

## **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/MCCM 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.