

Aluminium Alloy 5454 - 'O' and H111 Sheet



SPECIFICATIONS

Commercial	5454
EN	5454

Aluminium alloy 5454 has very good corrosion resistance, in particular to seawater and general environmental conditions. Strength is medium to high and similar alloy 5754 with good strength in the temperature range 65 to 170 degrees centigrade. It has a high fatigue strength. It is not suitable for complex or fine extrusions.

Applications 5454 is typically used in:

- ~ Road Transport Body-Building
- ~ Cemical and Process Plant
- ~ Pressure Vessels, Containers, Boilers
- ~ Cryogenics
- ~ Marine & Off-shore incl. Masts,
- ~ Pylons, poles & masts

CHEMICAL COMPOSITION

BS EN 573-3:2009 Alloy 5454	
Element	% Present
Magnesium (Mg)	2.4 - 3
Manganese (Mn)	0.5 - 1
Iron (Fe)	0.4 max
Silicon (Si)	0.25 max
Zinc (Zn)	0.25 max
Chromium (Cr)	0.05 - 0.2
Titanium (Ti)	0.2 max
Others (Total)	0.15 max
Copper (Cu)	0.1 max
Other (Each)	0.05 max
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Alloy 5454 corresponds to the following standard designations and specifications **but may not be a direct equivalent:**

A5454

ISO Al Mg3Mn

Al 2.7Mg 0.8Mn Cr

TEMPER TYPES

The most common tempers for 5454 aluminium are shown below

- O - Soft
- H111 - Some work hardening imparted by shaping processes but less than required for H11 temper
- H22 - Work hardened by rolling then annealed to quarter hard
- H32 - Work hardened by rolling then stabilised by low-temperature heat treatment to quarter hard

SUPPLIED FORMS

Alloy 5454 is supplied in most forms but is not suitable for fine or complex extrusions:

- Plate
- Sheet
- Bar
- Treadplate/Patterned Sheet
- Tube
- Wire

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.69 g/cm ³
Melting Point	645 °C
Thermal Expansion	23.6 x10 ⁻⁶ /K
Modulus of Elasticity	70.5 GPa
Thermal Conductivity	135 W/m.K
Electrical Resistivity	34 % IACS

MECHANICAL PROPERTIES

BS EN 485-2:2008 Sheet 0.2mm to 6.0mm	
Property	Value
Proof Stress	85 Min MPa
Tensile Strength	215 - 275 MPa
Hardness Brinell	58 HB

Properties above are the range for material in the 'O'/H111 conditions

WELDABILITY

Alloy 5454 has good weldability by some methods but Soldering and Brazing are not recommended.

FABRICATION

Formability of Alloy 5454 is good in the softer tempers and it can be extruded.

CONTACT

Address:	Please make contact directly with your local service centre, which can be found via the Locations page of our web site
Web:	www.aalco.co.uk

REVISION HISTORY

Datasheet Updated	13 November 2018
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