

# BUS CONDUCTOR<sup>®</sup> AA6101

*Cast precision sawed plate & block*

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## DESCRIPTION

**BUS CONDUCTOR<sup>®</sup>** is a heat treatable alloy suitable for electrical application with an electrical conductivity of 59.5% IACS, 2% less than **AA1370** but with better machinability.. The annealed state (T0) offers a good bending reproducibility. It is fabricated from heat treated prime cast ingots. This product is characterized by an *excellent dimensional stability* after machining, a very good weldability and a very high thermal and electrical conductivity. This sawn plate and block technology was derived from PCP Canada **ALCAS<sup>®</sup>** and **MAX5<sup>®</sup>** which are produced and sold in North America.

## APPLICATION

This alloy is primarily used for bus conductor applications in power transmission; it is also an excellent choice for other electrical projects in enclosed electrical installations such as power station. PCP Canada developed this product to meet complex electrical requirements to minimize energy losses at the lowest possible cost. This product is available in a wide variety of sizes.

## PRECISION

The **AA6101** cast products offers precision in all dimensional specifications including an excellent flatness. The inherent stability of the cast heat treated ingots is reflected in the end product plate.

## AVAILABILITY (Plate)

<b>Thickness</b>	0.250 to 4.00"
<b>Width</b>	Up to 76.5"
<b>Length</b>	Up to 175"

## AVAILABILITY (Blocks)

<b>Thickness</b>	Up to 27.250"
<b>Widths</b>	Up to 76.5"
<b>Lengths</b>	Up to 175"

Other thicknesses, widths and lengths may be available on inquiry.

On inquiry, this product may be available milled and coated with protective plastic film on milled sides. Other tolerances may be applicable.

## CHEMICAL COMPOSITION (Weight-%)

Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	B
min.	0,3	max.	max.	max.	0,35	max.	max.	max.
97,6	0,7	0,50	0,10	0,03	0,80	0,03	0,10	0,06

## PHYSICAL PROPERTIES (Typical values)

Density	0.0977 lb/in <sup>3</sup>
Elastic modulus	10 x 10 <sup>6</sup> psi
Coefficient of thermal Expansion (68°F-212°F)	13 µin/in·°F
Thermal conductivity (68°F)	126 Btu/ft·h·°F
Electrical conductivity (68°F)	59.5% IACS

## MECHANICAL STRENGTH (Typical values)

Ultimate Tensile Strength	13000 PSI
Yield Strength	4000 PSI
Elongation	30 %
Brinell Hardness	30 HB

## TOLERANCES (Sawed plate)

Thickness	+/-0.020"
Width and Length	+0.125"/-0.000"
Flatness	≤ 0.035" *
Roughness	≤ 1000 µin
Surfaces condition	Precision sawed
Edges condition	Precision sawed

## TOLERANCES (Sawed block)

Thickness	+0.125/-0.000"
Width and Length	+0.250"/-0.000"
Roughness	≤ 1000 µin
Surfaces condition	Precision sawed
Edges condition	Precision sawed

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



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## PRECISION

The **AA6101** cast products offers precision in all dimensional specifications including an excellent flatness. The inherent stability of the cast heat treated ingots is reflected in the end product plate.

## AVAILABILITY (Plate)

<b>Thickness</b>	6 to 100mm
<b>Width</b>	Up to 1940mm
<b>Length</b>	Up to 4450mm

## AVAILABILITY (Blocks)

<b>Thickness</b>	Up to 692mm
<b>Widths</b>	Up to 1940mm
<b>Lengths</b>	Up to 4450mm

Other thicknesses, widths and lengths may be available on inquiry.

On inquiry, this product may be available milled and coated with protective plastic film on milled sides. Other tolerances may be applicable.

## CHEMICAL COMPOSITION (Weight-%)

Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	B
min. 0,3	max.	max.	max.	0,35	max.	max.	max.	max.
97,6	0,7	0,50	0,10	0,03	0,80	0,03	0,10	0,06

## PHYSICAL PROPERTIES (Typical values)

Density	2.70g/cm <sup>3</sup>
Elastic modulus	69000 MPa
Coefficient of thermal Expansion (20°C-100°C)	23.4 µm/m·°C
Thermal conductivity (20°C)	220 W/ m·°C
Electrical conductivity (68°F)	59.5% IACS

## MECHANICAL STRENGTH (Typical values)

Ultimate Tensile Strength	89 MPa
Yield Strength	28 MPa
Elongation	30 %
Brinell Hardness	30 HB

## TOLERANCES (Sawed plate)

Thickness	+/-0.5mm
Width and Length	+3.18/-0.00mm
Flatness	≤ 0.90mm *
Roughness	≤ 25 µm
Surfaces condition	Precision sawed
Edges condition	Precision sawed

## TOLERANCES (Sawed block)

Thickness	+3.18/-0.00mm
Width and Length	+6.35/-0.00mm
Roughness	≤ 25 µm
Surfaces condition	Precision sawed
Edges condition	Precision sawed

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

