

DESCRIPTION

ALCA5® cast precision plate main advantage is its **dimensional stability**. The low level of internal stress, reduces considerably the possibility of plate deformation during and after machining. This high stability leads to some cost savings by avoiding extra operations such as rough-milling, finishing or re-works. Typical applications are reference plates, molds, jigs, machine parts and construction equipments.

PROCESSING CHARACTERISTICS

Weldability

WIG/MIG	Very good
By resistance	Very good

Anodizing

Hard anodizing	Excellent
Decorative	Good

Polishing ability

Very good

Corrosion resistance

Inland atmosphere	Excellent
Marine atmosphere	Good

Machinability

Excellent

To obtain a smooth surface on **ALCA5®**, high cutting speeds and sintered carbide cutting tools are recommended.

AVAILABILITY

ALCA5® cast precision plates are available in temper O3 (homogenized) aluminum in the following standards size:

Thickness	6,35 mm to 101,6 mm
Widths	1232 / 1537 / 1842 / 2451 mm
Lengths	2451 / 3061 / 3670 / 7341 mm

Different ingots offer milling capabilities up to 1080 mm thick, or 2489 mm width, and 7391 mm in length. Non-standard thicknesses, widths and lengths are available upon inquiry.

ALCA5® plates are coated with a labelled protective plastic film on both sides.

CHEMICAL COMPOSITION (Weight-%)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti+Zr
max.	max.	max.	0.4	4	0.04	max.	max.
0.4	0.4	0.1	1	4.9	0.25	0.25	0.15

PHYSICAL PROPERTIES (Typical values)

Density	2,66 g/cm ³
Elastic modulus	71000 MPa
Coefficient of thermal expansion (68°F-212°F)	23,76 µm/m.°C
Thermal conductivity (68°F)	120 W/m.°C
Electrical conductivity (68°F)	27% IACS

MECHANICAL STRENGTH (Typical values)

Ultimate Tensile Strength	283 MPa
Yield Strength	124 MPa
Elongation	16%
Brinell Hardness	70 HB

TOLERANCES

Thickness	+/- 0,127 mm
Width and Length	+3,18 mm / -0 mm
Flatness	
≤ 12,7 mm	+/- 0,38 mm *
≥ 15,9 mm	+/- 0,13 mm *
Roughness	≤ 0,4 µm
Surface condition	Precision milled
Edge condition	Precision sawed

*Checked on a granite table using a state of the art flatness measuring device. This is measured on several sections of 1 meter.

Prolonged exposure to temperatures exceeding 70°C can provoke susceptibility to intercrystalline corrosion. The information in this publication does not imply a guarantee of properties or capability for fabrication, assembly or application in particular cases. Design rules presented must be take into account by the user. PCP Aluminium reserves the right to modify this data sheet without prior warning.

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