

SPECIFICATIONS

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|------------|------|
| Commercial | 2011 |
| EN | 2011 |

Aluminium alloy 2011 is a high mechanical strength alloy that machines exceptionally well. Often called a Free Machining Alloy or 'FMA' it is well suited to use in automatic lathes.

Machining at high speeds produces fine chips that are easily removed. The excellent machining characteristics allow the production of complex and detailed parts. In some circumstances 2011 can replace free machining brass without the need for alterations to tooling.

It has poor corrosion resistance, which means parts made from 2011 tend to be anodised to provide additional surface protection.

When higher levels of corrosion resistance are required, 6262 T9 may be a suitable replacement.

Applications - 2011 is typically used in applications that require parts manufactured by repetition machining. These applications may include:

Appliance parts & trim
Automotive trim
Fasteners and fittings
Ordnance

CHEMICAL COMPOSITION

| BS EN 573-3:2009 Alloy 2011 | |
|--------------------------------|-------------|
| Element | % Present |
| Copper (Cu) | 5.00 - 6.00 |
| Bismuth (Bi) | 0.20 - 0.60 |
| Iron (Fe) | 0.0 - 0.70 |
| Lead (Pb) | 0.20 - 0.40 |
| Silicon (Si) | 0.0 - 0.40 |
| Zinc (Zn) | 0.0 - 0.30 |
| Others (Total) | 0.0 - 0.15 |
| Other (Each) | 0.0 - 0.05 |
| Aluminium (Al) | Balance |

ALLOY DESIGNATIONS

Aluminium alloy 2011 also corresponds to the following standard designations and specifications **but may not be a direct equivalent:**

AlCu6BiPb
FC1
A92011
CB60
3.1655
AlCuBiPb

TEMPER TYPES

The most common tempers for 2011 aluminium extruded bar is:

- T6 - Solution heat treated and artificially aged

SUPPLIED FORMS

- Bar

GENERIC PHYSICAL PROPERTIES

| Property | Value |
|-----------------------|---------------------------|
| Density | 2.83 g/cm ³ |
| Melting Point | 535 °C |
| Thermal Expansion | 22.9 x10 ⁻⁶ /K |
| Modulus of Elasticity | 70 GPa |

MECHANICAL PROPERTIES

| BS EN 755-2:2008 Extruded Rod and Bar Up to 75mm Dia. | |
|---|-------------|
| Property | Value |
| Proof Stress | 230 Min MPa |
| Tensile Strength | 310 Min MPa |
| Hardness Brinell | 110 HB |
| Elongation A | 8 Min % |

Properties above are for material in the T6 condition

WELDABILITY

Alloy 2011 has extremely poor weldability and thus welding is not recommended. However, as it is used for machined parts there is rarely a need to weld this alloy.

FABRICATION

| Process | Rating |
|--------------------------|-----------|
| Workability - Cold | Fair |
| Machinability | Excellent |
| Weldability – Gas | Poor |
| Weldability – Arc | Poor |
| Weldability – Resistance | Poor |
| Brazability | Poor |
| Solderability | Fair |

CONTACT

| | |
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| Address: | Please make contact directly with your local service centre, which can be found via the Locations page of our web site. |
| Web: | www.amari-ireland.com |

REVISION HISTORY

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|-------------------|--------------|
| Datasheet Updated | 18 July 2019 |
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