CERTIFICATION SCHEME FOR WELDER TRAINING ORGANISATIONS

DOCUMENT No. CSWTO-1-02

Requirements for the Certification of Welder Training Organisations

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Issued under the authority of the Governing Board for Certification
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INTRODUCTION

TWI Certification Ltd operates certification schemes for individuals and companies. The Certification Scheme for Welder Training Organisations (CSWTO) is one such scheme. In order to become certified, welder training organisations are required to demonstrate through assessment that they meet exacting best practice criteria as specified in this document. The criteria aim to identify competence in welder training of those organisations gaining certification.

CSWTO is managed by the Certification Management Board, which acts as the Governing Board for certification in keeping with the requirements of the industries served by the scheme. The Certification Management Board in turn, appoints specialist Management Committee, Welding Fabricator Certification Management Committee (WFCMC) to oversee the scheme. The CMB Boards and WFCMC Committee comprises of member representatives of relevant industrial and other interests.

ACCESS TO CERTIFICATION

Access to certification schemes is not improperly restricted. The sole criteria for certification are given in this document (and any subsequent amendments) and no other criteria will be applied.

OBJECTIVES

The Scheme has the following objectives:

- To develop and maintain criteria, subject to the approval of the Welding Fabricator Certification Management Committee (WFCMC), which defines the requirements for the certification of competent welder training organisations.

- To establish procedures for the assessment of applicants in accordance with the requirements and to admit organisations that meet the requirements within identified limits of scope.

- To issue certificates to approved training organisations.

This document establishes the requirements for a competent welder training organisation and covers the following matters:

1 Definitions
2 Assessment of Training Organisations
3 Scope of approval
4 Premises and facilities
5 Training on client's sites
6 Welding and related equipment
7 Personnel
8 Quality management
9 Qualification testing
10 Storage and handling of materials and consumables
11 Training courses
12 Safety
13 Use of logo and approval statement
14 Rights and obligations
15 Fees

1. Definitions

Training Organisation: the company or other body certified under this scheme. Such certification may include one or more Training Establishments.

Training Establishment: The training locations of the certified organisations which are included in the scope of certification, and which may use the logo and certification statement.

Scope of Certification: The location(s) of the Training Establishments, the range of processes and materials and the training capacity for which the Training Organisation is granted certification.

Examiner: A person responsible for the conduct and control of welder, welding operator and welder assistant qualification tests.

2. Assessment of Training Organisations for Certification

Assessment for certification shall be carried out by TWI Certification Ltd in accordance with this document, and shall comprise both a review of the application documentation and on-site assessment of Training Establishments. Certification shall be for a period of five years subject to satisfactory annual surveillance and shall be re-assessed by audit approximately three months before the end of the five year period. Successful reassessment will result in recertification for a further period of five years.

Certification of each Training Organisation shall be granted for a specific scope, as defined in Clause 3 below. Where a Training Organisation has more than one Training Establishment, assessment shall be made and certification granted on an Establishment by Establishment basis. This may also require separate assessment/audit of some aspects of the Training Organisation where this is remote from the Establishment(s).

2.1. The audit team

As a minimum, the assessment Team shall be composed of a Lead Assessor approved by the Management Committee. The Committee may nominate other Assessors or technical experts to the Team where their presence is considered necessary because of the size of the Training Organisation or the nature of the training provided.

2.2. Application for certification

Training organisations wishing to gain certification shall apply to TWI Certification Ltd using the standard application form. A quote and contract will be issued based on the information provided in the application form. A signed contract and purchase order number will be required.

2.3. Documentation

The application form shall be returned and accompanied by the following documentation:

a) General description of the functions, organisation and management of the Training Organisation, including Training Establishments to be covered.

b) Control manual

c) Outline training programmes (course profiles) for the range of approval sought.

d) Appropriate public domain supporting documentation and literature.

e) Detailed CVs of all training staff, including authenticated current approval certificates.

2.4. Stage 1 Assessment

The arrangements for the audit visit will be made by the Company Certification staff in consultation with all interested parties.

The Lead Assessor, in consultation with any other team members, will review the application and prepare for the stage 1 assessment before it commences.

Any Examinations will be conducted during this visit.

2.5. Documentation Review

The Lead Assessor will review the documentation and draw the applicant's attention to any shortfalls. Stage 2 assessment will not proceed until the customer has addressed any shortfalls and examinations required have been successful.

2.6. Stage 2 Assessment

The arrangements for the audit visit will be made by the Company Certification staff in consultation with all interested parties.
At the end of the assessment they will agree on the terms of the report and its conclusions. Any non-compliances or observations shall be documented and agreed with the applicant during the closing meeting, and a time scale for their resolution agreed.

The applicant shall make all relevant facilities available to the Assessment Team, and provide access to a senior manager responsible for training when required.

2.7. Reporting

The Lead Assessor, in consultation with any other Team members, shall produce a report for review and revision by the scheme manager within three weeks. Wherever possible, reports are to be submitted to the applicant within six weeks of the assessment.

The applicant shall have right of appeal to the Management Committee if dissatisfied with the decision or the process and ultimately to the Certification Management Board itself. The decision of the Board shall be final.

2.8. Certification

If the Scheme Manager approves a recommendation for certification, a certificate shall be issued by TWI Certification Ltd.

3. Scope of Approval

The Training Organisation shall be certified following successful assessment, for a specific scope of training defined by:

a) Location of approved Training Establishments. Approval for training at workplace sites away from approved Training Establishments requires a satisfactory site visit by the assessment Team during which welder training is witnessed and assessed.

b) Processes for which equipment is available or, in the case of specialised equipment, is made available in accordance with the arrangements specified under subcontracting in the Control Manual.

c) Groups of materials, processes and specific process criteria (e.g. joint types, welding position, material form and thickness) within which training personnel have demonstrated competence.

See Appendix 1 for conventional materials/products and Appendix 2 for rail materials/products.

d) Capacity for training at each training establishment will be limited by the space and resources available. Where excess demand for a specific process beyond the availability of existing equipment is to be met by hiring additional equipment, this practice shall be undertaken under controlled arrangements specified under subcontracting in the Control Manual.

Notes

- Instructors may only carry out training within the scope of their authorisation as defined in Appendices 1 and 2.
- Competence in training for special processes, techniques or materials (e.g. underwater welding, titanium) shall be separately identified in the scope of certification and qualification certificates, stamped and verified.
- After Stage 2 assessment, changes in scope will be self-assessed according to the rules in this document and TWI Certification Ltd shall be notified so that provisional approval can be given for the new categories. The notification procedure is set out below, and the revised scope will be confirmed at annual surveillance.

e) It is implicit that all training and tests are carried out in accordance with approved or agreed welding procedures.

Members wishing to amend their scope of training between surveillance assessments shall proceed as follows:

a) Where change of scope is relevant, the CVs of instructors, their certificates of welding capability, course programmes and course notes, are to be sent to TWI CL for review. A Lead Assessor will be assigned to review the documentation.

b) Any decrease in scope, for example, the loss of an instructor, must be notified to TWI Certification Ltd at the earliest convenience.

c) The allocated Lead Assessor will complete a Recommendation for Certification. The Scheme Manager will review and approve any successful scope changes.

d) The Certified Training Organisation will be sent a revised certificate if the approval that has been granted.

e) Verification that the training activities and training areas given approval by documentation only will be checked during the next surveillance visit.

4. Premises and Facilities

Training shall be carried out in a designated area separate from any manufacturing facility. It shall contain individual welding areas, a lecture room and offices, and shall have close access to washing/toilet facilities, and cloakroom/lockers. Messing arrangements, which must include as a minimum a rest room having facilities for heating food and supply of hot and cold drinks shall be available at the Training Establishment.

The training area shall be constructed in accordance with good building practice and shall be maintained in good condition. It shall have a hard, dry, level floor capable of easy cleaning. The minimum headroom should preferably be 2.5m. Where training is for welders who will operate in the open at sites, external training areas may be designated but equipment is to be available to protect the trainee from adverse or inclement weather conditions.

Noisy equipment, such as air compressors, shall be located outside the main training area.

For workshop training facilities, the working temperature should be within the range 13 - 30 degrees C, and the level of illumination shall be 300 lux for general background lighting in the workshop with 500 lux local lighting provided for inspection activities. On open sites, the general level of lighting shall be adequate for welding and associated activities but shall be augmented with lights and torches to achieve 500 lux in locations where inspection activities are being performed.

Fume ventilation shall be extracted “at source” and if this is not 100% possible other measures to protect welders and other workshop personnel shall be employed. The welding areas shall be maintained and inspected on a regular basis. EWF compliant.
Compressed air lines, gas lines, and power conduits shall be identified and shall follow national colours where these are defined, eg, BS 1710:1984.

Gases shall be stored in accordance with the relevant Acts and Regulations where these apply. In the absence of such Regulations, good practice with respect to personal health and safety and the avoidance of fire risk shall be adopted.

The training establishment shall be laid out to give unobstructed access to all machinery and working areas. All exit doors shall be clearly marked.

Student attendance shall be recorded.

Where appropriate, a suitably screened and ventilated area shall be set aside for heavy grinding and gouging operations on work pieces.

First aid facilities shall be designated in case of injury or illness.

The training establishment shall be kept in a clean, tidy condition, and gangways shall be kept clear of obstructions.

Where applicable, individual booths shall be provided, having a minimum floor area appropriate to the process and specimens concerned, and entry to the booths shall be designed for easy access and to prevent the escape of arc radiation. The booth shall contain a steelwork bench or work support (correctly earthed), storage for consumables and tools and auxiliary low voltage supply. A mains isolation switch shall be accessible.

Aluminothermic welding areas, shall conform to the requirements of the applicable rail authority and shall contain a mixture of different rail profiles, sleepers and fasteners.

There shall be clear access from the entrance to the workbench, to facilitate safe handling of work piece materials.

A quiet lecture room shall be provided of a size to provide each trainee with at least 1.5m^2 of floor area. It shall be equipped with tables and chairs, chalk or white board (or flip chart), visual aids, and wall space for the display of wall charts.

Adequate and secure facilities shall be provided for the administrative and record functions required by the Training Organisation.

If required by contract or through Regulation, provision shall be made for workplace simulated conditions.

5. Training on Clients' Sites

Welder training may be carried out at clients' sites, where the facilities may be less satisfactory for training purposes than those at a Training Establishment. The Training Organisation must take special care in these circumstances, and ensure that the training is carried out in accordance with this document. The matters shown below must be appropriately covered in the Control Manual.

a) Instructors will not commence training unless the initial and final craft or other standards have been defined and they are qualified in accordance with these requirements to deal with the identified training need.

b) All plant and systems at the training site are in a safe and well maintained condition.

c) Correct protective clothing is worn.

d) All courses (involving hands-on training) must contain a safety briefing given by the Instructor and/or a competent member of the site staff.

e) The training environment must include areas/rooms independent of production.

f) Each trainee is allocated his own welding equipment (where manual skills instruction is being conducted) with adequate screening, hand tools and work bench facilities.

g) Provision is made for the supply of materials, in accordance with these requirements, for practical exercise pieces, which have been satisfactorily cut and prepared.

h) Instructor student ratio must reflect the problems imposed by environmental and other considerations, and must be reduced accordingly to maintain good Instructor/trainee supervision.

i) Lecture room facilities, if applicable, shall offer a reasonably quiet environment and shall contain adequate means for the use of visual aids.

j) Adequate time must be allowed for conducting the training course.

k) When conducting welder approval tests, the Instructor must strictly enforce the criteria detailed in the specification or standard.

6. Welding and Related Equipment

Welding equipment used for welder testing shall be calibrated and validated to maintain standards Welding plant and equipment shall be fit for its purpose complying with the appropriate Standards. It shall be of a power commensurate with the welding procedure requirements of the training establishment.

All plant and equipment, including inspection and test equipment, shall be maintained in a serviceable condition. Measuring instruments used for process control and inspection and test shall be calibrated, in accordance with the Control Manual. Any deviations shall be recorded and prominently displayed on the equipment.

Each welding station shall be provided with adequate tools including wire brushes and hammers. There shall be access to stamps for marking purposes and light grinders.

The training establishment shall be equipped with, or have controlled access to, cutting equipment and machine tools necessary for the preparation of work or test pieces.

7. Storage and Handling of Materials and Consumables

A system of stock control and recording for base materials shall operate.

Workpiece material shall be clean and stored in a dry, well ventilated area in appropriate racking, with easy access for handling. It shall be clearly identified to avoid incorrect material being selected. Material segregation area required for stainless steel etc.

Welding consumables, portions and other consumable items shall be clearly identified and stored in accordance with manufacturers' recommendations. Baking facilities and holding ovens/quivers for those electrodes and fluxes that require baking or drying shall be available. Damaged and/or unidentified items shall be discarded. Vacuum pack electrodes can also be used, in accordance with the manufacturers' recommendations.

The methods used for storage, identification and handling of base materials, welding consumables, portion and other consumable items shall be documented in the Control Manual for welder qualification testing.

8. Personnel

8.1. General

The Training Organisation and each Training Establishment shall be managed by a competent person having qualifications and experience commensurate with the activities and shall have routine access to a source of welding technology represented by an engineer of at least MWeldI level and with welding knowledge equivalent to CSWIP Welding Inspector. This matter shall be covered in the Control Manual.

After completion of the stage 2 assessment the training organisation must have at least one full time instructor with Registered Master Welder Instructor status or Certified Specialist Welding Instructor. The remaining instructors may be Registered Master Welder Instructors, Certified Welding Instructors or Certified Specialist Welding Instructors. Training Establishments are encouraged to have at least two Registered Master Welder Instructors.

The team of Instructors must collectively possess welder approval certificates covering the range of training for which approval is being sought or has been granted.

8.2. Authorisation of Instructors

As a minimum, instructors shall be certified and/or registered under CSWIP as Registered Master Welder Instructor, Certified Welding Instructor or Certified Specialist Welding Instructor as detailed in the current edition of Document No CSWIP-WInst-1-91, Requirements for the Certification of Welding Instructors and Specialist Welding Instructors and CSWIP WI-1-91, Registration Scheme for Visual Welding Inspectors, Welding Inspectors, Senior Welding Inspectors, Welding Instructors and Welding Supervisors, as appropriate.

In certain industrial sectors, e.g. training rail welders, additional criteria to those specified in the current edition of Document CSWIP-WInst-1-91, Requirements for the Certification of Welding Instructors and Specialist Welding Instructors, may be applied. Training Organisations seeking membership of CSWTO who operate in these areas must satisfy the additional industry requirements that apply and their instructors shall be authorised by any relevant industry authorisation body. Maintenance of authorisation may require renewals at more frequent intervals than those specified in Document No CSWIP-WInst-1-91 and require more extensive assessments.

9. Quality Management

The operation of the Training Organisation and its Training Establishments shall be controlled by a Control Manual covering the elements listed in Appendix 3 and described in Sections 3 to 12. Where the words ‘must’ or ‘shall’ are used, the clause is mandatory. In clauses where the word ‘should’ is used, it is expected the Training Organisation will observe the requirements of the clause. Where the clause is not followed, the Training Organisation is to explain why in the Control Manual.

The Training Organisation shall implement and maintain a quality management system embracing the following aspects to support the training activities described in its Control Manual.

a) Control of documents and records
b) Resource provision
c) Training, assessment and qualification of Training Organisation personnel
d) Assessment and qualification of training processes
e) Determination of training process requirements
f) Technical and management review of training process characteristics
g) Training course planning
h) Selection of subcontractors including contract instructors
i) Monitoring and measurement of course performance
j) Assessing Training Organisation performance
k) Control of non-conformances
l) Corrective and preventive action
m) Internal audit, assessment and review

These features of a quality management system need only apply to the particular activities of the Training Organisation. Guidance on the development and implementation of methods to address these features is given in ISO 9001: 2015.

Further education colleges or welder training centres delivering Further Education levels with funding drawn down from the government, must possess a satisfactory Ofsted report

10. Qualification Testing

The conduct and witnessing of qualification tests by an Examiner shall be in accordance with the requirements of the relevant standard, client, or nominated third party authority. If the Examiner is a member of the Training Organisation's staff, the Training Organisation shall ensure that current issues of relevant standards, client specifications and third party authority regulations used in the conduct of welder, welding operator and welding assistant qualification tests are held by the organisation and made available to the Examiner at the appropriate Training Establishments or site locations.

It is the responsibility of the Examiner to:

(i) Ensure the material grade, material dimensions, joint preparation, welding position and any other criteria required by the test are in accordance with the requirements before the test commences.
(ii) Verify the name and any other means of identification of the person and record these details.
(iii) Establish that the person carrying out the test understands the test requirements and is familiar with what he or she has to do.
(iv) Record all necessary data relating to the test and prepare and issue a test record detailing all relevant information required by the standard, specification or regulation.
(v) Ensure that the weld is made by the nominated person.
(vi) Ensure that the completed test piece is adequately identified and the positions where test pieces are to be extracted are properly marked and, where appropriate, identified.
(vii) Arrange for all required inspections and tests. Mechanical tests and NDT should be carried out by accredited laboratories.
(viii) Assess the results of inspections and tests and establish if the candidate has been successful.
(ix) Where the candidate fails, arrange a re-test if this is required, following the procedure as detailed above.
(x) Generate all necessary records and issue or authorise the issue of certificates.

(xi) The welding examiner cannot be the welding instructor for the weld test being performed.

11. Training Courses

Flexibility to meet customer needs is an inherent feature of welder training, but Training Organisations must maintain documentation to demonstrate that all training courses are established in a systematic and competent manner and meet expectations of the client.

11.1. General

Each Training Organisation is required to adopt a quality policy for its training activities. The application of this policy within the organisation should impact on the aspects listed below.

- Appraising trainee potential and identifying his or her individual needs, by assessment
- Establishing reliable systems within the Training Establishment that allow individual trainee needs to be achieved in the most effective and efficient manner,
- The adoption and development by the Training Organisation of a culture that puts trainee attainment at the apex of the organisation's aspirations,
- Adopting training methods that enable trainees to achieve their potential,
- Evaluating the effectiveness of the training methods applied,
- Assessing the effectiveness of trainee assessment and monitoring methods used,

- Ensuring that trainees are properly guided and supported, before and after training
- Evaluating the effectiveness of leaders and managers in raising achievement and supporting all trainees.

11.2. Training methods

Welding is a craft skill and cannot be taught in a classroom. It requires practical demonstration and time for practice. The Training Organisation shall state in its Control Manual how its training methods are selected. The following aspects should be included.

- Initial training enquiry
- practical demonstrations
- private practice
- supervised practice
- classroom instruction
- private study
- instructor trainee ratios

11.3. Training programmes

A structured programme of practical and theoretical work must be prepared for each course. Such programmes must be supported by appropriate session notes, qualified welding procedures and visual aids as described below. All instructors shall be qualified for the material and process of the welder qualification certificates.

The course programme gives details of session times, breaks and session activities. It may include information about session locations, instructors and session scopes and objectives. Programmes may also be designed to record individual trainee attendance and progress.

11.4. Training material

11.4.1. Instructor session notes

Instructor session notes are to be prepared for each session or training activity. The notes should cover the following aspects.

- lesson plans
- session or activity objectives and how they are to be measured
- main headings of session or activity and, as a minimum, a summary of what has to be covered under each heading
- the training aids to be used
- guidance on gaining course participation, if appropriate

11.4.2. Training aids

Training aids may be in the form of:

- samples, eg, welds, sections, defects, mechanical test pieces
- videos/DVDs
- overheads
- electronic data projection
- slides

Training aids should be uniquely numbered and controlled.

11.4.3. Handouts

Handouts should be available for trainees. In some cases, session notes or overheads may be used as course handouts. In others, more detailed instruction notes may be necessary. Welding procedure specifications or welding instructions should be treated as course handouts.

11.5. Practical sessions

Adequate time should be allocated for practical sessions after initial assessment. These may include demonstrations, supervised training where good practice is encouraged and weaknesses corrected as well as private practice.

Wherever possible, welding training activities shall, be in accordance with documented instructions or welding procedure specifications. Evaluations of trainee practical skills are to be carried out to a welding procedure specification or instructions based on a welding procedure specification. There should be adequate evidence held by the Training Establishment to demonstrate that the welding procedure specifications used for training and assessment are achievable.

11.6. Trainee progression

Trainee progression in acquiring new skill is to be periodically assessed and monitored. Trainee performance is to be recorded and discussed at suitable times in the course with the trainees.

11.7. Course appraisal

At the completion of each course, an appraisal is to be carried out and any weaknesses corrected. The assessment should normally include input from course members and course instructors and involve senior management. In Further Education colleges this is normally approved at your course examination session.

12. Safety

The training area, all equipment and facilities therein, and working practices shall conform to the recommendations in 'Health and Safety at Work Act' and COSHH Regulation or to an equivalent publication acceptable to TWI Certification Ltd.

All inductees must receive instruction in safe working practice before starting work in the practical training area. Appropriate safety clothing and equipment shall be worn and the Training Organisation shall ensure that it is in good condition.

13. Use of Logo and Certification Statement

Training Establishments which are part of the Certification Scheme for Welder Training Organisations, may use the scheme logo and the words 'Approved Welder Training Establishment.'

Certified training organisations may use the scheme logo and the words 'Certified Welder Training Organisation.' In addition, they may use the words 'Approved Welder Training Establishment' linked to the location, e.g. 'Approved Welder Training Establishments in London, Glasgow and Aberdeen.'

14. Rights and Obligations

Certified training organisations shall have the following rights:

a) To receive a Certificate and a plaque for the wall.

b) To use for each Training Establishment the scheme logo and statement 'Approved Welder Training Organisation.'

c) To have an entry in a published directory of Certified Welder Training Organisations.

And the following obligations:

d) To operate in accordance with the scheme requirements.

e) To keep in touch with trends and developments in welding appropriate to their scope and inform TWI Certification Ltd of any changes which may affect their scope of certification.

f) To establish and maintain a complaints procedure to deal with complaints from trainees or their employees.

15 Fees

The fee structure for certification shall be fixed by the Management Committee so as to cover operating costs. There will be a fee for each Certified Training Organisation and an additional fee for each approved Training Centre.

The charges for assessment and surveillance shall also be agreed by the Management Committee. Where Training Organisations provide training at sites away from a Training Centre, additional visits are included in assessment and surveillance programmes to witness and audit at site.
Details of current quotes will be sent to the client after completion of the application form.

APPENDIX 1 SCOPES OF APPROVAL – CONVENTIONAL WELDING PROCESSES/PRODUCTS/MATERIALS

Process Material	Carbon and low alloy steels,	Stainless steel		Aluminium	Cu	Cu alloy	Ni	Other (specify)
Manual metal arc								
Flux cored self shielded metal arc								
MIG								
MAG								
Fluxed cored active gas								
TIG								
Plasma								
Oxy-acetylene								
Other fusion:								

The categories detailed in the above table for steel and aluminium comply with those adopted in BS EN ISO 9606-1: 2017 covering the approval testing of welders for fusion welding of steels and aluminium alloys respectively.

i) Instructors shall be qualified for the material and process on the Welder Qualification Certificates.

ii) Instructor approvals within any category provides certification of the training centre for all three categories.

iii) Instructor approvals within any category provides certification of the training centre for all three categories.

iv) Approval for copper alloys covers for copper.

v) Approval for nickel or nickel alloys covers for all materials in this category.

vi) The range of joint types and welding positions for which Training Organisation personnel have demonstrated competence is defined in the following terms:

Material Form	Joint Type	Welding Position				
		Flat	Horizontal – Horizontal Vertical	Vertical Up	Vertical Down	Overhead
Sheet (<3mm)	Butt	PA	PC	PF	PG	PE
	Fillet/ Overlap	PA	PB	PF	PG	PD
Plate	Butt with backing or backgouging	PA	PC	PF	PG	PE
	Butt without backing or backgouging	PA	PC	PF	PG	PE
	Fillet	PA	PB	PF	PG	PD
Pipe	Butt					
	Fillet	PA	H-L045	PF	PG	

viii) Welding of pipe provides authorisation for welding of plate and fillets within the range of positions covered by the pipe welding test. Butt welds shall cover fillet welds and branch welds.

APPENDIX 2 SCOPE OF APPROVAL - RAIL WELDING PROCESSES/PRODUCTS/MATERIALS

	Group A Rail Steels	Group B Rail Steels	Group C Rail Steels	Other Rail Steels
MMA				
MIG/MAG and related				
Tubular cored wire				
Aluminothermic process 1				
Aluminothermic process 2				
Flash butt				

The categories of materials detailed in the above table comply with the groups of materials given in Network Rail Standard NR/L2/TRK/0032. The categories are as follows:

Group A rail steels:
R200
R220 (Normal grade)
R260 (Wear-resisting Grade A)
UIC 700
UIC 900A
AREA 900A
UIC Grade A

Group B rail steels:
R 260Mn (Wear-resisting Grade B)
R 320Cr (110kg/mm^2 Cr)
90kg/mm^2
UIC Grade B

Group C rail steels:
R 350HT
HT (340-370)

Other rail steels:
High Performance (HP)
400MHH (R370CrHT)

APPENDIX 3 THE CONTROL MANUAL

The Control Manual shall cover the following matters. Additionally, it may cover the quality management elements listed in Section 8. Where information is subject to periodic or regular change, that information may be held separately and its location referenced in the Control Manual.

1 A quality policy statement.

2 General description of the facilities, location, organisation and management of the Training Organisation and its Training Establishment(s); legal status.

3 Names, qualifications and experience of staff; recruitment policy, staff structure, access to source of welding technology. Job functions and job specifications of staff; student-staff ratio. Contingency plans to deal with unplanned instructor absences.

4 Subcontractor control procedures.

5 Safety policy; implementation; safety officer, first aid facilities; emergency procedures.

6 Administration; procedure, trainee records, confidentiality; facilities, systems.

7 Procedure for management and control of site operations.

8 Internal audit procedure for the CSWTO scheme.

9 Complaints procedure.

10 Workshop facilities; nature of construction; cleaning, maintenance, safety, illumination, ventilation, temperature control; access control. Welding stations, construction, size, access, maintenance, fume extraction. Electrical installation; power supplies, maintenance. Heavy grinding area; location; ventilation and dust extraction, cleaning, maintenance. Handling and lifting equipment, maintenance, safety.

11 Lecture room facilities; nature of construction, area, capacity, noise level and control, cleaning, maintenance, safety, illumination, visual aids , ventilation, temperature control, seating, tables.

12 Welding equipment; purchase, replacement, checking, calibration, maintenance, safety.

13 Consumables and parent materials; purchase, stock levels, control, recording, identification, storage, shelf life, issue procedure, control in training area.

14 Preparation of material; cleaning, cutting, machining.

15 Welding procedure specifications for training; preparation, validation, approval, control, change procedure.

16 Power and hand tools; purchase, maintenance, issue, safety.

17 Qualification testing; location, work piece preparation, identification, issue, control, welding procedure specifications, issue of consumables, instruction to candidates, supervision, witnessing, documentation; welding equipment, calibration, maintenance, certification, issue of certificates.

18 Ofsted report or ISO 9001 Certificate

19 Testing; equipment calibration, maintenance, witnessing; assessment of results, subcontract procedures.

20 Training methods, training programmes; preparation, validation, change control, interfacing with customer needs.

21 Lecture notes and visual aids; preparation, sourcing validation, change control.