

## SPECIFICATIONS

Commercial 5454 H22

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
- ~ Chemical 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)	2.40 - 3.00
Manganese (Mn)	0.50 - 1.00
Iron (Fe)	0.0 - 0.40
Zinc (Zn)	0.0 - 0.25
Silicon (Si)	0.0 - 0.25
Chromium (Cr)	0.05 - 0.20
Titanium (Ti)	0.0 - 0.20
Others (Total)	0.0 - 0.15
Copper (Cu)	0.0 - 0.10
Other (Each)	0.0 - 0.05
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
- Extrusions
- Treadplate/Patterned Sheet
- Tube
- Wire

## GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.69 g/cm <sup>3</sup>
Melting Point	645 °C
Thermal Expansion	23.6 x10 <sup>-6</sup> /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 thick

Property	Value
Proof Stress	180 Min MPa
Tensile Strength	250 - 305 MPa
Hardness Brinell	74 HB

Properties above are the range for material in the H22 and H32 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

<b>Address:</b>	Please make contact directly with your local service centre, which can be found via the Locations page of our web site
<b>Web:</b>	<a href="http://www.aalco.co.uk">www.aalco.co.uk</a>

## REVISION HISTORY

<b>Datasheet Updated</b>	13 November 2018
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