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AS 1432—1990

Australian Standard®

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**Copper tubes for plumbing,  
gasfitting and drainage applications**

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

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The following interests are represented on Committee WS/18:

Brisbane City Council  
Engineering and Water Supply Department, SA  
Federated Master Plumbers of Australia  
Hunter Water Board  
Metal Trades Industry Association of Australia  
Public Works Department, NSW  
The Australian Gas Association  
Water Authority of Western Australia  
Water Board Sydney—Illawarra—Blue Mountains

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## Australian Standard®

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### **Copper tubes for plumbing, gasfitting and drainage applications**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Copper and Copper Alloy Tubes for Plumbing, and Gasfitting to supersede AS 1432—1983 *Copper tubes for water, gas and sanitation*. The principal changes in this edition are—

- (a) deletion of the selection and preparation of test samples and retest clauses in accordance with Standards Australia policy to remove quality assurance requirements from all product standards;
- (b) deletion of the drifting test;
- (c) inclusion of a bendable temper tubing; and
- (d) introduction of colour coding.

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## FOREWORD

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

Copper tubes should be selected with consideration of 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.

## STANDARDS AUSTRALIA

## Australian Standard

## Copper tubes for plumbing, gasfitting and drainage applications

**1 SCOPE** This Standard specifies requirements for round seamless copper tubes intended for use in pressure and non-pressure plumbing, gasfitting, and drainage applications.

**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 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
- 1817 Method for Vickers hardness test
- 1817.1 Part 1: Testing of metals
- 2084 Non-destructive testing—Eddy current testing of metal tubes
- 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 purpose 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.

**3.3 Bendable temper**—a temper of adequate strength to facilitate the handling of tube in straight lengths but with sufficient ductility to enable bends with minimum centreline radii of 45 mm, 60 mm, and 85 mm for nominal sizes DN 15, DN 18, and DN 20 respectively to be made without local annealing.

**4 CLASSIFICATION** Tubes are classified into four thickness types:

- (a) Type A as given in Table 1.
- (b) Type B as given in Table 2.
- (c) Type C as given in Table 3.
- (d) Type D as given in Table 4.

**5 DESIGNATION** Tubes shall be designated by—

- (a) the number of this Standard (AS 1432);
- (b) the nominal size (see Tables 1 to 4 inclusive); and
- (c) the thickness type by letter (A, B, C 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 values would be rounded respectively to the nearest 1, 0.1 or 0.01 respectively.

**7 CHEMICAL COMPOSITION** Tubes shall comply with the chemical composition given in Table 5.

**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.