

Australian Standard[®]

**Non-destructive testing—Ultrasonic
testing of fusion welded joints in
carbon and low alloy steel**

This Australian Standard was prepared by Committee MT/7, Non-destructive Testing of Metals and Materials. It was approved on behalf of the Council of Standards Australia on 16 February 1994 and published on 16 May 1994.

The following interests are represented on Committee MT/7:

Australian Institute for Non-Destructive Testing
Australian Nuclear Science and Technology Organization
Australian Pipeline Industry Association
Austroads
Bureau of Steel Manufacturers of Australia
Department of Defence
Electricity Supply Association of Australia
Institute of Australian Foundrymen, N.S.W. Division
Metal Trades Industry Association of Australia
National Association of Testing Authorities, Australia
Railways of Australia Committee
Society of Automotive Engineers, Australasia
Welding Technology Institute of Australia
WorkCover Authority, N.S.W.

Additional interests participating in preparation of Standard:

Division of Applied Physics, CSIRO
Non-destructive testing contractors and consulting organizations
Royal Melbourne Institute of Technology
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PREFACE

This Standard was prepared under the direction of the Multitechnics Standards Policy Board by the Standards Australia Committee on Non-destructive Testing of Metals and Materials, to supersede AS 2207—1980, *Methods for the ultrasonic testing of fusion welded joints in steel*.

The format of this edition has been changed to align more closely with recently published Standards on ultrasonic testing of metallic materials. The five levels of sensitivity specified in the 1980 edition have been reduced to four because the requirements for the sensitivity Level No. 5 were not specific and were subject to contractual agreement.

In this edition the testing of stainless steels is not covered, as it requires the use of specialized techniques and equipment.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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STANDARDS AUSTRALIA

Australian Standard

**Non-destructive testing—Ultrasonic testing
of fusion welded joints in carbon and low alloy steel**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out methods and requirements for the manual ultrasonic testing of full or partial penetration fusion welded joints in carbon and low alloy ferritic steels, 6 mm or greater in thickness, using A-scan presentation and employing four sensitivity levels.

This Standard does not cover the testing of stainless steels.

It does not cover the testing of longitudinal welds when—

- (a) the radius of curvature of fabrications is less than 125 mm; or
- (b) for tubular fabrications having an outside diameter exceeding 250 mm, the ratio of thickness to outside diameter exceeds 0.22.

NOTE: Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in the purchasing guidelines set out in Appendix A.

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

AS

- 1101 Graphical symbols for general engineering
- 1101.3 Part 3: Welding and non-destructive examination
- 1929 Non-destructive testing—Glossary of terms
- 2083 Calibration blocks and their methods of use in ultrasonic testing
- 2536 Surface texture
- 2812 Welding, brazing and cutting of metals—Glossary of terms
- 3669 Non-destructive testing—Qualification and registration of personnel—Aerospace
- 3998 Non-destructive testing—Qualification and certification of personnel—General engineering

1.3 DEFINITIONS For the purpose of this Standard, the terms and definitions given in AS 1929 apply (see also Appendix B for terms, symbols and notations used in welding technology).