

Compliance through Competence

The role of certification in welding coordination

OSWVC-TT Briefing

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Customer Expectations

Products and Services will be delivered:

- **Fit-for-purpose**
- **Safe to use**
- **and remain so for specified lives**



Confusion

EN 1090

ISO 3834

RWC

FPC

Certified

Qualified

ISO 14731

IWE

ISO 9001

Competent



Compliance

EN 1090

ISO 3834

RWC

FPC

Certified

Qualified

ISO 14731

IWE

ISO 9001

Competent



Compliance

Competence requirements
for compliance with

ISO 3834

Quality requirements for fusion welding of
metallic materials



What competence isn't?

Lack of competence \neq Incompetence



What is competence?

**Demonstrated personal attributes
and demonstrated ability
to apply knowledge and skills**

ISO 19011:2002



ISO 9001:2008 on competence

Clause 6.2.1: Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience.

**Lack of competence = education need or,
training need or,
practice need or,
experience need**



ISO 9001:2008 on competence

Clause 6.2.1: Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience.

NOTE Conformity to product requirements can be affected directly or indirectly by personnel performing any task within the quality management system.



ISO 9001:2008 on competence

Clause 6.2.2: The organization shall:

- a) determine the necessary competence for personnel performing work affecting conformity to product requirements,**
- b) where applicable, provide training or take other actions to achieve the necessary competence,**
- c) evaluate the effectiveness of the actions taken,**
- d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and**
- e) maintain appropriate records of education, training, skills and experience.**



Competence Management

Job Role A	Education	Training	Experience	OJT/Famil
	Qualification X	Course 1	>2 yrs as B	Induction
				QHSAW
				1 mth Supervised



Competence Management

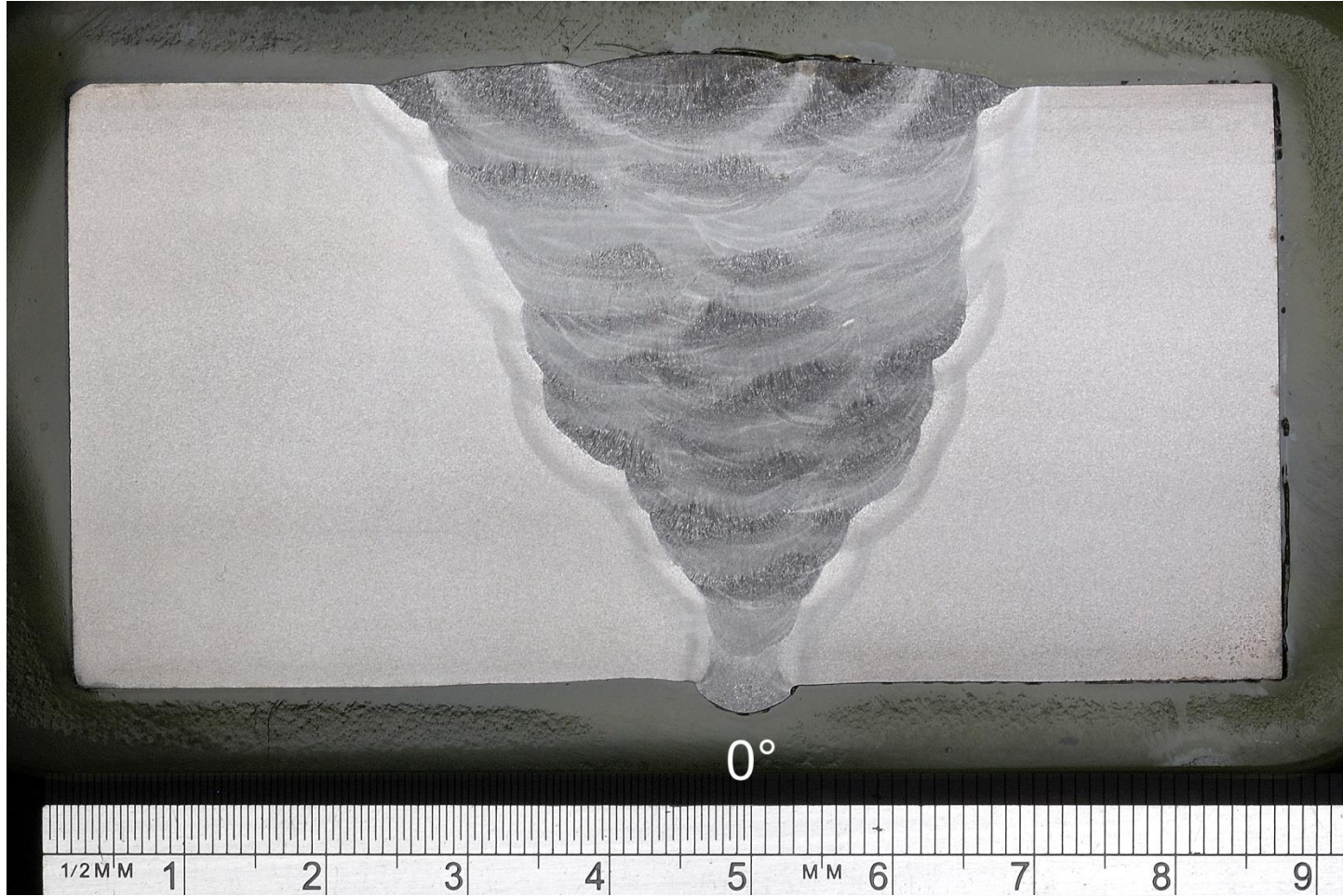
Welder	Education	Training	Experience	OJT/Famil
	Secondary School	Vocational Training	>1 yr welding	Induction QHSAW EN 287-1/ISO 9606-1 WQT
	Secondary School	Welding Apprenticeship		Induction QHSAW EN 287-1/ISO 9606-1 WQT
	Secondary School	IW Diploma		Induction QHSAW

“But the test of job knowledge is not mandatory”

EN 287-1/ISO 9606-1 Certificate may be marked , “Job knowledge – Not tested”



Welding as a Special Process



Why ISO 3834?

ISO 9001:2008 Clause 7.5.2

Validation of processes for production and service provision

The organization shall validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered.

Validation shall demonstrate the ability of these processes to achieve planned results.



Why ISO 3834?

Validate: act of demonstrating that a verified procedure will work in practice and fulfil its intended function, normally achieved by actual witnessing, demonstration, field or laboratory tests or selected trials.

Welding: material/consumable selection, WPS, WPQR, welder qualification, heat treatment, inspection, test



Why ISO 3834?

All of which require competent personnel with special knowledge, skills, experience, and behaviours



Why ISO 3834?

- **Even basic legislation, such as the Sale of Goods Act, makes it your legal responsibility to ensure that your products deliver the performance that you have declared**
- **Compliance with ISO 3834 demonstrates that you have processes in place that provide effective control of quality of welding**
- **Other regulations, standards and specifications may more clearly define requirements**



Why ISO 3834?

- The CPR, supported by EN 1090-1, makes product performance the legal responsibility of the person placing the product on the market
- Determination of performance characteristics is required before products are placed on the market
- CE marking is required before products are sold on the market
- EN 1090-2/-3 reference to EN ISO 3834 makes compliance mandatory for welded construction products



Quality requirements of ISO 3834

ISO 3834-2 : Comprehensive

ISO 3834-3: Standard

**ISO 3834-4: Elementary
welding coordinators**



ISO 14731, Welding coordination – tasks and responsibilities

Welding coordination: coordination of manufacturing operations for all welding and welding-related activities (including welding inspection)

Welding coordinator: person responsible and competent to perform welding coordination

The employer's competence management system is responsible for assuring the competence of personnel



Busting the myths!

1. Compliance with ISO 3834 requires more than a QMS Manual
2. There is no such thing as a Responsible Welding Coordinator/RWC, unless you say so
3. IWE \neq RWC
4. ISO 3834 does permit use of ASME codes
5. There is no prescribed organisation
6. ISO 3834 does benefit your business



What? How? Who?

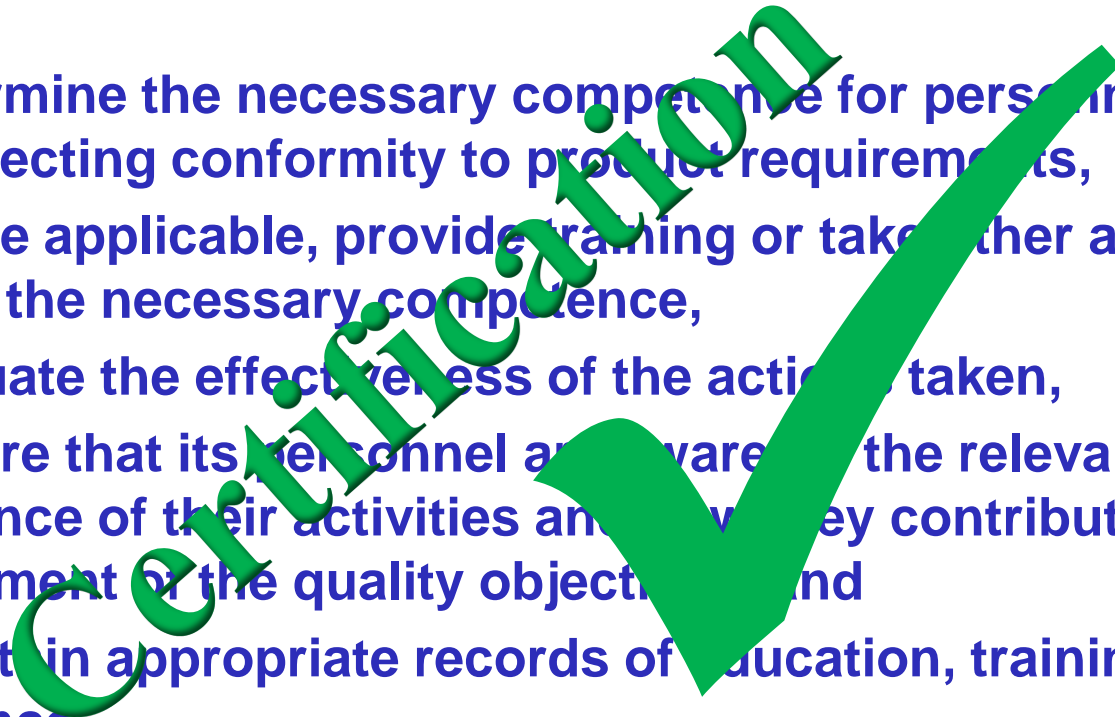
- **A QMS Manual is only of any benefit if it effectively describes and supports what the manufacturer actually does**
- **Control of processes that affect realisation of product quality must be demonstrated**
- **Personnel competence to control application of processes that affect declared performance values must be demonstrated**



ISO 9001:2008 on competence

Clause 6.2.2: The organization shall:

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- c) evaluate the effectiveness of the actions taken,
- d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and
- e) maintain appropriate records of education, training, skills and experience.



Certification iaw ISO 3834 and certification of personnel is a business decision

- Client preference
- Risk management
- Business advantage

Choose a Certification Body accredited by an IAF member iaw ISO/IEC 17065 and ISO/IEC 17024, with the relevant scope of approval



ISO 14731, Welding coordination – tasks and responsibilities

Welding coordinator: person responsible and competent to perform welding coordination

For ISO 3834-2 or -3, anyone in any role may be nominated as responsible for welding coordination, as long as they are competent and have sufficient authority to discharge their responsibilities – manufacturer's decision



ISO 13628-15:2011 Clause 7.11.2.2

Petroleum and natural gas industries – Design and operation of subsea production systems Part 15: Subsea structures and manifolds

**“The responsible welding coordinator
should be qualified as an IWE or as
otherwise accepted as given in ISO 14731.”**



Competence Management

Job Role A	Education	Training	Experience	OJT/Famil
	Qualification X IWE diploma Qualification Z	Course 1 Course 2 Course 3 or 4	>2 yrs as B >1 yr as C	Induction QHSAW 1 mth supervised

But, technical knowledge is only one element in assuring competence

The IWE diploma may be a qualification that satisfies some or all of your educational requirements for a role; the other elements of competence still need to be satisfied



ISO 3834-5:2005 Clause 2.1

Conformity to the quality requirements of ISO 3834-2, ISO 3834-3 or ISO 3834-4 shall be claimed by a manufacturer in accordance with one or more of the following options:

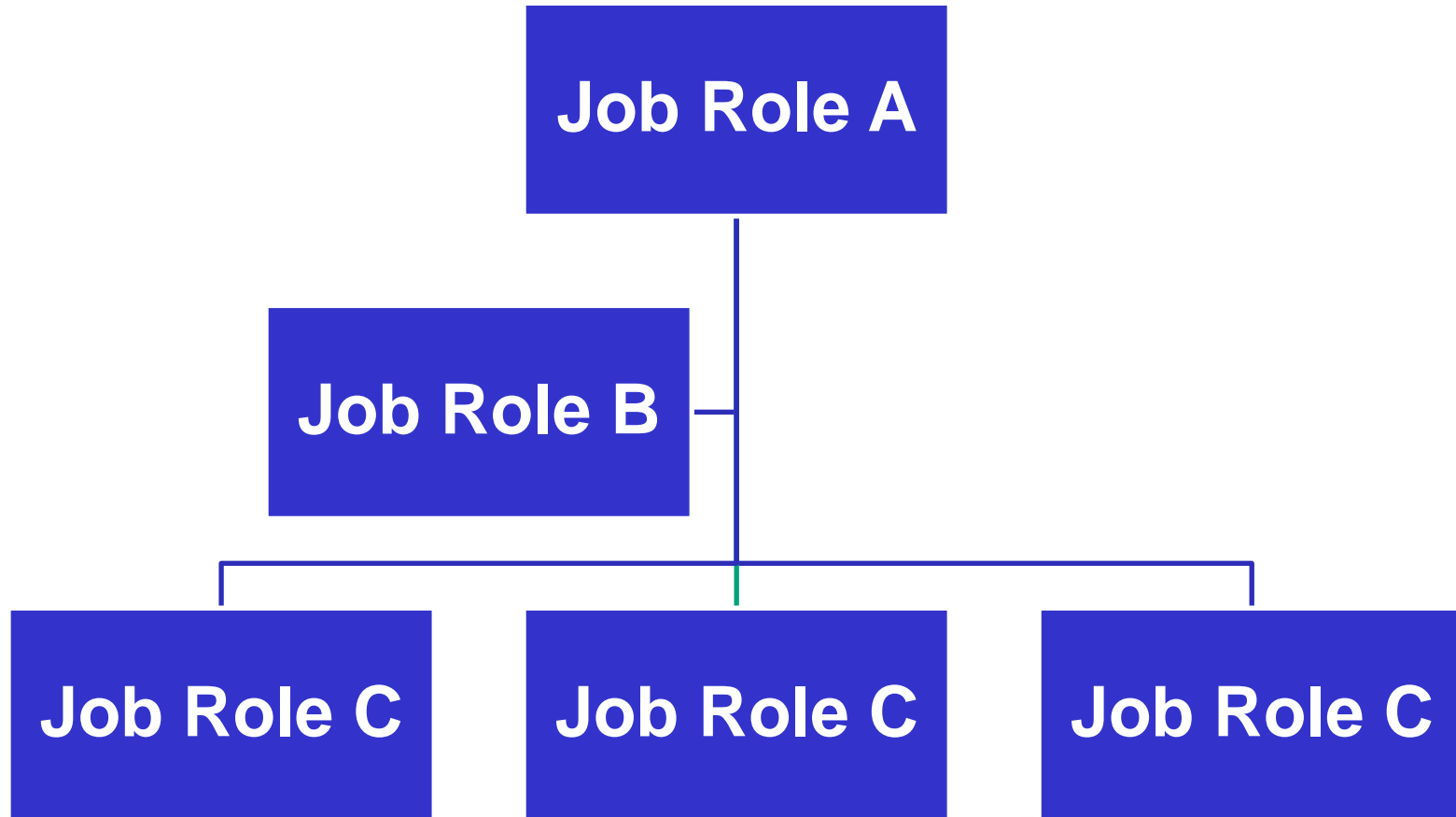
- a) adopting the ISO documents listed in 2.2;
- b) adoption of other documents that provide technically equivalent conditions to the ISO documents listed in 2.2;
- c) adoption of different supporting standards, where these are required in application standards used by the manufacturers.

It is the responsibility of the manufacturer to demonstrate technically equivalent conditions when documents other than those specified in 2.2 are employed.

ISO TC 44/SC 10 Resolution 12/2011



ISO 3834 and ISO 14731 are not prescriptive in their means of compliance



Competence Management

	Education	Training	Experience	OJT/Famil
Job Role A	Qualification X	Course 1	>2 yrs as B	Induction QHSAW
Job Role B	Qualification Y	Course 2	>1 yr as C	Induction QHSAW
Job Role C	Qualification Z	Course 3 or 4	1 mth Supervised	Induction QHSAW

www.iso3834.org - FAQs - Resources



Competence Management

<u>Welding Coordination Activities and Responsibilities to ISO 14731 Task allocation List</u>										
Activities & Responsibilities	R/W/C	QE	WF	FF	MAINT	W/Fl	W/FAB	SM	P/E	PD/H&SO
<i>B.1 Review of Requirements</i>										
a) The product manufacturing standards, together with any supplementary requirements										
b) The capability to manufacture to meet the prescribed requirements										
<i>B.2 Technical Review</i>										
a) The parent material(s) specification and welded joint properties										
b) The joint location, accessibility and sequence of welds, including accessibility for inspection and NDT										
c) Quality and acceptance requirements for welds										
d) Other welding requirements, e.g. batch testing of consumables, ferrite content of weld metal, permanent backing, surface finish, weld profile etc.										
e) The dimensions and details of joint preparation and completed weld										
<i>B.3 Sub-Contracting</i>										
With regards to sub-contracting the suitability of any sub-contractor for welding related activities										
<i>B.4 Welding Personnel</i>										
With regards to Welding Personnel, the qualification of welders										

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Benefits of ISO 3834

- Improved customer confidence
- Reduced rework
- Supports tenders and 2nd party audit
- Staff development and motivation
- Enhanced self-esteem and market position



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Choose a Manufacturer Certification Body accredited by an IAF member iaw ISO/IEC 17021 or ISO/IEC 17065, with the relevant scope of approval





TWI Certification Ltd

- **WFCS** – manufacturer certification scheme for ISO 3834 UKAS-accredited iaw ISO/IEC 17065; www.iso3834.org
- **CAESAS** – factory production control certification scheme for EN 1090, UKAS accredited Notified Body for CPR, NB 2400; www.en1090cert.org
- **CSWIP** – personnel certification scheme UKAS-accredited iaw ISO/IEC 17024; www.cswip.com
- **ANB and ANBCC** for EWF and IIW



Compliance through Competence

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