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Quality requirements for fusion welding of metallic materials —

Part 2: Comprehensive quality requirements

*Exigences de qualité en soudage par fusion des matériaux
métalliques —*

Partie 2: Exigences de qualité complète



Reference number
ISO 3834-2:2005(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3834-2 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*.

This second edition cancels and replaces the first edition (ISO 3834-2:1994), which has been technically revised.

ISO 3834 consists of the following parts, under the general title *Quality requirements for fusion welding of metallic materials*:

- *Part 1: Criteria for the selection of the appropriate level of quality requirements*
- *Part 2: Comprehensive quality requirements*
- *Part 3: Standard quality requirements*
- *Part 4: Elementary quality requirements*
- *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*

NOTE A Technical Report ISO/TR 3834-6, *Quality requirements for fusion welding of metallic materials — Part 6: Guidance on implementing ISO 3834* is being prepared.

Requests for official interpretations of any aspect of this part of ISO 3834 should be directed to the Secretariat of ISO/TC 44/SC 10 via your national standards body, a complete listing which can be found at <http://www.iso.org>.

Quality requirements for fusion welding of metallic materials —

Part 2: Comprehensive quality requirements

1 Scope

This part of ISO 3834 defines comprehensive quality requirements for fusion welding of metallic materials both in workshops and at field installation sites.

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 3834-1, *Quality requirements for fusion welding of metallic materials — Part 1: Criteria for the selection of the appropriate level of quality requirements*

ISO 3834-5:2005, *Quality requirements for fusion welding of metallic materials — 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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3834-1 apply.

4 Use of this part of ISO 3834

For general information on the use of this part of ISO 3834, ISO 3834-1 shall be used.

In order to fulfil the quality requirements given in this part of ISO 3834, the conformity to relevant documents given in ISO 3834-5 shall be verified.

In certain situations, e.g. where manufacturing is more suited to ISO 3834-3 or ISO 3834-4, or where particular operations, such as heat treatment, are not undertaken, the requirements detailed in this part of ISO 3834 may be selectively amended or deleted.

Otherwise, the requirements contained within this part of ISO 3834 shall be adopted in full.

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5 Review of requirements and technical review

5.1 General

The manufacturer shall review the contractual requirements and any other requirements, together with any technical data provided by the purchaser or in-house data when the construction is designed by the manufacturer. The manufacturer shall establish that all information necessary to carry out the manufacturing operations is complete and available prior to the commencement of the work. The manufacturer shall affirm its capability to meet all requirements and shall ensure adequate planning of all quality-related activities.

The review of requirements is carried out by the manufacturer to verify that the work content is within its capability to perform, that sufficient resources are available to achieve delivery schedules and that documentation is clear and unambiguous. The manufacturer shall ensure that any variations between the contract and any previous quotation are identified and the purchaser notified of any programme, cost or engineering changes that may result.

Items in 5.2 are typically considered at or before the time of the review of requirements review. Items in 5.3 usually form part of the technical review and are considered during the initial planning stage.

When a contract does not exist, e.g. items made for stock, the manufacturer is required to take into consideration the requirements of 5.2 while carrying out the technical review (see 5.3).

5.2 Review of requirements

Aspects to be considered shall include the following:

- a) the product standard to be used, together with any supplementary requirements;
- b) statutory and regulatory requirements;
- c) any additional requirement determined by the manufacturer;
- d) the capability of the manufacturer to meet the prescribed requirements.

5.3 Technical review

Technical requirements to be considered shall include the following:

- a) parent material(s) specification and welded joint properties;
- b) quality and acceptance requirements for welds;
- c) location, accessibility and sequence of welds, including accessibility for inspection and for non-destructive testing;
- d) the specification of welding procedures, non-destructive testing procedures and heat-treatment procedures;
- e) the approach to be used for the qualification of welding procedures ;
- f) the qualification of personnel;
- g) selection, identification and/or traceability (e.g. for materials, welds);
- h) quality-control arrangements, including any involvement of an independent inspection body;
- i) inspection and testing;