alloy (3005-H14, 3105-H14, 5005-H14 or equivalent)
	Core material	high mineral filled fire-retardant core

The surface is finished with an anodic oxide layer by continuous process on an aluminium coil. Continuous anodising builds and enhances the surface oxidation using an electro-chemical process under precisely controlled conditions.

The back side of ALPOLIC A2, which will face the structural wall or steel when it is installed as a cladding panel, has a polyester-based wash coating or a service coating to protect it from possible corrosion problems.

The surface is protected with a self-adhesive peel-off protective film consisting of two polyethylene layers of white and black. According to weathering tests under normal outdoor conditions, the protective film will withstand six months' exposure without losing its original peel-off characteristic or causing stains or other damages.

3. Product dimension and tolerance

(1) Panel thickness: 4 mm

(2) Panel size: Standard width = 1270 and 1575 mm
Maximum length = up to 7300 mm

(3) Product tolerance

Width: ± 2.0 mm

Length: ± 1.0 mm/m

Thickness: ± 0.2 mm in 4 mm thick

Bow: Maximum 0.5% (5mm/m) of the length or width

Square-ness (diagonal difference): Maximum 5.0 mm

Surface defect: The surface shall not have any irregularities such as roughness, buckling and other imperfections in accordance with our visual inspection rules. ALPOLIC A2 is supplied with a cut edge and without aluminum sheet displacement or core protrusion.

4. Principal properties

(1) Panel weight: 8.1 kg/m^2

(2) Thermal expansion ratio: 19 ×10^{-6}/°C

(3) Mechanical properties of ALPOLIC A2 as an aluminum composite material:

Item	**Unit**	
Tensile strength (ASTM E8)	MPa or N/mm^2	43
0.2% proof stress (ASTM E8)	MPa or N/mm^2	41
Elongation (ASTM E8)	%	3.8
Flexural elasticity (ASTM C393)	GPa or kN/mm^2	38.5

(4) Mechanical properties of aluminum alloy:

0.2% proof stress: 150 MPa or N/mm^2

Modulus of elasticity: 70 GPa or kN/mm^2

(5) Deflection temperature (ISO 75-2): 110 °C

(6) Sound transmission loss (ASTM E413): STC (Standard Transmission Class) 27

5. Summary of fire tests

ALPOLIC A2 fluoropolymer coated finish has passed the following fire test.

Country	**Test standard**	**Results & classification**
EU	EN 13823, EN ISO 11925-2, EN 13501-1	Class A2-s1, d0

As the top anodised layer has no organic components, ALPOLIC A2 reAL anodised can meet the fire performance requirement of the above test standards.

6. Anodised finish

The top surface is finished with anodic oxide layer and it is produced in a continuous anodising line on an aluminium coil. Continuous anodising builds and enhances the surface oxidation using an electro-chemical process under precisely controlled conditions. The anodic oxide layer is 8 micron thick. Comparing with conventional batch anodising process, the continuous anodising finish has excellent color uniformity.

7. Notes

- Panels from different production lots should not be mixed on a building elevation.
- Brake bend or other forming operation shall cause visible cracking on the surface.
- The panels should not be fabricated at temperatures lower than 10 degrees C.
- Panels should be stored flat in a dry indoor environment.
- Please refer to the fabrication manuals for routing and fabrication recommendations.

Note

As part of its rigorous quality assurance procedures, Mitsubishi Chemical Infratec Co., Ltd. (“MCIT”) conducts visual inspections of ALPOLIC products during the manufacturing process. If any imperfections are identified, the products will undergo a pre-shipment inspection in accordance with the test methods specified in AAMA 2605: *Voluntary Specifications, Performance Requirements, and Test Procedures for Superior Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix)*. Only products that, in MCIT’s sole discretion, pass this inspection will be shipped.

The relevant standard in AAMA 2605:
5.0 GENERAL
5.2 Coatings shall be visibly free from flow lines, streaks, blisters or other surface imperfections in the dry-film state on exposed surfaces when observed at a distance of 3 m (10 ft) from the metal surface and inspected at an angle of 90 degree to the surface.