Australian Standard™

Non-destructive testing—Magnetic particle testing of ferromagnetic products, components and structures

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 29 May 1998 and published on 5 September 1998.

The following interests are represented on Committee MT/7:

Australasian Railway Association

Australian Aerospace Non-destructive Testing Committee

Australian Institute for Non-Destructive Testing

Australian Nuclear Science and Technology Organisation

Australian Pipeline Industry Association

Bureau of Steel Manufacturers of Australia

Electricity Supply Association of Australia

Industrial Research Limited New Zealand

Institution of Engineers Australia

Metal Trades Industry Association of Australia

National Association of Testing Authorities, Australia

New Zealand Non-destructive Testing Association

Society of Automotive Engineers, Australasia

Victorian WorkCover Authority

Welding Technology Institute of Australia

WorkCover New South Wales

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MT/7, Non-destructive Testing of Metals and Materials, to supersede AS 1171—1976, *Methods for magnetic particle testing of ferromagnetic products and components*.

This Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian Standard.

The objective of this revision is to upgrade the requirements for the magnetic particle testing of ferromagnetic materials for the detection of surface and near-surface discontinuities.

In preparing this Standard, the Committee took cognizance of BS 6072:1981, *Method for magnetic particle flaw detection*, and ASTM E 1444—94a, *Practice for magnetic particle examination*. This Standard now refers to ASTM E 1444 for the requirements for magnetic particle testing media instead of AS 2085—1977, *Magnetic particle testing media*.

Currently there are no International (ISO) Standards that cover the general practice of magnetic particle testing.

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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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for magnetic particle testing for the detection of surface and near-surface discontinuities in all types of ferromagnetic products, components and structures. It also specifies requirements for magnetic particle testing process control. Requirements for materials (media) are specified in ASTM E 1444.

NOTES:

1 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry and order are given in Appendix A.

2 This Standard does not indicate the method to be used for the testing of any particular product. The method and the appropriate acceptance/rejection criteria should be specified in the relevant product Standard or application code.

3 The unit symbols used in this Standard are defined in AS 1000.

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

AS

1000 The International System of Units (SI) and its application

1239 Steel—Schedule of tool steel compositions

1442 Carbon steels and carbon-manganese steels—Hot-rolled bars and semifinished products

1929 Non-destructive testing—Glossary of terms

2536 Surface texture

3000 Electrical installations—Buildings, structures and premises (known as the SAA Wiring Rules)

3669 Non-destructive testing—Qualification and registration of personnel—Aerospace

3998 Non-destructive testing—Qualification and certification of personnel—General engineering

AS/NZS

3100 Approval and test specification—General requirements for electrical equipment

ASTM

E 1444 Practice for magnetic particle examination

BS

5044 Specification for contrast aid paints used in magnetic particle flaw detection

1.3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 1929 apply.

NOTE: The term ‘product’ in this Standard is taken to include component, test piece, work piece or structure.