

ALCA 5[®] AA5083

Cast precision plate, milled both sides

905 de l'innovation
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DESCRIPTION

ALCA5[®] cast precision plate product is characterized by an ***excellent dimensional stability***. The low level of internal stress reduces considerably the plate deformation during and after machining. This high stability leads to cost saving on extra operations such as rough-milling, finishing or re-works. Typical applications are reference plates, machine construction, molds, jigs, and construction equipments.

PROCESSING CHARACTERISTICS

Weldability

WIG/MIG Very good
By resistance Very good

Anodizing

-hard anodizing Excellent
-Decorative Not suitable

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) in the following standards sizes:

Thickness 0.250" to 4.000"
Widths 48.5/60.5/72.5/96.5"
Lengths 96.5/144.5/289.0"

Milling capability up to 42.5" thick, 98.0" width, and 293.0" length.

Non-standard thicknesses, widths and lengths are available on inquiry.

Plates in ALCA 5[®] are coated with a labelled protective plastic film on both sides.

CHEMICAL COMPOSITION (Weight-%)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr
max. 0.4	max. 0.4	max. 0.1	0.4	4	0.05	max. 0.25	max. 0.15

PHYSICAL PROPERTIES (Typical values)

Density	0.0961 lb/in ³
Elastic modulus	10.3 x 10 ⁶ psi
Coefficient of thermal Expansion (68°F-212°F)	13.2 µin/in·°F
Thermal conductivity (20°C)	69.3 Btu/ft h·°F
Electrical conductivity (20°C)	27% IACS

MECHANICAL STRENGTH (Typical values)

Ultimate Tensile Strength	41000 PSI
Yield Strength	18000 PSI
Elongation	16%
Brinell Hardness	70 HB

TOLERANCES

Thickness	+/- 0.005"
Width and Length	+0.125"/-0.000"
Flatness	
≤ 0.500"	+/-0.015" *
≥ 0.625"	+/- 0.005" *
Roughness	≤ 20 µin
Surfaces condition	Precision milled
Edges condition	Precision sawed

* Checked on a granite table using a flatness state of the art measuring device on linear measure section 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 Canada reserves the right to modify this data sheet without prior warning.

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AVAILABILITY

ALCA5[®] cast precision plates are available in temper O3 (homogenized) in the following standards sizes:

Thickness 6 to 100mm
Widths 1230/1540/1840/2450mm
Lengths 2450/3670/7340mm

Milling capability up to 1090mm thick, 2490mm width, and 7440mm length.

Non-standard thicknesses, widths and lengths are available on inquiry.

Plates in ALCA 5[®] are coated with a labelled protective plastic film on both sides.

CHEMICAL COMPOSITION (Weight-%)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti + Zr
max. 0.4	max. 0.4	max. 0.1	0.4 1	4 4.9	0.05 0.25	max. 0.25	max. 0.15

PHYSICAL PROPERTIES (Typical values)

Density	2.66 g/cm ³
Elastic modulus	71000 MPa
Coefficient of thermal Expansion (20°C-100°C)	23.76 µm/m·°C
Thermal conductivity (20°C)	120 W/m·°C
Electrical conductivity (20°C)	27% IACS

MECHANICAL STRENGTH (Typical values)

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

TOLERANCES

Thickness	+/-0.13mm
Width and Length	+3.18mm/-0.00mm
Flatness	
≤ 12mm	+/-0.38mm max. *
≥ 15mm	+/-0.13mm max. *
Roughness	≤ 0.50 µm
Surfaces condition	Precision milled
Edges condition	Precision sawed

* Checked on a granite table using a flatness state of the art measuring device on linear measure section of 1 meter.



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