

Australian/New Zealand Standard™

Welding and brazing—Filler metals

Part 2: Filler metal for welding

AS/NZS 1167.2:1999

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Australian Chamber of Commerce and Industry
Australian Institute of Steel Construction
Bureau of Steel Manufacturers of Australia
Lloyd's Register of Shipping
New Zealand Manufacturers Federation
Welding Technology Institute of Australia

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Part 2: Filler metal for welding

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD/2, Welding Consumables, to supersede AS 1167.2-1986.

The objective of this Standard is to specify the requirements for ferrous and non-ferrous, fluxed or unfluxed filler metals for welding. It includes requirements for chemical composition and analysis, sizes, packing, marking and storage. The methods of chemical analysis are in accordance with those in the ANSI/ASTM Standards.

The objective of this edition is to update the Standard and bring it in line with current AWSI/AWS relevant Standards.

The designation system adopted is basically in line with the ANSI/AWS classification. It is also relevant that most of the alloys designated are not manufactured in Australia or New Zealand.

In preparing this edition cognizance has been taken of ISO 544 *Filler materials for manual welding—Size requirements* and ISO 864 *Arc Welding—Solid and tubular cored wires which deposit carbon and carbon manganese steel—Dimensions of wires, spools, rims and coils*.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Welding and brazing—Filler metals**Part 2: Filler metal for welding**

1 SCOPE This Standard specifies requirements for ferrous and non-ferrous, fluxed or unfluxed filler metals for welding (excluding filler metals used as electrodes) in the form of rod, wire, strip, formed shapes or powder.

Fluxes, when used, are assumed to be non-additive and are not covered by this Standard.

NOTE: A guide to the applications of filler metals is given in Appendix A.

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

AS

- 1167 Welding and brazing—Filler metals
- 1167.1 Part 1: Filler metal for brazing and braze welding
- 1674 Safety in welding and allied processes
- 1674.1 Part 1: Fire precautions
- 1674.2 Part 2: Electrical
- 2738 Copper and copper alloys, compositions and designations
- 2738.2 Part 2: Wrought products
- 2812 Welding, brazing and cutting of metals—Glossary of terms

AS/NZS

- 2717 Welding—Electrodes—Gas metal arc
- 2717.1 Part 1: Ferritic steel electrodes

WTIA

Technical Note 7—Health and safety in welding

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2812 apply.

4 CLASSIFICATION AND DESIGNATION

4.1 Basis of classification Filler metals shall be classified on the basis of their chemical composition.

4.2 Designation The designation of the filler metal shall be in accordance with Tables 3 to 9, as appropriate.

5 CHEMICAL COMPOSITION AND ANALYSIS The chemical composition of the filler metal, determined in accordance with the relevant methods of the appropriate volume of the current book of ANSI/ASTM Standards, or in accordance with other methods not less accurate, shall conform to Tables 3, 4, 5, 6, 7, 8 and 9 for the designation concerned.

6 IDENTIFICATION OF FILLER RODS AND WIRES Each cut length of fluxed or unfluxed filler rod should be clearly marked with at least one legible imprint or overprint of the alloy designation of the filler rod (e.g. RB2L) or with a legible colour identification at one end of each cut length, or a combination of both.

Unfluxed wire in coils shall be legibly identified at each end of each coil or, if supplied in special containers such as packets, spools or mandrels, they shall be marked with the designation of the filler rod.

7 FORM AND FINISH

7.1 General This Standard specifies form and finish requirements for filler metal in the form of wire and rod only.

NOTE: For forms other than rods and wires, the required form and size may be by agreement between purchaser and supplier.

7.2 Filler rods and wires

7.2.1 Diameter The tolerances in Table 1 shall be allowed on the diameter of the rods and wires excluding cast iron rods (see Clause 7.3).

7.2.2 Length Cut length of filler rods excluding cast iron rods (see Clause 7.3) should be as shown in Table 2.

7.2.3 Finish Filler rods and wires shall have a smooth finish, be free from slivers, depressions, seams, laps, scratches, scale, rust or any other defects, and from other foreign matter including drawing lubricant that would adversely affect the weld metal properties.

7.3 Cast iron filler rods Cast iron filler rods may be supplied in any convenient form.

TABLE 1
TOLERANCES ON DIAMETERS OF FILLER
RODS AND WIRES

Diameter mm	Tolerance on diameter of filler wires in coils mm	Tolerance on diameter of filler rod in cut length
≤1.6	+0.01, -0.04	±3 percent of diameter
>1.6	+0.01, -0.07	(maximum ±0.1 mm)

TABLE 2
CUT LENGTHS OF FILLER RODS

Length mm	Tolerance on length mm
500 750 915 1000	±5