

## Scope

Aluminium alloy 5454 has very good corrosion resistance, in particular to seawater and general environmental conditions. Strength is medium to high and similar to 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.

## Application

This material is used for road transport body building, chemical & process plant, cryogenics, marine & offshore, pylons, poles and masts and pressure vessels, containers & boilers.

## Supplied Forms

- Plate
- Sheet
- Bar
- Extrusions
- Treadplate/patterned sheet
- Tube
- Wire

## Alloy Designations

Aluminium alloy 545 corresponds to the following standard designations and specifications but may not be a direct equivalent: A5454, ISO Al Mg3Mn and Al 2.7Mg 0.8Mn Cr.

## Temper Types

The most common tempers for 5454 aluminium are:

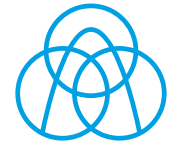
- O - Soft
- H111 - Some work hardening imparted by shaping process but less than required for H11 temper.
- H22 - Work hardened by rolling then annealed to quarter hard.
- H32 - Work hardened by rolling then stabilised by low temperature heat treatment to quarter hard.

## Fabrication

Formability of Alloy 545 is good in the softer tempers and it can be extruded.

## Welding

Alloy 5454 has good weldability by some methods but soldering and brazing are not recommended.



### Chemical Composition

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

### Mechanical properties at room temperature

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

Properties above are for material in the H22 condition

### Reference data for some physical properties (for guidance only)

Property	Value
Density	2.69 Kg/m <sup>3</sup>
Melting Point	645 °C
Thermal Expansion	23.6 x 10 <sup>-6</sup> /K
Modulus of Elasticity	70.5 GPa
Thermal Conductivity	135 W/m.K
Electrical Resistivity	34% IACS

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### Important Note

Information given in this data sheet about the condition or usability of materials respectively products are no warranty for their properties, but act as a description.

The information, we give on for advice, comply to the experiences of the manufacturer as well as our own. We cannot give warranty for the results of processing and application of the products.