AS 1572—1985
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Australian Standard®
1572—1985

COPPER AND COPPER ALLOYS—
SEAMLESS TUBES FOR ENGINEERING PURPOSES

[Title allocated by Defence Cataloguing Authority: PIPE, METALLIC: TUBE METALLIC (Copper and Copper Alloy, Seamless, for General Purposes) ..... NSC 4710]

STANDARDS ASSOCIATION OF AUSTRALIA
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The following interests are represented on Committee MT/2:

Australian Foundry Institute

Australian Welding Institute

Confederation of Australian Industry

Copper Development Association of Australia Limited

Coppermetals Extruders Council of Australia

Department of Defence

Metropolitan Water, Sewerage and Drainage Board, N.S.W.

Telecom Australia

Universities

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AUSTRALIAN STANDARD

COPPER AND COPPER ALLOYS—
SEAMLESS TUBES FOR ENGINEERING PURPOSES

AS 1572—1985

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PREFACE

This edition of this standard was prepared under the direction of the Association's Committee on Copper and Copper Alloys by its subcommittee on general engineering tube, to supersede AS 1572—1974.

In this edition, the requirements included in AS 1570—1974, Seamless Copper Tubes for Electrical Purposes, have been introduced and AS 1570 is now withdrawn. In addition, provision has been made for tubes for oil lines, petrol lines, and similar applications previously included in AS B160—1961, Copper Tubes for Use in Refrigeration, and for Oil Lines, Petrol Lines and Similar Applications and AS B160 is also withdrawn. Screwing sizes of copper tube have also been included in this edition.

Appendix A presents purchasing guidelines, including contractual requirements at present included in the body of AS 1572—1974, and directs attention to matters requiring consideration at the time of enquiry and/or order.

In revising the standard, cognizance was taken of the following standards:

BS 2871 Copper and Copper Alloy Tubes
Part 2—Tubes for General Purposes

ISO 274 Copper Tubes of Circular Section

The standard includes preferred sizes and aligns with BS 2871, Part 2 and ISO 274 in this regard.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
COPPER AND COPPER ALLOYS—SEAMLESS TUBES FOR ENGINEERING PURPOSES

1 SCOPE. This standard specifies requirement for round, square and rectangular seamless copper and copper alloy tubes for general purposes. It does not apply to tubes for heat exchangers (see AS 1569) or tubes for airconditioning (see AS 1571).

NOTE: Guidelines to purchasers on requirements that must be specified by the purchaser and those that must be agreed at the time of enquiry and/or order are given in Appendix A.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1391	Methods for Tensile Testing of Metals
AS 1515	Methods for the Analysis of Copper Alloys
AS 1569	Copper and Copper Alloys—Seamless Tubes for Heat Exchangers
AS 1571	Copper—Seamless Tubes for Air-conditioning and Refrigeration
AS 1696	Methods for the Analysis of Copper
AS 1733	Methods for the Determination of Grain Size in Metals
AS 1817	Method for Vickers Hardness Test Part 1—Testing of Metals
AS 2136	Method for Detecting the Susceptibility of Copper and its Alloys to Stress Corrosion Cracking using the Mercurous Nitrate Test
AS 2614	Copper and Copper Alloys—Sampling for Chemical Analysis and Electrical Resistivity
AS 2706	Numerical Values—Rounding and Interpretation of Limiting Values
AS 2738	Copper and Copper Alloys—Compositions and Designations, Part 2—Wrought Products
AS K208	Methods for the Analysis of Unalloyed Copper
AS K209	Methods for the Analysis of Copper Alloys
BS 1748	Methods for the Analysis of Copper Alloys
ASTM B 111	Copper and Copper Alloy Seamless Condenser Tubes and Ferrule Stock
ASTM E 243	Electromagnetic (Eddy-current) Testing of Seamless Copper and Copper Alloy Tubes.

3 DESIGNATION.

3.1 General. The designation shall include the number of this Australian standard, i.e. AS 1572, together with the requirements of Clauses 3.2, 3.3 and 3.4.

3.2 Alloy Designation. The designation of copper and copper alloys as given in Tables 1 and 2 shall be in accordance with AS 2738.2.

3.3 Temper Designation. The temper shall be designated as 0, ¼H, ½H, or H (see Clause 4.2) and shall follow the alloy designation.

3.4 Dimensional Designation. The tubes shall be designated as follows, and this shall follow the temper designation:

Round tube—by the nominal outside diameter and thickness.

Square and rectangular tube—by the nominal outside dimensions of two adjoining sides together with thickness.

Example of designation: AS 1572/259-H/12.70 × 0.91.

4 FORM AND TEMPER OF MATERIAL ON DELIVERY.

4.1 Form. Tubes shall be supplied in straight lengths or coil and the ends shall be cut clean and square in accordance with Clause 7.2.5 (see Paragraph A1(a) of Appendix A). If ordered in coil form, the tubes shall be supplied in 0 temper.

4.2 Temper. Tubes shall be supplied in one of the following conditions of temper, and shall comply with the appropriate requirements of Table 2:

0 temper—tubes in the fully softened condition (annealed).

¼H temper—tubes heat-treated to provide a fine-grained structure with an intermediate hardness (quarter hard).

½H temper—tubes in an intermediate temper (half hard).

H temper—tubes in the as drawn and stress relieved condition (hard).

NOTE: Tubes in alloys 110 and 122 do not require a stress-relief treatment.

5 CHEMICAL COMPOSITION.

5.1 General. The copper and copper alloys shall conform to the chemical composition limits specified in Table 1.

NOTE: Rleated chemical composition specifications are given in Appendix B.

5.2 Chemical analysis. Chemical composition shall be determined on samples selected in accordance with AS 2614 by methods not less accurate than AS 1515, AS 1696, AS K208, AS K209 or BS 1748.

6 FREEDOM FROM DEFECTS. The tubes shall be clean, smooth and free from defects detrimental to their subsequent processing and end use.

Notwithstanding the fact that any tube has been passed as complying with this standard, if any faults in manufacture are revealed during subsequent processing of the tube, it may then be deemed not to comply.