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BS EN ISO 3834

Why is it important, and what's in it for you

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EN ISO 3834

The TWI scheme is designed to allow welding fabricators to demonstrate compliance with EN ISO 3834 Quality Requirements for Fusion Welding of Metallic Materials and also satisfies EWF/IIW criteria for EN ISO 3834 certification.

The EN ISO 3834 certification scheme focuses specifically on the company's welding activities

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EN ISO 3834 Parts 1 to 6 (2005)

EN ISO 3834 Parts 1 to 6 (2005)
Quality Requirements
for
Fusion Welding of Metallic Materials

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EN ISO 3834

Quality requirements for fusion welding of metallic materials

- Part 1: Criteria for selection and use
- Part 2: Comprehensive quality requirements
- Part 3: Standard quality requirements
- Part 4: Elementary quality requirements
- Part 5: Normative references for the requirements of ISO 3834-2. ISO 3834-3 and ISO 3834-4

ISO 3834 Part 6: Guidance on implementing ISO 3834 Defines the requirements for the processes associated with welding to ensure quality in welding is achieved

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ISO 3834-6
(Guidance on implementing ISO 3834)

This document should be recognised as a guide for manufacturers implementing ISO 3834 and is not to be used as a requirement for company assessment

ISO 3834-6 identifies procedures for the control of welding activities, it states may have been found useful by some manufacturers.

- It notes that the procedures may be informal (not specified in writing) or described in written specifications.

- For certification purposes, the minimum requirements of ISO 3834 augmented by the requirements of EA-6/02 need to be in place. ea-6-02-m.pdf

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Selecting the ISO 3834 Requirement Part

ISO 3834 may be applied in a variety of situations.

The manufacturer selects one of the three Parts (2, 3 or 4) based on the following criteria

- the extent and significance of safety critical products
- the complexity of manufacture
- the range of products manufactured
- the range of different materials used
- the extent to which metallurgical problems may occur
- the extent fabrication imperfections affect performance

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Selecting the ISO 3834 Requirement Part

There is no specific guidance .

If it is not already specified in the product application standard, it is left to the client or the manufacturer to decide which requirements part of the standard should be adopted

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Selecting the ISO 3834 Requirement Part

As an unofficial guide, the following may be adopted

Part 2 is relevant for specialist welding fabricators where the welding technology, materials and contractual requirements are technically demanding and vary from contract to contract

Part 3 is appropriate in situations where the welding technology and materials used are technically demanding but the variety and range of product types is restricted

Part 4 would apply to companies using welding as an ancillary process. The materials, processes, designs and configurations would be simple and largely repetitive

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Normative References

ISO 3834-5 identifies the ISO standards that provide compliance with parts 2, 3 and 4

Overview_fusion_welding_standards.pdf

- However, alternative standards may be adopted provided they form part of, or are called up as normative references, in the product standard used by the manufacturer

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Alternative Normative References

Where a manufacturer uses supporting standards other than those given in ISO 3834-5, then the manufacturer has to demonstrate that they provide equivalent technical conditions.

This has to be documented.

It should be noted the use of alternative standards is only permitted when these standards are referenced in the product standards for items being fabricated by the manufacturer

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Alternative Normative References

For example if you are working to ASME IX

i.e. welding procedures, welder qualifications

Your NDT procedures and operators MUST be certified to ASNT

Note! Or alternative certification as specified by the client

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Quality Management Systems

- ISO 3834 does not specifically require manufacturers to implement a quality management system.
- However, ISO 3834-1 identifies a number of elements that a manufacturer may implement to strengthen its ISO 3834 control system.
- What are these elements??

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Quality Management Systems

These elements are:

- Control of documents and records
- Management responsibility
- Provision of resources
- Competence, awareness ant training of personnel
- Planning of product realisation
- Determination of requirements related to the product
- Review of requirements related to the product
- Purchasing
- Validation of processes
- Customer property
- Internal audit
- Monitoring and measurement of product

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Key Technical Aspects of ISO 3834; Part 2

- Review of requirements
- Technical review
- Subcontracting
- Welding personnel – welders and welding operators
- Welding coordination personnel
- Inspection and testing personnel
- Production and testing equipment
- Description of equipment
- Suitability of equipment
- New equipment
- Equipment maintenance
- Production planning
- Welding procedure specifications

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Key Technical Aspects of ISO 3834; Part 2

- Qualification of welding procedures
- Work instructions
- Procedures for the preparation and control of documents
- Welding consumables: batch testing, storage and control
- Storage of parent materials
- Post weld heat treatment
- Inspection and testing
- Inspection and test status
- Non-conformance and corrective actions
- Calibration and validation of measuring, inspection and testing equipment
- Identification and traceability and Quality records

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Documentation

Whilst, the need for formal control documentation in ISO3834 is limited and relates only to document control and the contract and product records required, the EWF Regulations and European co-operation for Accreditation requirements (EA-6/02) are more rigorous.

These bodies expect written procedures for:

- How the manufacturer reviews the contract
- Coordination to be in accordance with ISO 14731
- Ensuring subcontracted activities comply with contract
- Maintenance and calibration of production equipment
- The control of welding consumables
- Storage of parent materials
- Identifying non-conformance and remedial activity
- Product identification and traceability

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Typical Audit Activities in Fabrication Shops

- Material store
- Welding consumable store
- Electrode baking
- Welding processes
- WPS application
- Qualified welders
- Operable welding equipment
- Material identification
- Description of facilities
- Inspection status
- Nonconforming product
- Heat treatment

- Weld specification requirements
- Drawings
- Weld appearance
- Weld quality
- Weld dimensions
- Weld checks
- Visual inspection
- Quality plans
- Manufacturing instructions
- Inspection plans
- Route cards
- Production records

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So What's in it for me

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Reasons for using ISO 3834

- Incorporation of ISO 3834 in product standards
- Utilisation of the normative references in ISO 3834
- Structured documentation and quality systems
- Establishing the level of quality required
- All aspects of welding reviewed for best practice
- Ensuring satisfactory control of welder certification

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Reasons for using ISO 3834

Compliance with specific parts of EN ISO 3834 is being made a requirement in a number of European product standards, e.g.:

- EN 13445: 2002 Unfired pressure vessels
- EN 15085: Railway applications – Welding of railway vehicles and components
- EN 1090 Execution of steel structures
- EN 12732: 2000 Gas supply systems –Welding steel pipework – Functional requirements
- EN 12952: 2001 Water tube boilers and auxiliary installations

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Reasons for using ISO 3834

- A system audited by competent welding Engineers
- Structured requirements review and technical review
- Robust control of your Subcontracted activities
- RWC Interviewed as competent for the role
- A system of control of Equipment Calibration and Validation
- Identification and traceability of materials

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The Benefits for Certificated Companies

- Clear, high profile independent verification of compliance with EN ISO 3834
- Independent confirmation of competence for its welding and fabricating capabilities and staff in a defined scope
- Welding quality management and fabrication capability assessments are carried out by specialist assessors
- Increased national and international business potential through demonstrated compliance with internationally recognised welding quality requirements

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The Benefits for Certificated Companies

- European and International Standards have a profound effect on manufacturing and fabricating companies.

- Many companies have achieved certification to ISO 9001. But where significant use is made of a special process like WELDING, such certification is unlikely to provide the required demonstration of capability of the company to manufacture products of the required quality.

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The Benefits for Certificated Companies

- EN ISO 3834 can overcome this shortfall and boost the manufacturing company's ability to sell its products in both domestic and overseas markets.

- Independent certification to EN ISO 3834 benefits manufacturers by providing an authoritative third party statement of commercial value. Certification can be achieved alongside an ISO 9001 certification or it can stand alone. The stand-alone option may be attractive to companies in which the welding operations are simple.
- People are the key to EN ISO 3834

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The Benefits for Certificated Companies Accredited Scheme

Backed by The Welding Institute (TWI), TWI Certification Ltd offers the only scheme of its kind in the UK that is authorised for EN ISO 3834 certification by the European Federation for Welding, Joining and Cutting (EWF).

The Scheme is also accredited by the United Kingdom Accreditation Service (UKAS) and is called the Welding Fabricator Certification Scheme.

- For further details please visit the following web pages:
- http://www.iso3834.org
- Companies that have received certification are listed on the EWF website at www.ewf.be If you want to open the door to wider recognition and greater business success, contact us now!

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Certificates

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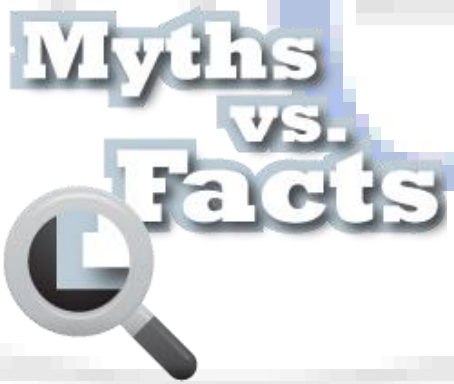
Responsible Welding Coordinator

- Confirmation as an RWC can only be made as a result of a formal manufacturer assessment
- Interviewed to understand how you apply your knowledge to the role and responsibilities you have been allocated and how you discharge those responsibilities relative to the role of RWC.
- Chris Eady will now explain the Who, What and Why? Busting the Myths



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End of Presentation
Thank you for your participation

Any Questions?

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