

Material Specification Sheet

Aluminum Alloy 3003

Description

Aluminum Alloy 3003-H14 is an excellent metal for general sheet metal work where only moderate strength but superior corrosion resistance is required. The terminology for the thickness of aluminum sheets does not use a Gauge number – like Galvanized or other carbon steel – it is instead requested by its' actual decimal thickness in inches. There are many alloys of Aluminum; 3003 is widely used as a general-purpose alloy for moderate-strength applications requiring good workability. There are also many different Temper Grades of Aluminum; H14 is a strained hardened temper that has a tensile strength suitable for sheet metal applications. It can be easily roll-formed and welded. It is, of course, more rust resistant than galvanized and is lighter in weight.

Mechanical Properties

Typical mechanical properties for aluminum alloy 3003-H14 are listed below.

- Tensile Strength: 22.0
- Elongation % in 2 “: 8
- Yield Strength: 21.0
- Brinell Hardness: 40

ASTM Specifications

ASTM Designation B209 This specification covers aluminum and aluminum-alloy flat sheet, coiled sheet, and plate in particular alloys and tempers described. Plate in all alloys and sheet in heat-treatable alloys shall have a mill finish. Sheet in non-heat-treatable alloys shall have any one of the following finishes: mill finish, one-side bright mill finish, standard one-side bright finish, and standard two-sides bright finish. The sheet and plate shall conform to the specified requirements for tensile properties. The heat treatment capability, reheat-treatment capability, bend properties, stress-corrosion resistance, and exfoliation-corrosion resistance of the sheet and plate shall be determined through specified processes.

Alloying Elements

Manganese is the major alloying element of alloys in this group, which are generally non-heat-treatable. Because only a limited percentage of manganese, up to about 1.5%, can be effectively added to aluminum, it is used as a major element in only a few instances. One of these, however, is the popular 3003, which is widely used as a general-purpose alloy for moderate-strength applications requiring good workability

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