WELDING FABRICATOR CERTIFICATION SCHEME

DOCUMENT CS/1: SCHEME DESCRIPTION AND BENEFITS

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Issued under the authority of the Governing Board for Certification
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1 GENERAL BACKGROUND

In quality terms, welding is identified as a 'Special Process' which means that it requires specialist management, personnel and procedures. This has led to a number of developments, notably the publications of BS EN ISO 3834. This document prescribes requirements to provide assurance of welding and fabricating competence, and includes the feature of welding co-ordination in which companies must nominate competent Welding Co-ordinators (Welding Engineers, Welding Supervisors, etc who take responsibility for welding functions on behalf of their employers. Separate documents are available on the Certification of people with Welding Coordination responsibilities through CSWIP and/or through the European Welding Federation for Welding, Joining and Cutting (EWF)/International Institute of Welding (IIW).

The standard may be referenced by application standards or contractual specifications. Equally they provide a basis for independent assessment of a fabricator's welding competence and capability.

The certification of manufacturing companies which demonstrate compliance with recognised quality management systems such as ISO 9001 is well established but this provides little indication of the capability of a fabricating company in terms of competence to produce a type of product, operate fabrication processes or work with various materials. Clearly a similar independent certification to prove compliance with ISO 3834 can benefit welding fabricators by providing an authoritative third party reference of commercial value. For the purchasers, it provides a means of identifying fabricating companies whose competence for particular types of work had been independently assessed, providing greater confidence in their ability to deliver specific products of the required quality.

The Welding Fabricator Certification Scheme (WFCS) provides such a facility for all companies in which welding is an important feature of manufacture whether they have ISO 9001 certification or not. It provides for third party assessment of the control of welding, competence and capability leading to entry on the Register of Certified Companies held by TWI CL. It is an expert scheme in that the Assessors authorised under the scheme are required to satisfy stringent criteria and are formally Registered.

The WFCS also satisfies the criteria laid down by the European Federation for Welding, Joining and Cutting (EWF) and the International Institute of Welding (IIW) who have recognised the value of ISO 3834 and defined requirements for a unified European certification scheme. Details of all companies certified under the EWF/IIW system are published on the EWF website.

The WFCS is accredited by the United Kingdom Accreditation Service as complying with criteria laid down by the European Co-operation for Accreditation (EA). These criteria relate specifically to ISO 3834 certification activities and are designed to ensure that the special requirements of the standard are fully addressed in conformity assessments.

2 OUTLINE OF THE WELDING FABRICATOR CERTIFICATION SCHEME (WFCS)

ISO 3834 define management quality requirements for fusion welding. They incorporate the following parts:

ISO 3834	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 confirm to claim conformity to the quality requirements of 3834-2, 3834-3, 3834-4.
Part 6:	Guidelines on implementing ISO 3834.

Parts 2 and 3 of these documents also make reference to ISO 14731 Welding Co-ordination, Tasks and Responsibilities.

The scheme is administered by the Welding Fabricator Certification Management Committee (WFCMC) of the Governing Board for Certification of TWI Certification Ltd. Assessments may be carried out by Participating Assessment Bodies (PABs) operating within prescribed rules. Companies which are already

certificated to ISO 9001 may therefore be able to use the same Certification Body for an assessment under this scheme.

Companies that meet the requirements of the Scheme are entered on the Register and the EWF web-site. All Registered Certified Companies receive a Certificate of Registration from TWI Certification Ltd, EWF and IIW and are able to use the scheme logos.

3 BENEFITS FOR REGISTERED COMPANIES

- Clear, high profile independent verification of its compliance with ISO 3834, EWF, IIW. EA, and UKAS requirements.
- Independent confirmation of competence for its welding and fabricating capabilities and staff in a defined scope of activity.
- Welding quality management and fabrication capability assessments carried out by specialist assessors registered by TWI Certification Ltd.
- Increased national and international business potential through demonstrated compliance with internationally recognised welding quality requirements.
- Companies who do not wish to have their Quality Management system certificated to the full requirements of ISO 9001 can have their welding quality system and competence assessed against ISO 3834 and registered under the Scheme.

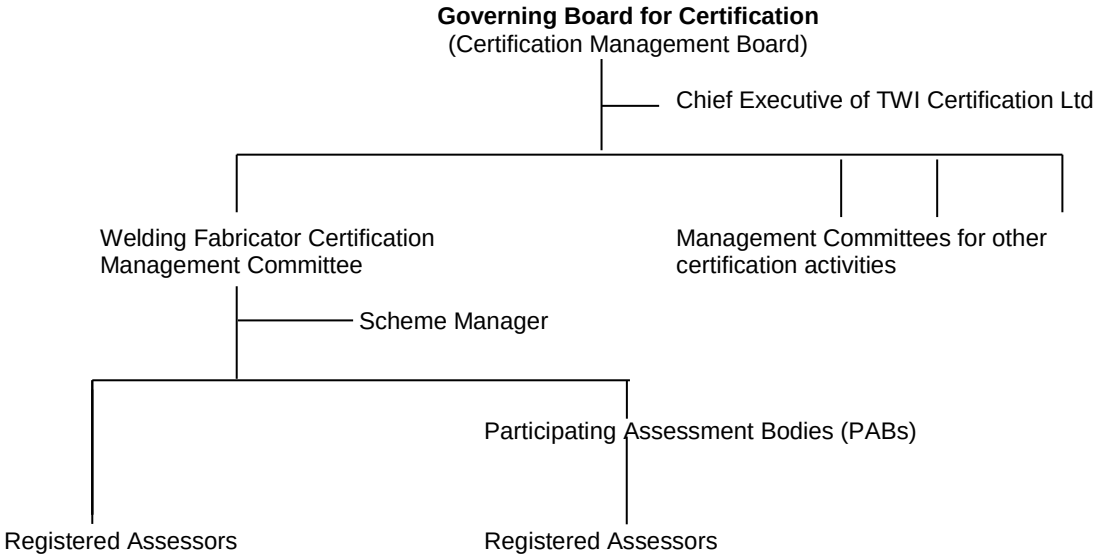
Special guidance on the application of the scheme to rail welding is given in Appendix 1.

4 BENEFITS FOR CLIENTS OF REGISTERED COMPANIES

- Expertly led, independent, vendor assessment.
- In-depth, authoritative evaluation of fabricator's capability.
- Consistent assessment.
- Uniform presentation of information and data.

5 ORGANISATIONAL STRUCTURE

The certification management structure of TWI Certification Ltd is as follows:



6 SCHEME OPERATION

Applicant companies are audited by assessment teams specifically approved by the Scheme Manager. Assessors have proven welding knowledge and experience, and this ensures that assessment is expertly directed and that the results are authoritative.

Following successful assessment of the applicant company, the Lead Assessor reports the data and the result to the Scheme Manager. The data will be entered on the Register, and published on the EWF web-site. Registered companies are issued with a Certificate of Registration from TWI Certification Ltd EWF and IIW.

7 LEVELS OF CERTIFICATION - RELATIONSHIP WITH ISO 9001

ISO 3834 lays down three levels of quality requirements for companies engaged in welding: Comprehensive, Standard and Elementary; which may be applied in conjunction with ISO 9001.

The Scheme can be operated to meet these variable requirements as follows:

a) **Where Certification to ISO 3834 only is requested**

The assessment will be carried out using a team of assessors specially approved and registered in accordance with the rules of the Scheme.

b) **Where the Company already has ISO 9001 Certification**

The Assessment Team will concentrate on ensuring that the requirements of the Scheme are met but will not normally review elements of the ISO 9001 system that satisfy ISO 3834 requirements. In this way duplication of effort, conflict and expense are minimised.

8 STEPS TO CERTIFICATION

The process for applicant companies involves the following stages:

a) Submission of the application form to a PAB or direct to TWI Certification Ltd together with an organisation matrix.

b) Company will receive documentation to complete before the preliminary visit commences.

c) Assessment Team confirmed by Scheme Manager.

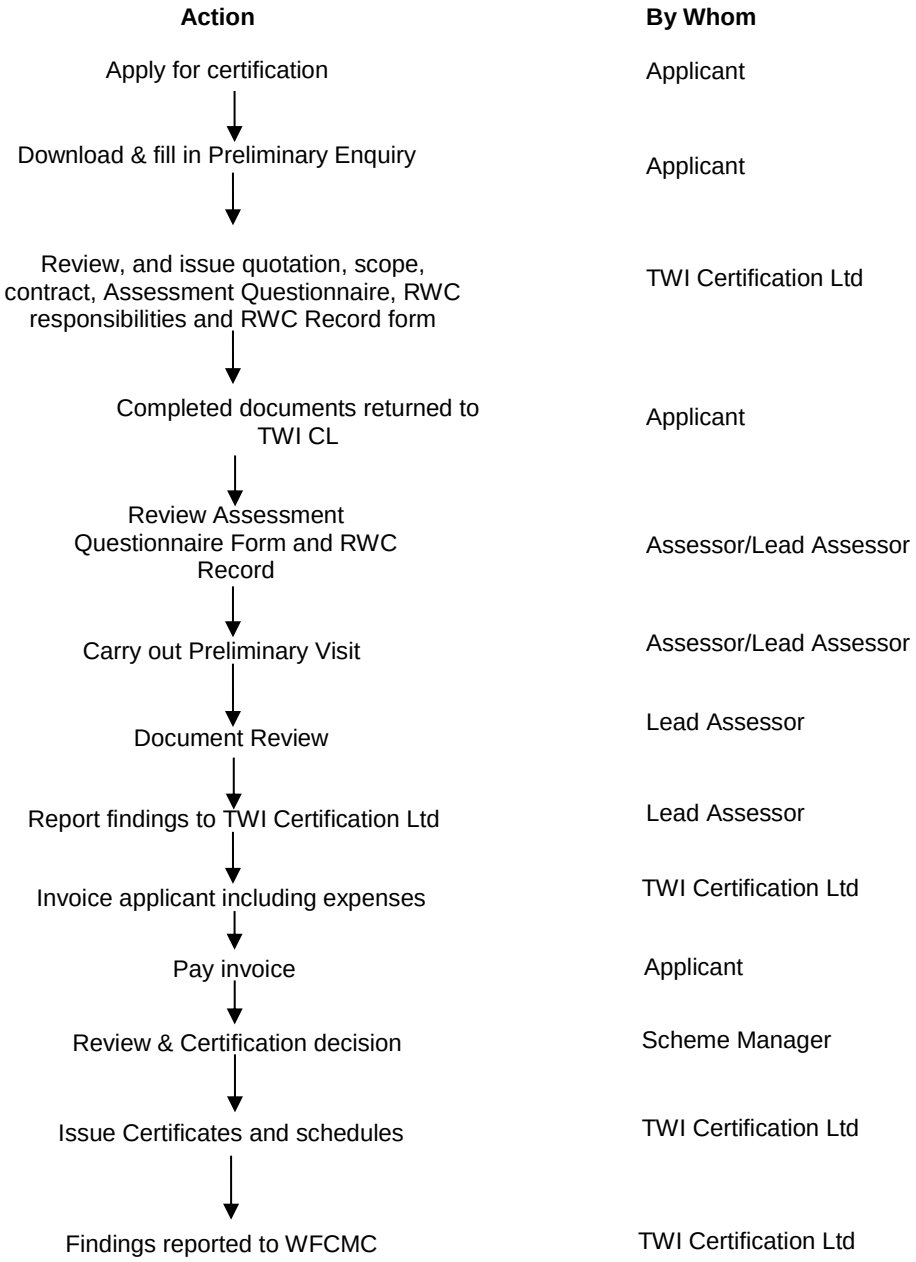
d) Preliminary evaluation by the Lead Assessor to establish quality system status and scope of applicant company.

e) Document Review completed by the Lead Assessor, using documents provided by the applicant company.

f) Planning of the assessment by Assessment Team.

g) Initial Assessment is carried out by the approved Assessment Team. During the assessment, interviews will be conducted with the welding co-ordination personnel and demonstrable evidence of compliance with the scheme requirements will be obtained.

ISO 3834 Audit Process



9 CERTIFICATION AND REGISTRATION OF APPLICANT COMPANIES BY TWI CL

a) **Registration**

Lead Assessor will submit all relevant information to the Scheme Manager for inclusion on the Register. This may include the following information:

- current product range
- welding processes
- materials and thickness ranges
- forming, machining and cutting facilities
- NDT facilities

- heat treatment facilities
- maximum handling size and weight
- transportation limitations
- personnel
- welding co-ordination personnel
- training facilities
- sub-contracting (relevant to fabrication)
- major use and control of sub-contractors
- special equipment/techniques available.

This information will be publicly available.

b) **Certification**

A company that has demonstrated compliance with these requirements shall be issued with a Certificate and Schedule identifying the relevant information. Three certificates are awarded, TWI Certification Ltd, EWF and IIW.

c) **Surveillance of Registered Fabricators**

Surveillance will be performed at least once each year so that the Company can demonstrate ongoing compliance with the appropriate part of the standard. Desktop surveillances may become available to customers that continue to meet all compliance requirements, and have no changes to their scope of work, and no corrective actions, following review of compliance performance by the Lead Assessor.

d) **Reassessment**

Reassessment against ISO 3834 is required every five years.

10 NOTIFICATION OF CHANGE OF CAPABILITY

The Registered Fabricator shall notify the Scheme Manager immediately when there is any reduction in the facilities or capabilities assessed. Changes of welding co-ordination personnel shall be notified and any new appointees' documentation will be reviewed for adequacy.

An increase in the capability may be notified between assessments or surveillance visits, and will be entered as provisional on the database, until verified.

11 SCHEME DOCUMENTATION

CS/1 Scheme Description and Benefits
CS/2 Requirements for Participating Assessment Bodies

12 FURTHER INFORMATION

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APPENDIX 1 to WFCS DOCUMENT CS/1: SCHEME DESCRIPTION AND BENEFITS

Guidance on the certification of rail welding contractors and subcontractors in accordance with ISO 3834

TWI Certification Ltd (TWI CL) operates a certification scheme for companies seeking to demonstrate compliance with ISO 3834 'Quality requirements for fusion welding of metallic materials.' A unique attribute of the TWI CL Welding Fabricator Certification Scheme (WFCS) is that it is accredited by UKAS and authorised by both the European Federation for Welding, Joining and Cutting (EWF) and the International Institute of Welding (IIW), affording it the widest international recognition and credibility.

ISO 3834 is applicable to all fusion welding processes and their application in all industry sectors. The independence and impartiality of WFCS certification provides high customer confidence in the competence of a welding provider. In the rail sector, WFCS certification provides assured compliance with both the Network Rail Track Engineering Maintenance Audit Checklist Q17 and the welding capability and personnel competence requirements of the RISQS Audit.

ISO 3834 requires all the company's welding and related operations to be controlled in an appropriate way and all people with responsibility for welding quality to be competent. The WFCS assessment and certification is related to the specific welded products and the scope of welded production undertaken by the applicant company/organisation.

For rail welding providers, the scope of assessment and certification is a rail sector-specific subset of the WFCS described in the main body of the CS/1 Guidance but the assessment and certification will follow the same process.

The WFCS for rail welding will undertake assessment of one or more of the relevant welding processes, such as: aluminothermic welding, arc welding, and flash butt welding; and it may include a range of welding applications, for example: welding for new track installation, track renewal, maintenance and repair, of plain rail, switches, crossings, and transition pieces. In addition to assessment of compliance with ISO 3834 requirements for welding of mainline track, the WFCS is also applicable to underground mass transit rail networks, embedded light rail systems, and heavy rail systems for cranes.

The criticality of the rail application leads to ISO 3834-2, comprehensive quality requirements being applied to rail welding. The scope of assessment against these requirements will include operations before and after welding, and will assess the competence of personnel involved in all aspects of welding coordination, including welding and weld inspection.

The very specific scope of application and the restricted scope of welding processes, consumables and materials, have enabled a specific application form to be created, the Form F01a/MCCM Application Form for Rail Welding and Track Components, and published as part of this Appendix to Document CS/1. The application form is designed to guide applicants through the rail welding specific aspects of assessment against ISO 3834-2 requirements.

In addition to the application and control of the relevant welding process(es), the scope of the WFCS assessment will: identify rail and welding materials, rail marking, cutting and edge preparation, rail alignment, pre-heating, shearing off excess metal, grinding, heat treatment, inspection, weld sentencing, and matters relating to health and safety. Equipment crucial to the welding process, equipment requiring approval for use during rail welding, and equipment maintenance and calibration will also be included in the scope of assessment. Compliance will be assessed against Network Rail and other customer specifications and product standards, and against relevant EN and ISO standards. As such, whilst rail welding is a sector-specific subset of the WFCS, all clauses of ISO 3834-2 are likely to be applicable to the control of rail welding quality.

The clear definition of the scope of activity and welded production that is included within the Form F01a/CCCM Application Form for Rail Welding and Track Components enables the preliminary visit to be waived, in all other ways the WFCS assessment will follow the process described in the main body of CS/1.