AS/NZS ISO 3834.1:2008
ISO 3834-1:2005
Reconfirmed 2018

Australian/New Zealand Standard™

Quality requirements for fusion welding of metallic materials

Part 1: Criteria for the selection of the appropriate level of quality requirements

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee WD-003, Welding of Structures. It was approved on behalf of the Council of Standards Australia on 1 August 2008 and on behalf of the Council of Standards New Zealand on 6 August 2008.
This Standard was published on 22 September 2008.

The following are represented on Committee WD-003:

AUSTROADS
Australian Chamber of Commerce and Industry
Australian Industry Group
Bureau of Steel Manufacturers of Australia
Engineers Australia
New Zealand Heavy Engineering Research Association
New Zealand Non-Destructive Testing Association
Steel Reinforcement Institute of Australia
University of Sydney
Welding Technology Institute of Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 08117.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF

AS/NZS ISO 3834.1:2008

Quality requirements for fusion welding of metallic materials
Part 1: Criteria for the selection of the appropriate level of quality requirements

RECONFIRMATION NOTICE

Technical Committee WD-003 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 3 May 2018.

Approved for reconfirmation in New Zealand on behalf of the New Zealand Standards Approval Board on 26 June 2018.

The following are represented on Technical Committee WD-003:

Australasian Corrosion Association
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Association
Australian Steel Institute
AUSTROADS
Bureau of Steel Manufacturers of Australia
Energy Networks Australia
New Zealand Heavy Engineering Research Association
New Zealand Non-Destructive Testing Association
Steel Reinforcement Institute of Australia
TAFE NSW
The University of Sydney
Welds Australia

Australian/New Zealand Standard™

Quality requirements for fusion welding of metallic materials

Part 1: Criteria for the selection of the appropriate level of quality requirements

First published as AS/NZS ISO 3834.1:1999.
Second edition 2008.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 8901 3

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD-003, Welding of Structures, to supersede AS/NZS ISO 3834.1:1999.

The objective of this AS/NZS ISO 3834 series is to specify quality requirements for fusion welding of metallic materials and to provide guidance on quality management systems for fabrication, manufacture, construction and maintenance using such processes and materials.

This Standard is identical with, and has been reproduced from, ISO 3834-1:2005, *Quality requirements for fusion welding of metallic materials* Part 1: *Criteria for the selection of the appropriate level of quality requirements*.

This Standard is one of a series dealing with quality requirements for welding purposes. The series consists of the following Standards:

AS/NZS ISO
3834 Quality requirements for fusion welding of metallic materials
3834.1 Part 1: Criteria for the selection of the appropriate level of quality requirements (this Standard)
3834.2 Part 2: Comprehensive quality requirements
3834.3 Part 3: Standards quality requirements
3834.4 Part 4: Elementary quality requirements
3835.5 Part 5: Documents with which it is necessary to conform to claim conformity to the quality requirements of AS/NZS ISO 3834.2, AS/NZS ISO 3834.3 or AS/NZS ISO 3834.4

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source test 'ISO 3834-1' should read 'AS/NZS ISO 3834.1'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
ISO		AS/NZS ISO	
3834	Quality requirements for fusion welding of metallic materials	3834	Quality requirements for fusion welding of metallic materials
3834-2	Part 2: Comprehensive quality requirements	3834.2	Part 2: Comprehensive quality requirements
3834-3	Part 3: Standards quality requirements	3834.3	Part 3: Standards quality requirements
3834-4	Part 4: Elementary quality requirements	3834.4	Part 4: Elementary quality requirements
3834-5	Part 5: Documents with which it is necessary to conform to claim conformity to the quality requirements of ISO 3834-2, ISO 3834-3 or ISO 3834-4	3834.5	Part 5: Documents with which it is necessary to conform to claim conformity to the quality requirements of AS/NZS ISO 3834.2, AS/NZS ISO 3834.3 or AS/NZS ISO 3834.4

9000	Quality management systems— Fundamentals and vocabulary	9000	Quality management systems Fundamentals and vocabulary
9001	Quality management systems— Requirements	9001	Quality management systems Requirements

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a Standard, whereas an informative annex is only for information and guidance.

CONTENTS

Page

INTRODUCTION

Processes such as fusion welding are widely used to manufacture many products. In some companies, they are the key feature of production. Products may range from simple to complex. Examples include pressure vessels, domestic and agricultural equipment, cranes, bridges, transport vehicles and other items.

These processes exert a profound influence on the cost of manufacture and quality of the product. It is important, therefore, to ensure that these processes are carried out in the most effective way and that appropriate control is exercised over all aspects of the operation.

It is emphasised that ISO 3834 is not a quality management system standard replacing ISO 9001:2000. However, it can be a useful tool when ISO 9001:2000 is applied by manufacturers.

Specification of quality requirements for welding processes is important because the quality of these processes cannot be readily verified. Therefore, they are considered to be special processes as noted by ISO 9000:2000.

Quality cannot be inspected into a product, it has to be built in. Even the most extensive and sophisticated non-destructive testing does not improve the quality of the product.

For products to be free from serious problems in production and in service, it is necessary to provide controls, from the design phase, through material selection, into manufacture and subsequent inspection. For example, poor design may create serious and costly difficulties in the workshop, on site, or in service. Incorrect material selection may result in problems, such as cracking in welded joints.

To ensure sound and effective manufacturing, management needs to understand and appreciate the sources of potential trouble and to implement appropriate procedures for their control.

ISO 3834 identifies measures that are applicable for different situations. Typically, they may be applied in the following circumstances:

— in contractual situations: specification of welding quality requirements;

— by manufacturers: establishment and maintenance of welding quality requirements;

— by committees drafting manufacturing codes or application standards: specification of welding quality requirements;

— by organizations assessing welding quality performance, e.g. third parties, customers, or manufacturers.

ISO 3834 can be used by internal and external organizations, including certification bodies, to assess the manufacturer's ability to meet customer, regulatory or the manufacturer's own requirements.

AUSTRALIAN/NEW ZEALAND STANDARD

Quality requirements for fusion welding of metallic materials

Part 1:
Criteria for the selection of the appropriate level of quality requirements

1 Scope

This part of ISO 3834 provides a general outline of ISO 3834 and criteria to be taken into account for the selection of the appropriate level of quality requirements for fusion welding of metallic materials, among the three levels specified in ISO 3834-2 [3], ISO 3834-3 [4] and ISO 3834-4 [5]. It applies to manufacturing, both in workshops and at field installation sites.

NOTE 1 ISO 3834-2, ISO 3834-3 and ISO 3834-4 provide complete sets of quality requirements for process control related to all fusion welding processes (for each process separately or in combination as specified). ISO 3834-5 specifies the documents with which it is necessary to conform to claim conformity to the quality requirements of ISO 3834-2, ISO 3834-3 or ISO 3834-4.

This part of ISO 3834 does not specify requirements for a total quality management system. However, Clause 6 identifies quality management system elements where their inclusion will complement ISO 3834.

NOTE 2 ISO 3834-2, ISO 3834-3 and ISO 3834-4 may be used on their own by a manufacturer or in conjunction with ISO 9001:2000.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9000:2000, *Quality management systems — Fundamentals and vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000:2000 and the following apply.

3.1
design specification
requirements for products specified by customers or by the organization in anticipation of customer requirements, or by regulation

NOTE The requirements for products and in some cases associated processes can be contained in, for example, technical specifications, product standards, process standards, contractual agreements and regulatory requirements.

3.2
qualified person
person whose competence and knowledge have been obtained by education, training and/or relevant practical experience