AS 3795—1990

Australian Standard®

Copper alloy tube for plumbing and drainage applications

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee WS/18, Copper and Copper Alloy Tubes for Plumbing and Gasfittings. It was approved on behalf of the Council of Standards Australia on 6 July 1990 and published on 17 September 1990.

The following interests are represented on Committee WS/18:

Brisbane City Council

Engineering and Water Supply Department, S.A.

Federated Master Plumbers of Australia

Hunter Water Board

Metal Trades Industry Association of Australia

Public Works Department, N.S.W.

The Australian Gas Association

Water Authority of Western Australia

Water Board Sydney—Illawarra—Blue Mountains

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PREFACE

This Standard was prepared by the Standards Australia Committee on Copper and Copper Alloy Tubes for Plumbing and Gasfitting, in response to a request from the Major Urban Water and Sewerage Authorities of Australia, to enable the requirement for copper alloy tubes specified in SAA MP 52—1988, *Manual of Authorization Procedures for Plumbing and Drainage Products,* to be upgraded from WaterMark to StandardsMark.

In the preparation of this Standard reference was made to AS 1432—1983, *Copper tubes for water, gas and sanitation,* and AS 1572—1985, *Copper and copper alloys—Seamless tubes for engineering purposes.*

The copper alloys selected for inclusion in this Standard are dezincification resistant and hence the performance criteria for dezincification resistance are not specified.

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FOREWORD

A designer of an installation should, among other duties, evaluate the possible conditions to which copper alloy tubes will be exposed.

Copper alloy tubes should be selected with consideration to several factors including the following:

(a) The requirements of the Regulatory Authority within whose jurisdiction the tube is to be used.

(b) The working pressure to which the tubes are likely to be subjected, including pressure due to water-hammer.

(c) The maximum safe working pressure for tubes (see Appendix B).

(d) External loads that can be expected to be applied to tubes during and after installation.

(e) Stresses due to expansion and contraction.

(f) Fabrication and heating of tubes during installation.

(g) Compatibility with internal and external environments.

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Copper alloy tubes for plumbing and drainage applications

1 SCOPE This Standard specifies requirements for round seamless copper alloy tubes intended for use in pressure and non-pressure plumbing and drainage applications:

(a) Brass tubes intended primarily for sanitary plumbing and stormwater drainage services.

(b) Copper nickel tubes intended primarily for water services.

NOTES:

1 Clause 4 gives classification of tubes covered by this Standard.

2. Guidelines to purchasers on information that should be supplied at the time of enquiry or order are detailed in Appendix A.

3. Safe working pressure and testing pressure for installed copper alloy tubes are given in Appendix B.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard.

AS
1135 SAA Non-ferrous Pressure Piping Code

1349 Bourdon tube pressure and vacuum gauges

1572 Copper and copper alloys—Seamless tubes for engineering purposes

1817 Method for Vickers hardness test
1817.1 Part 1: Testing of metals

2084 Non-destructive testing—Eddy current testing of metal tubes

2136 Method for detecting the susceptibility of copper and its alloys to stress corrosion cracking using the mercurous nitrate test

2706 Numerical values—Rounding and interpretation of limiting values

2738 Copper and copper alloys, compositions and designations
2738.2 Part 2: Wrought products

3500 National Plumbing and Drainage Code
3500.0 Part 0: Glossary of terms

3 DEFINITIONS For the purposes of this Standard, the definitions given in AS 3500.0 and those below apply.

3.1 Mean outside diameter—half the sum of two outside diameters measured at right angles to each other on one cross-section of the tube.

3.2 Ovality—the difference between the maximum outside diameter and the minimum outside diameter measured on one cross section of the tube.

4 CLASSIFICATION Tubes are classified as follows:

(a) Type B brass tube as given in Table 1.

(b) Type D brass tube as given in Table 2.

(c) Type D copper nickel tube as given in Table 3.

5 DESIGNATION Tubes shall be designated by—

(a) the number of this Standard (AS 3795);

(b) the copper alloy, brass or copper nickel (see Table 4);

(c) the nominal size (see Tables 1, 2 and 3); and

(d) the thickness type by letter (B or D).

6 INTERPRETATION OF SPECIFIED LIMITING VALUES For the purpose of assessing compliance with this Standard, the specified limiting values herein shall be interpreted in accordance with the 'rounding method' specified in AS 2706, i.e. the observed value shall be rounded to the same number of figures as in the specified limiting value, and then compared with the specified limiting value. For example, for specified limiting values of 12, 12.0 and 12.00, the observed value would be rounded respectively to the nearest 1,0.1 or 0.01 respectively.

7 CHEMICAL COMPOSITION Tubes shall comply with chemical composition given in Table 4.

NOTE: Chemical composition is to be determined by recognized chemical analysis methods of sufficient accuracy and reproducibility to identify material which does not comply with this Standard.