

Aluminium Alloy

5454 - H22 and H32 Sheet



SPECIFICATIONS

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| Commercial | 5454 H22 |
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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) | 2.40 - 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 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 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

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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 | 13 November 2018 |
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DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

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