



IS 617:2024

Aluminium and Aluminium Alloys Ingots for Remelting and Castings for General Engineering Purposes — Specification

Aluminium, owing to its relatively **low melting point** in addition to its **light weight, corrosion resistance, adequate strength** and **recycleability** is extensively used in **ingots and castings, eg. in automotive and aerospace industries, furniture and cookware.**

Aluminium Castings are products at or near their finished shape formed by solidification of Aluminium metal or alloy in a mould. **Aluminium ingots for remelting** are cast into a form suitable for remelting, which has been processed to adjust chemical composition and control impurities. Major alloying elements with Aluminium are **silicon, copper, magnesium, iron** etc in different percentages to derive different alloy grades.

IS 617:2024 covers requirements of aluminium and its alloys in form of ingots for remelting and castings for general engineering purposes. This standard was first published in 1955 and subsequently revised in 1959, 1975, 1994 and 2024.

The IS tabulates different grades of aluminium alloys and states prevalent casting process- **sand casting, chill casting, pressure die-casting** and **investment casting**. The standard specifies product **grade designation**, comprising of **Aluminium alloy designations, casting process and temper designations**. eg IS AC- AlSi7Mg-K-T6 indicates aluminium casting alloy AC- AlSi7Mg has been chill cast, solution heat-treated and fully artificially aged.

Among key specifications, **Chemical composition** corresponding to different alloys has been specified in the IS. **Mechanical tests (tensile test and hardness)** are only applicable for castings and may be carried out on separately cast test pieces. Requirement of **freedom from defects** are given for both ingots and castings.

Comparison of IS grades designation with JIS, EN and AA designation is also given.

The **Ministry of Mines**, through **Aluminium and Aluminium Alloys QCO** has mandated that all Aluminium and Aluminium Alloys Ingots for Remelting and Castings for General Engineering Purposes sold, manufactured or imported in India shall **compulsorily** comply with IS 617:2024 and be covered under the BIS certification.