AS 2848.1—1998

Reconfirmed 2018

Australian Standard™

Aluminium and aluminium alloys—Compositions and designations

Part 1: Wrought products

This Australian Standard was prepared by Committee MT/3, Aluminium and Aluminium Alloys. It was approved on behalf of the Council of Standards Australia on 7 August 1998 and published on 5 October 1998.

The following interests are represented on Committee MT/3:

Australasian Railway Association

Australian Aluminium Council

Australian Automobile Association

Australian Chamber of Commerce and Industry

New Zealand Manufacturers Federation

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OF

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Aluminium and aluminium alloys–Compositions and designations

Part 1: Wrought products

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Part 1: Wrought products

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MT/3, Aluminium and Aluminium Alloys, at the request of the Australian Aluminium Council, to supersede AS 2848.1—1986.

This Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian Standard.

The objective of this revision is to upgrade the listings of designations and chemical compositions of wrought aluminium and aluminium alloys currently available in Australia and to upgrade the temper designations for strain hardening and heat treatment.

The designations are based on those in the 1994 edition of the Australian Aluminium Council document, *Aluminium Standards, Data and Design—Wrought Products*. The aluminium and alloy designations for grade comprise a four-digit numbering system. The designations for temper generally align with the 'alternative designations' listed in ISO 2107:1983, *Aluminium, magnesium and their alloys—Temper designations*.

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STANDARDS AUSTRALIA

Australian Standard

Aluminium and aluminium alloys—Compositions and designations

Part 1: Wrought products

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard provides a listing of wrought aluminium and aluminium alloys currently available in Australia and defines the temper designation system for aluminium and aluminium alloys that have been strain hardened, with or without supplementary thermal treatments, or thermally treated, with or without supplementary strain-hardening. This Standard specifies chemical composition limits for all designated grades. Requirements for other properties are specified in Standards that cover product types.

1.2 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.2.1 Annealing—a thermal treatment to soften metal by the removal of strain hardening resulting from cold working, by recrystallization and/or by coalescing precipitates from the solid solution.

1.2.2 Artificial ageing—a thermal treatment of an alloy carried out above room temperature to produce strengthening by precipitation of soluble constituents from a super-saturated solid solution. Also known as 'precipitation heat treatment'.

1.2.3 Cold working—plastic deformation of a metal or alloy to enable strain hardening to occur. Cold working is usually conducted at room temperature.

1.2.4 Natural ageing—the strengthening of an alloy that occurs by the spontaneous precipitation of soluble constituents from a super-saturated solid solution at room temperature.

1.2.5 Partial annealing—a thermal treatment of a cold-worked metal or alloy to reduce its strength properties to a controlled level.

1.2.6 Quenching—a process of cooling a metal or alloy from an elevated temperature at a sufficiently rapid rate to retain some or all of the soluble constituents in solid solution, by contact with a solid, a liquid or a gas.

1.2.7 Solution heat treatment—a process in which an alloy is heated to and held at a suitable temperature long enough to allow soluble constituents to enter into solid solution, and quenched to retain them in a super-saturated state.

1.2.8 Stabilizing—a thermal treatment used to promote stability of dimensions, mechanical properties, structure or internal stress.

1.2.9 Strain hardening—modification of a metal structure by cold working, resulting in an increase in strength and hardness, and some loss of ductility.

1.2.10 Temper—a state of a metal or alloy resulting from processing, by mechanical and/or thermal treatments, to produce characteristic physical and mechanical properties.

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