



CERTIFICATION SCHEME FOR PERSONNEL

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Requirements for the End Point Assessment of Apprentice Welders

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Issued under the authority of the Governing Board for Certification
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FOREWORD

The Certification Scheme for Personnel (CSWIP) is a comprehensive scheme which provides for the examination and certification of individuals seeking to demonstrate their knowledge and/or competence in their field of operation. The scope of CSWIP includes among others, Welding Inspectors, Welding Supervisors, Welding Instructors, Welding Examiners, Welding Quality Control Co-ordinators, Heat Treatment Operatives, Cathodic Inspection personnel, Plant Inspectors, Underwater Inspectors, Plastics Welders and NDT personnel.

CSWIP 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 Committees to oversee specific parts of the scheme. All CSWIP Boards and Committees comprise member representatives of relevant industrial and other interests. TWI Certification Ltd is accredited by UKAS to BS EN ISO/IEC 17024 for certification of personnel.

TWI Certification Ltd understands the importance of impartiality in carrying out its certification activities, managing conflict of interest and ensuring the objectivity of all its certification activities, in accordance with BS EN ISO/IEC 17024.

ACCESS TO CERTIFICATION

Access to certification schemes is not improperly restricted. The criteria for certification are given in the document (and any subsequent amendments) and no other criteria will be applied. Certification is not conditional on the candidate applying for other services or membership from TWI Certification Ltd, its parent, or any other groups or associations.

Definitions

Training Body – a competent organisation for the training of welding apprentices. Training Bodies must be listed on the Register of Apprenticeship Training Providers:
<https://roatp.apprenticeships.sfa.bis.gov.uk/download>

Assessment Organisation – TWI CL is a competent organisation for the theoretical and practical testing of welding apprentices as defined in the Assessment Plan published at
https://www.instituteofapprenticeships.org/media/1141/welding_level_2.pdf
https://www.instituteofapprenticeships.org/media/1142/welding_level_3.pdf

Skill/knowledge modules – different combinations of welding processes, parent materials and welding positions as listed in the Assessment Plans

Authorised Examiner – a competent person, with a valid CSWIP Welding Examiner certificate and appointed by TWI Certification Ltd, to conduct the end-point assessment in accordance with the Assessment Plan.

1 GENERAL

1.1 Scope

This document describes procedures by which personnel shall be examined, and, if successful, qualified as a General Welder or Multi-Positional Welder.

1.2 Responsibilities of Personnel

1.2.1 General Welder (Level 2)

General welders are fully competent in manual welding using at least one welding process.

1.2.2 Multi-Positional Welder (Level 3)

Multi-Positional Welders are fully competent in manual welding using at least one welding process in all welding positions.

1.3 Requirements prior to taking a certification test

The applicant will have completed an approved apprenticeship in accordance with standard ST0349 or ST0350 details are given at <https://www.instituteforapprenticeships.org/apprenticeship-standards/>.

The apprenticeship programme has an expected overall duration of 18 months for Level 2 (minimum of 12 month) and 38 months for Level 3 (minimum of 32 months). Prior to undertaking the end-point assessment, apprentices will be required to undergo a sustained period of on- and/or off-the-job training.

The knowledge requirements are listed in the Apprenticeship Standard and more details are given at <http://www.theweldinginstitute.com/education-and-development/uk-apprenticeships/trailblazer-welding-apprenticeships/>

The practical skills required are listed in the Assessment Plans (ST 0349/0350, Level 2 and 3 respectively) and are selected by the employer. The apprentice will be required to demonstrate that they have achieved the skill requirement for welding plate and/or pipe in with the completed test pieces meeting the required levels of quality in accordance with the selected specification.

The candidate will be required to successfully achieve qualifications at level 1 in English and Mathematics and also to have taken examinations at level 2, for both subjects, within the period of apprenticeship if not already achieved for Level 2 and have successfully achieved qualifications at Level 2 in English and Mathematics for Level 3.

When apprentices have completed the mandatory aspects of the standard and the employer, with input from the Training Provider, decides that the apprentice is occupationally competent and ready the End Point Assessment can be conducted. The employer will provide a statement confirming that the apprentice has the required level of Mathematics and English, and that the apprentice has completed a minimum of 20% off-the-job training and has received a continuous on-programme assessment of knowledge, skills and behaviours such that the apprentice is ready for the end point assessment.

2 Examination Procedure

The end-point assessment can be conducted at a TWI Welder Training Facility, at Training Providers with CSWTO Certification, or at Training Providers who undergo a successful audit by Authorised Examiner, or at an employer's premises if a recognised ISO 3834 certification is held. The End Point Assessment consists of three parts:

1. **A theoretical knowledge test** using multiple choice question papers containing generic questions relevant to all welders and specific questions relevant to the theoretical part of the skill/knowledge modules selected by the employer (STA 0349/0350).
2. **A practical/oral examination** comprising two practical tests (Level 2) or three practical tests (Level 3) conducted in accordance with CSWIP-PED-1-99 or CSWIP-QPW-25-12 and an oral examination to assess that the apprentice has an understanding of the tests they are undertaking, the safety requirements and the wider responsibilities of a welder.
3. **A professional interview** which is designed to do two things: firstly, to further explore the apprentice's knowledge relevant to their role and, secondly, to assess if the apprentice's occupational behaviours meet the requirements specified in the Apprenticeship Standard. For Level 2 the candidate must undergo a 30-minute interview with an Authorised Examiner covering the associated topics taught during the trailblazer apprenticeship

For Level 3 the candidate must undergo a 60-minute interview with an Authorised Examiner covering the associated topics taught during the trailblazer apprenticeship. The criteria for passing the assessment for

Level 3 will be such that successful apprentices will also be eligible for Engineering Technician Registration through The Welding Institute, which is a licenced Professional Engineering Institution of the Engineering Council. An EngTech TechWeldI Apprentice application form will be given to the apprentice to complete, for those wishing to become Registered Technicians and Professional Members of The Welding Institute, which will be forwarded to The Welding Institute.

2.1.1 Theoretical knowledge test

The theoretical knowledge test is a multiple choice examination paper structured in accordance with Table 2 of STA0349/0350 as applicable. The content will address the knowledge requirements of the modules selected.

2.1.2 Practical Examination

The practical examination for Level 2 consists of two welding tests, selected from the following range using the applicable welding process

- a) Fillet welds on plate
- b) Fillet welds on pipe
- c) Butt welds on plate
- d) Butt welds on pipe

The practical examination for Level 3 consists of three welding tests selected from the following range using the applicable welding process

- a) Fillet welds on plate
- b) Fillet welds on pipe
- c) Butt welds on plate
- d) Butt welds on pipe

The Authorised Examiner will be responsible to ensure that the requirements of the standard selected by the employer are fulfilled.

2.1.3 Oral examination

During the course of the practical test, the Authorised Examiner will conduct an oral examination of the apprentice to assess their understanding of the tests they are undertaking along with the wider responsibilities of a welder.

A pass or fail result for the oral examination will be awarded by the Authorised Examiner.

2.2 Professional Interview

The professional interview will be attended by:

- The Apprentice.
- An Authorised Examiner competent in conducting and deciding the result of the professional interview and for Level 3, a person authorised by The Welding Institute to conduct Professional Review Interviews leading to Engineering Technician Registration.

The professional interview will cover the following areas:

1. Application of knowledge learned during the apprenticeship.
2. Role of the welder in industry.
3. Professional behaviours as listed in the Apprenticeship Standard.
4. Evaluation against the requirements for registration as an Engineering Technician if not already covered in items 1-3 above.

The Authorised Examiner will complete the Professional Review Interview Form for Engineering Technician Registration (EngTech).

2.3 Grading

The pass mark for the multiple choice paper is 60% and it has a weighting in the overall assessment of 20%.

The way to evaluate the outcome of the practical test(s) is fully defined in the applicable standard, no additional criteria or levels are necessary. The overall result is either a pass or fail. The practical test has a weighting in the overall assessment of 50%.

The performance of the apprentice in the oral examination is scored out of 100 with the pass mark set at 60. The weighting of the oral examination in the overall assessment is 15%.

The performance of the apprentice in the professional interview is scored out of 100 with the pass mark set at 60. The weighting of the professional interview in the overall assessment is 15%.

The grading is summarised in Table 1

Table 1

Part No.	Type of Assessment	Weighting	Pass mark
1	Knowledge Test	20%	60%
2	(a) Practical test (b) Oral Examination	50% 15%	Pass 60%
3	Professional Interview	15%	60%

In order to successfully complete the end-point assessment, the apprentice must pass all parts. In order to achieve a merit grade, the apprentice must pass all parts and, in addition, achieve an overall mark of 87.5 or more calculated as follows:

Part 1 – Mark obtained $\times 20/100 = k$

Part 2a – 50

Part 2b – Mark obtained $\times 15/100 = o$

Part 3 – Mark obtained $\times 15/100 = p$

Overall mark = $k + 50 + o + p$

If the apprentice is unsuccessful in any of the three parts, the following re-test conditions will apply:

2.4 Unsuccessful Candidates

Knowledge test – two retests are available in the sections failed. If the apprentice fails the second retest, he/she must retake the applicable theoretical training before taking another test. Results of all knowledge tests are to be passed back to employer for review. A retest will not be permitted on the same day as the initial test.

Practical test and oral examination – one practical re-test is available but further welding practice relevant to any shortcomings identified in the test is recommended. If the apprentice fails the oral examination, two further attempts at this part are permitted. If the second retest is failed, further training will be required. At the Authorised Examiner's discretion with appropriate conditions and time permitting a practical retest may be conducted on the same date as the initial practical tests. Oral examinations will not be permitted on the same day as the initial test..

Professional Interview – the shortcomings identified in the interview must be addressed and documented evidence provided before a second interview can be conducted. If the apprentice fails to meet the requirements in the second interview, at the discretion of the Authorised Examiner, the apprentice can be given the option of presenting documentary evidence, within 14 days, of how

he/she has addressed the shortcomings identified during the interview. The Authorised Examiner may then decide to award a pass grade on the basis of any additional evidence presented, or may decide on an alternative course of action.

2.5 Successful Candidates

Candidates who successfully complete the end-point assessment will have their details uploaded onto the EPAO Certification Service Information Management Services System for the issue of the Apprenticeship Certificates.

2.6 Qualification Certificates

Qualification certificates are issued in accordance with the standard being applied, see CSWIP-PED-1-99 or CSWIP-QPW-25-12.

Certificates are issued to the sponsoring organisation.

Duplicate certificates may be issued to the sponsoring organisation to replace any which are lost or destroyed. This will only be done after extensive enquiries by TWI Certification Ltd.

The period of validity of a qualification certificate and the conditions of renewal are governed by the selected standard.

2.7 Application for Examination and Fees

Registered Training Providers will be required to submit an application form, see Appendix 1. All the information requested must be on these forms. No applications can be considered confirmed until receipt of correctly completed documents. Application forms ask for specific details and must be signed to the effect that these details are correct.

In the event of a false statement being discovered on forms any examination undertaken will be declared null and void. A certificate is automatically invalidated if there are any outstanding examination fees in respect of that certificate.

Candidates who breach examination rules will not be accepted as a candidate for any CSWIP examination for a minimum period of five years from the date of the examination where cheating, attempt to remove or removal of examination material, was established to have taken place.

2.8 Complaints and appeals

An aggrieved party in a dispute which considers itself to have reasonable grounds for questioning the competency of a CSWIP qualified person may petition the Governing Board for withdrawal of the certificate. Such a petition must be accompanied by all relevant facts, and if in the opinion of the Board an adequate case has been presented, a full investigation of the circumstances under dispute will be initiated. If the petition is substantiated to the satisfaction of the Board, the certificate will be withdrawn and no renewal or recertification made available without a further test.

Appeals against failure to certify or against non-renewal of the certificate may be made by the apprentice or the employer upon application in writing to the Governing Board.

3 RECORDS

TWI Certification Ltd maintains records of successful and unsuccessful candidates. These records are accessible to the Governing Board or its nominees at all reasonable times.

4 ADDRESSES

For further general information contact:

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+44 (0) 1223 894219

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5 References

1. EWF/IIW Guideline – European/International Welder. Minimum Requirements for the Education, Examination and Qualification. IAB-089 r5-15.
2. BS 4872 - Specification for approval testing of welders when welding procedure approval is not required.
3. ISO 9606-1. Qualification testing of welders. Fusion welding. Steels. and ISO 9606-2. Qualification test of welders. Fusion welding. Aluminium and aluminium alloys.
4. ASME IX - ASME Boiler and Pressure Vessel Code Section IX-Welding, Brazing, and Fusing Qualifications.
5. AWS D1.1. American National Standard. Structural Welding Code – Steel.
6. Employer Occupational Brief for Level 2 and 3 Welding Apprenticeship Standards:
<https://www.theweldinginstitute.com/careers-and-education/careers-in-welding/welding-trailblazer-apprenticeship/>
7. ISO/IEC 17024 - Conformity assessment - General requirements for bodies operating certification of persons
8. BS EN ISO 9712 - Non-destructive testing. Qualification and certification of NDT personnel
9. ISO/IEC 17025 - General requirements for the competence of testing and calibration laboratories

