

AS 1572:2023



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Australia



Copper and copper alloys — Seamless tubes for engineering purposes



AS 1572:2023

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- Australian Industry Group
- Australian Plumbing Manufacturers Association
- Consumer Electronics Suppliers Association
- Housing Industry Association
- International Copper Association Australia
- Joint Accreditation System of Australia & New Zealand
- Plastics Industry Pipe Association of Australia
- Plumbing Products Industry Group
- Water Services Association of Australia
- Weld Australia

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Preface

This Standard was prepared by the Joint Standards Australia / Standards New Zealand Committee MT-002, Copper and Copper Alloys, to supersede AS 1572—1998.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to specify requirements for round, square and rectangular seamless copper and copper alloy tubes for general purposes. It does not apply to tubes for heat exchangers (refer to AS 1569) or tubes for air-conditioning (refer to AS 1571).

The major changes in this edition are as follows:

- (a) The compositional range for listed alloys has been removed and replaced with a reference to AS 2738.
- (b) Mechanical properties for newly included alloys have been added.
- (c) The stress corrosion cracking test listed under [Clause 14](#) has been changed from the mercurous nitrate test specified in AS 2136 to the ammonium chloride test specified in ISO 6957.
- (d) Appendix B, which covered related alloy designations, has been removed. Related alloy designations are covered in AS 2738.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a document, whereas an “informative” appendix or annex is only for information and guidance.

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NOTES

Australian Standard®

Copper and copper alloys — Seamless tubes for engineering purposes

1 Scope

This document specifies requirements for round, square and rectangular seamless copper and copper alloy tubes for general purposes. It does not apply to tubes for heat exchangers (refer to AS 1569) or tubes for air conditioning (refer to AS 1571).

NOTE Advice and recommendations on information to be supplied at the time of enquiry or order are contained in the purchasing guidelines set out in [Appendix A](#).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1391, *Metallic materials — Tensile testing — Method of test at room temperature*

AS 1515 (all parts), *Copper alloys*

AS 1696.1, *Copper—Determination of phosphorus—Spectrophotometric method*

AS 1696.2, *Copper, Part 2: Determination of copper content—Electrogravimetric method*

AS 1733, *Methods for the determination of grain size in metals*

AS 1817.1, *Metallic materials—Vickers hardness test*

AS 2614, *Copper and copper alloys—Sampling for chemical and spectrochemical analysis, and physical testing*

AS 2706, *Numerical values—Rounding and interpretation of limiting values*

AS 2738, *Copper and copper alloys—Compositions and designations of refinery products, wrought products, ingots and castings*

AS 2883, *Analysis of metals—Procedures for the setting up, calibration and standardization of atomic emission spectrometers using arc/spark discharge*

AS 3641.1, *Recommended practice for atomic emission spectrometric analysis, Part 1: Principles and techniques*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

ASTM E243, *Standard Practice for Electromagnetic (Eddy Current) Examination of Copper and Copper-Alloy Tubes*

ASTM E478, *Standard Test Methods for Chemical Analysis of Copper Alloys*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

may

indicates the existence of an option

3.2

shall

indicates that a statement is mandatory

3.3

should

indicates a recommendation

4 Designation

4.1 Alloy designation

The copper or copper alloy designation shall comprise the number of this document, i.e. AS 1572, followed by a slash and six additional characters commencing with the letter C, in accordance with the Unified Numbering System (UNS), and any additional characters in accordance with [Clauses 4.2](#) and [4.3](#).

4.2 Temper designation

The temper designation shall comprise one of the following characters:

- O = annealed (soft condition).
- ¼H = quarter-hard (intermediate work-hardened condition).
- ½H = half-hard (intermediate work-hardened condition).
- H = hard (fully work-hardened condition).

4.3 Dimension designation

The dimension designation shall comprise two or three numbers separated by multiplication signs as follows:

- (a) *Round tube* — nominal outside diameter and wall thickness.
- (b) *Square and rectangular tube* — nominal outside dimensions of two adjoining sides, and wall thickness.

EXAMPLE AS 1572-C26130-H-12.70 × 0.91.

5 Form and temper of tubes

5.1 Form

Tubes shall be supplied either in straight lengths or in coils with the ends cut clean and square. If ordered in coil form, the tubes shall be supplied in the O temper.

5.2 Temper

Tubes shall be supplied in one of the following tempers:

- (a) *O temper* — Tubes in the fully softened condition (annealed).
- (b) *¼H temper* — Tubes heat-treated or drawn to provide a fine-grained structure with an intermediate hardness (quarter hard).
- (c) *½H temper* — Tubes in an intermediate temper (half hard).