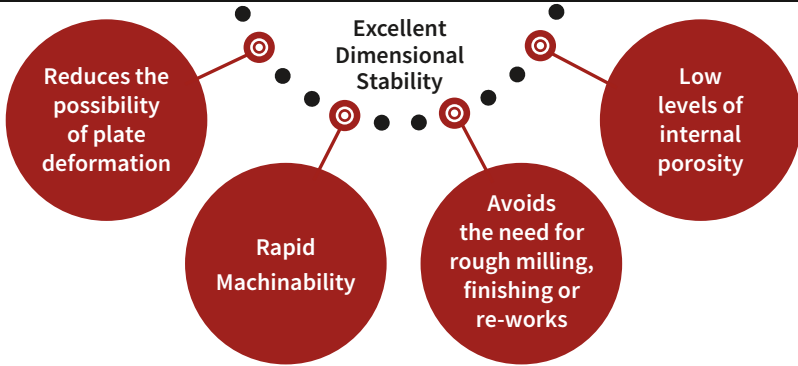


# ALCA5® PRECISION CAST PLATE

## AA5083



### BENEFITS OF ALCA5® PRECISION CAST PLATE



### TYPICAL APPLICATIONS FOR ALCA5® PRECISION CAST PLATE

✓ Reference plates

✓ Tool & Jig

✓ Mold base plates

✓ Machine parts and mounting

✓ Construction equipment

#### WELDABILITY

**WIG/MIG**  
VERY GOOD



**By Resistance**  
VERY GOOD



#### CORROSION RESISTANCE

**Inland Atmosphere**  
EXCELLENT



**Marine Atmosphere**  
GOOD



#### ANODIZING

**Hard Anodizing**  
EXCELLENT



**Decorative**  
NOT SUITABLE



#### MACHINEABILITY

EXCELLENT



#### POLISHING ABILITY

VERY GOOD



### MECHANICAL STRENGTH (TYPICAL VALUES)

Ultimate Tensile Strength  
**41000 PSI**

Yield Strength  
**18000 PSI**

Elongation  
**16%**

Brinell Harness  
**70 HB**

AVAILABILITY IN 0.250" TO 4.000"

Max. Widths	Std. Lengths	Max. Lengths
48.5"	96.5/120.5/144.5"	289"
60.5"	96.5/120.5/144.5"	289"
72.5"	96.5/120.5/144.5"	289"
96.5"	96.5/120.5/144.5"	289"

OTHER SIZES MAY BE AVAILABLE UPON REQUEST

## 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	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) aluminum in the following standards size:

<b>Thickness</b>	0.250" to 4.000"
<b>Widths</b>	48.5" / 60.5" / 72.5" / 96.5"
<b>Lengths</b>	96.5"/120.5"/144.5" / 289.0"

Different ingots offer milling capabilities up to 42.5" thick, or 98.0" width, and 291" 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	0.05	max.	max.
0.4	0.4	0.1	1	4.9	0.25	0.25	0.15

## PHYSICAL PROPERTIES (Typical values)

<b>Density</b>	0.0961 lb/in <sup>3</sup>
<b>Elastic modulus</b>	10.3 x 10 <sup>6</sup> PSI
<b>Coefficient of thermal expansion (68°F-212°F)</b>	13.2 µin/in·°F
<b>Thermal conductivity (68°F)</b>	69.3 Btu/ft·h·°F
<b>Electrical conductivity (68°F)</b>	27% IACS

## MECHANICAL STRENGTH (Typical values)

<b>Ultimate Tensile Strength</b>	41000 PSI
<b>Yield Strength</b>	18000 PSI
<b>Elongation</b>	16%
<b>Brinell Hardness</b>	70 HB

## TOLERANCES

<b>Thickness</b>	+/- 0.005"
<b>Width and Length</b>	+0.125" / -0.000"
<b>Flatness</b>	
≤ 0.500"	+/- 0.015" *
≥ 0.625"	+/- 0.005" *
<b>Roughness</b>	≤ 16 µin
<b>Surface condition</b>	Precision milled
<b>Edge condition</b>	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 taken into account by the user. PCP Aluminium reserves the right to modify this data sheet without prior warning.