

DRAFT

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**Standard for AWS Certification
of Underwater Welding Inspectors (CUWI)**

1. Scope

1.1 This standard establishes the requirements for AWS certification of underwater welding inspection personnel. It describes how personnel are qualified, and the principles of conduct and practice by which certification may be maintained. Any oral or written claim of certification under the guidelines established herein shall be made only by those individual CUWIs who are, at the time of the claim, current and in compliance with all sections of this standard.

1.2 A single level of certification is provided: Certified Underwater Welding Inspector (CUWI).

1.3 In the certification process, AWS conducts an examination to determine a person's general knowledge of underwater welding inspection and related technical areas. No determination is made of an individual's capabilities in applying that knowledge within a specific work environment or under actual working conditions.

1.4 In the certification process, the employer is responsible for determining that a person has all qualifications as stated herein.

1.5 It shall be the responsibility of the employer to determine that the CUWI is capable of performing the duties involved in his/her particular underwater welding inspection assignment.

1.6 This standard is intended to supplement the requirements of an employer, code, or other documents and shall not be construed as a preemption of the employer's responsibility for the work or for the performance of the work.

1.7 **Safety Precautions.** This document is not intended to address safety and health matters regarding certified underwater welding inspectors. Safety and health requirements are provided in ANSI Z49.1, *Safety in Welding and Cutting*, PDI Manual (?), other safety and health standards, and federal, state, and local government regulations. This document only covers the rules of certification.

2. Levels of Certification

There is a single level of AWS certification of underwater welding inspection personnel defined as follows:

Certified Underwater Welding Inspector (CUWI). A person certified by AWS as meeting the qualification requirements of **5** and **6**.

3. Definitions

The welding terms used in this standard are defined in ANSI/AWS A3.0, *Standard Welding Terms and Definitions*. Other terms used in this standard are defined as follows:

approved. To accept as satisfactory.

acceptance criteria. Specified limits placed on characteristics of an item or process defined in codes, specifications, or other documents.

applicant. A person who applies to the AWS for certification.

AWS. The American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126.

certificate. The document issued to the applicant on successful completion of the requirements for certification.

certification. The act of determining, verifying and attesting in writing to the qualification of personnel in conformance to specified requirements.

Certification Department. The Certification Department of the American Welding Society.

code. A standard suitable for adoption by a governmental authority.

Committee. The Certification Committee of the American Welding Society.

CWE. Certified Welding Educator.

CUWI Certified Underwater Welding Inspector

CWI Certified Welding Inspector

NDE. Nondestructive Examination. The act of determining the suitability of some material or component for its intended purpose using techniques that do not affect its serviceability.

QA. Quality Assurance. Specification of quality assurance methods, procedures, or criteria for employer or client. Review quality assurance programs of vendors, subcontractors, or other organizations. Conduct or supervise quality audits of vendors, subcontractors, or other organizations.

qualification. Demonstrated training, skill, knowledge and experience required for personnel to perform the duties of a specific job.

qualified. Having complied with specific requirements.

QC. Quality Control. Detection and measurement of weld discontinuities or the supervision of individuals so involved. Specification of quality control methods, procedures, and acceptance criteria. Review of quality control programs of vendors, subcontractors, or other organizations.

specification. A standard suitable for adoption in procurement documents.

standard. A generic term incorporating codes, specifications, recommended practices, classifications, methods, and guides that have been prepared by a sponsoring committee, and approved and adopted in accordance with established procedures.

SCWI Senior Certified Welding Inspector.

verb usage. As used in this standard, the word **shall** denotes a requirement, the word **should** denotes a guideline, and the word **may** denotes a choice.

4. Functions

4.1 Capability

4.1.1 The CUWI shall be able to perform inspections or to verify that the work inspected, and records maintained, conform to the requirements of the applicable standards.

4.2 Duties

The Underwater Welding Inspector's specific duties are defined by the employer; however, applicants shall be able to demonstrate their abilities to perform the following duties for both underwater and surface welding operations:

4.2.1 Interpret drawings and other documents.

4.2.2 Verify that the base materials and consumable welding materials conform to the specifications and that welding filler metals used are as specified for each base material or combination of base materials.

4.2.3 Verify that the welding equipment to be used for the work is appropriate for use with the welding procedure and has the capability to meet the applicable requirements of the welding procedure.

4.2.4 Verify that the welding procedures are as specified and are qualified, and that the welding is performed in conformance to the applicable procedure.

4.2.4.1 Witness performance and testing of procedure qualification test assemblies, or supervise these activities when performed by outside agencies.

4.2.4.2 Verify documentation of procedure qualification test results.

4.2.5 Verify that welders, welding operators, and tack welders have been qualified in conformance to the applicable standards, and that they are qualified to use the welding procedures specified for the work.

4.2.5.1 Witness testing of the welder test assemblies and/or welding operator qualification test assemblies, or supervise these activities when performed by outside agencies.

4.2.5.2 Verify documentation of performance qualification test results.

4.2.5.3 Require requalification if there is evidence the welder's or welding operator's work does not conform to the requirements of the applicable standard.

4.2.5.4 Require requalification if the welder's or welding operator's qualification is not current.

4.2.6 Inspection of Work

4.2.6.1 Verify that only approved or qualified welding procedures are used for the work.

4.2.6.2 Verify that the edge preparation or joint geometry meet the requirements of the underwater welding procedure and drawings.

4.2.6.3 Verify that the specified filler metals are used and that filler metals are maintained in proper condition, per requirements, or as recommended by the manufacturer.

4.2.6.4 Verify that the technique and performance of each welder, welding operator, and tack welder are as specified.

4.2.6.5 Verify that the work conforms to requirements of the applicable standards, drawings, or other documents.

4.2.6.6 Verify that the work inspected is identified and documented in accordance with specified requirements.

4.2.7 Nondestructive Examination

4.2.7.1 Perform the required visual examinations.

4.2.7.2 Verify that the required visual and other nondestructive examinations have been performed by qualified personnel in the specified manner. Review the resulting information to ensure that the results are complete.

4.2.7.3 Perform any further nondestructive examinations that are required, provided qualifications are in conformance to the specified requirements.

4.2.8 Records

4.2.8.1 Prepare clear and concise reports and verify that records of the underwater welding procedure, the underwater welding procedure qualification, the welder's, welding operator's and tack welder's qualifications, the control of welding materials, and the results of examinations are maintained.

5. Application Requirements

5.1 Each applicant for certification as a Certified Underwater Welding Inspector (CUWI):

5.1.1 Shall hold a valid CWI or SCWI certificate issued by AWS in accordance with ANSI/AWS QC1.

5.1.2 Shall have no fewer than five years experience in an occupational function that has a direct relationship to underwater welded assemblies fabricated to national or international standards and be directly involved in one or more of the following:

5.1.2.1 **Design.** Preparation of plans and drawings for weldments.

5.1.2.2 **Production.** Planning and control of welding materials, underwater welding procedures and underwater welding operations for weldments.

5.1.2.3 **Construction.** Fabrication and/or erection of weldments.

5.1.2.4 **Examination.** Detection and measurement of weld discontinuities and verification of fabrication requirements described in 4.2.

5.1.2.5 **Repair.** Repair of welds that are defective.

5.1.3 Shall submit, with the application, written verification of the documented employment. This verification shall be completed and signed by the applicant's most recent employment supervisor or the appropriate personnel department staff, attesting to the applicant's employment activities of which he/she has personal knowledge or documentation.

5.1.4 Shall be familiar with and understand fundamentals of the following processes as applied to underwater welding and cutting:

SMAW	GTAW	SW	Thermal Cutting
FCAW	OFW	GMAW	Mechanical Cutting

Note: Cutting processes include those that are applied to the fabrication and repair of underwater weldments.

5.1.5 Shall be familiar with and understand the following examination methods:

VT	UT	RT	MT
PT	AET	LT	ET

5.1.6 Shall be thoroughly familiar with and capable of performing the duties described in **Section 4. Functions**.

6. Examination Requirements

6.1 Applicants shall meet the following examination requirements to be considered for certification as CUWI:

6.1.1 Pass a written examination as follows:

6.1.1.1 An open book test on the requirements of AWS D3.6.

6.1.1.2 A closed book test on topics including, but not limited to, underwater welding, underwater cutting and underwater nondestructive testing processes.

Notes: (1) CUWIs who fail to meet the minimum score for certification upon reexamination shall be considered no longer certified. Such persons will be notified of their status in writing.

7. Certification

7.1 Documentation

The American Welding Society shall issue to each CUWI applicant who complies with the requirements of Section 5 and 6, a serialized (unique number) certificate and a wallet card stating that the applicant has met the AWS certification requirements. Certification shall be valid for three years unless revoked for reasons defined in 8.6 and the authority of **Section 9. Revocation**. The certificate shall indicate the date of certification. The wallet card shall indicate the expiration date of certification and any need for corrective lenses for near vision acuity. It shall also state results of color vision tests.

7.2 Verification

The American Welding Society shall release certification test results only to the applicant CUWI, or to a person or agency designated by the applicant CUWI upon written request, and with notarized and witnessed release. The exceptions to this requirement are members of American Welding Society staff and members and officers of the Certification Committee who may request and receive access to all information relating

to program participants in the necessary pursuit of their duties on behalf of the program. Test results, in addition to those provided at the time of examination, may require payment of a nominal administrative fee. Verbal requests for verification of status and certification number of CUWIs shall be provided to requestors without charge. Only the certification number, date certified and current status (current, revoked, etc.) shall be provided by American Welding Society staff members without the express, written approval of the applicant CUWI.

7.3 Reciprocity

The American Welding Society may issue a CUWI certificate to applicants who have met requirements equivalent to those of **5** and **6**, the latter by successfully completing the examination of a reciprocal country, and holding a currently valid certificate. Reciprocity periods are for 3-year terms from the date of validation, or for the certification period remaining within his/her country's certificate, whichever is less. Recertification for any remaining months or years (maximum of 3 years) of the CUWI's home country's certification may be accomplished by submitting a "Renewal Application."

Notes: (1) Except as noted in **12.2.2**, recertification by application is limited to a total of nine years without examination.

(2) Reciprocity certifications shall remain in force until such time as the normal certification period has elapsed, or upon findings by the Committee, and confirmed by the Board of Directors, that the particular program upon which the original reciprocity was based is not being administered in conformance to the submitted specifications. Changes to programs subsequent to granting reciprocity shall be cause for reevaluation by the Qualification and Certification Committee of issuance of certifications beyond the date of change.

Contact the AWS Certification Department for a listing of current reciprocal agreements.

8. Code of Ethics

Preamble. In order to safeguard the health and well-being of the public and to maintain integrity and high standards of skills, practice, and conduct in the occupation of underwater welding inspection, the American Welding Society CUWIs shall be cognizant of the following principles and the scope to which they apply, with the understanding that any unauthorized practice is subject to the Committee's review and may result in suspension, reprimand, or revocation of certification.

8.1 Integrity. The CUWI shall act with complete integrity in professional matters and be forthright and candid to their employer, the regulator or employer's customer, and with the Committee or its representatives, on matters pertaining to this standard.

8.2 Responsibility to the Public. The CUWI shall act to preserve the health and well-being of the public by performing duties required of underwater welding inspection in a

conscientious and impartial manner to the full extent of the inspector(s)' moral and civic responsibility and qualification. Accordingly, the CUWI shall:

8.2.1 Undertake and perform assignments only when qualified by training, experience, and capability.

8.2.2 Present credentials upon request.

8.2.3 Neither falsely represent current status nor seek to misrepresent the certification level (CUWI) by modification of certification documents or false verbal or written testimony of current level or status.

8.2.4 Be completely objective, thorough, and factual in any written report, statement, or testimony of the work and include all relevant or pertinent testimony in such communiqués or testimonials.

8.2.5 Sign only for work that the inspector has inspected, or for work over which the inspector has personal knowledge through direct supervision.

8.2.6 Neither associate with nor knowingly participate in a fraudulent or dishonest venture.

8.3 Public Statements

8.3.1 The CUWI shall issue no statements, criticisms or arguments on weld inspection matters connected with public policy which were inspired or paid for by an interested party, or parties, without first identifying the party, the speaker, and disclosing any possible financial interest.

8.3.2 The CUWI shall publicly express no opinion on underwater welding inspection subjects unless it is founded upon adequate knowledge of the facts in issue, upon a background of technical competence pertinent to the subject, and upon honest conviction of the accuracy and propriety of the statement.

8.4 Conflict of Interest

8.4.1 The CUWI shall avoid a conflict of interest with the employer or client and shall disclose any business association, or circumstance that might be so considered.

8.4.2 The CUWI shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties or their authorized agents.

8.4.3 The CUWI shall not solicit or accept gratuities, directly or indirectly, from any party, or parties, dealing with the client or employer in connection with the CUWI's work.

8.4.4 The CUWI shall, while serving in the capacity of an elected, retained, or employed public official, neither inspect, review, nor approve work in the capacity of a CUWI on projects also subject to the inspector's administrative jurisdiction as a public official, unless this practice is expressly dictated by a job description and/or specification and all affected parties to the action are in agreement.

8.5 Solicitation of Employment

8.5.1 The CUWI shall neither pay, solicit, nor offer, directly or indirectly, any bribe or commission for professional employment with the exception of the usual commission required from licensed employment agencies.

8.5.2 The CUWI shall neither falsify, exaggerate, nor indulge in the misinterpretation of personal academic and professional qualifications, past assignments, accomplishments and responsibilities, or those of the inspector's associates. Misrepresentation of current CUWI certification status at the time of, or subsequent to, submission of requested employment information, or in the solicitation of business contracts wherein current certification is either required or inherently beneficial (advertisements for training courses, consulting services, etc.) shall be a violation of this section.

8.5.3 The CUWI credentials may only be used for the field of welding inspection. AWS has not qualified these individuals for non-welding related inspection.

8.5.4 The CUWI shall not disclose proprietary information, (i.e., commercially valuable information not generally known) concerning business affairs or technical processes of a present or former client or employer, without their written consent, except as necessary to perform the duties of a CUWI.

CAUTION: While the CUWI may have established excellent credentials, certification alone may not legally qualify the Inspector to provide inspection services to the public. Contract documents, or building or jurisdiction laws may require inspection to be performed under the direction and responsibility of others, such as a Registered Professional Engineer.

8.6 **Unauthorized Practice.** Any violation of any part of the standard of conduct prescribed by this standard if related to a CUWI's occupation, including any violation of the Code of Ethics contained in this standard, shall constitute any unauthorized practice subject to the imposition of sanctions.

9. Revocation

9.1 **Committee.** The Committee shall have the power to suspend, refuse renewal, or revoke the CUWI's certification for misrepresentation of facts regarding personal qualifications, status, assignments, etc., relating to CUWI's certifications whether such misrepresentation was made at the time of application or on subsequent

applications (renewal, etc.). The Committee may place on probation or reprimand a certificate holder, if found guilty of any unauthorized practice (as outlined in Section 8.6 Unauthorized Practice) in a proceeding conducted in conformance to *AWS QC9, Administrative Procedures for Alleged Violations of AWS Certification Programs* (Available from the AWS Certification Department).

9.2 **Courts.** The Committee may apply to any court of competent jurisdiction for further enforcement of its administrative decisions and rulings.

10. Reinstatement

Reinstatement of a revoked certificate shall be allowed with no penalty or prejudice to the individual provided the reason for such revocation has been rectified to the Committee's satisfaction.

11. Upgrading of Certification

n/a

12. Recertification (Renewal)

12.1 The CUWI shall be responsible for:

- (1) Maintaining CUWI certification by submitting either:
 - (a) A "Renewal Application" postmarked by the expiration date* of the current certification, or
 - (b) A written request for "Renewal Application" postmarked at least one calendar month prior to expiration of the current certification.
- (2) Maintaining a current address with the AWS Certification Department**.

*Certification becomes effective on the first day of the month following the date of examination, and expires on the first day of that month, 3 years later. An expiration grace period exists until the last day of that month.

**NOTIFICATIOAN OF ADDRESS CHANGES(S) TO ONE DEPARTMENT, e.g., Welding Journal subscription or memberships, does not automatically notify other departments, such as the AWS Certification Department. Notify the Certification Department at AWS directly.

12.2 The CUWI shall be recertified every three years by reexamination or, alternatively, meet certain requirements for renewal without examination. However recertification without examination is limited to two consecutive three-year periods. The CUWI shall, upon expiration of his/her certification, cease to be a CUWI and may not continue to advertise as such.

12.2.1 The CUWI requesting renewal of certification shall attest to two years activity, of their three-year certification period, in the practice of underwater welding inspection or related activities as defined in **Section 5. Application Requirements**. The CUWI shall complete a current "Renewal Application." One of the two years of activity may be fulfilled by satisfactory documentation of the completion or teaching of a minimum of forty (40) contact hours of training courses whose content must be in the occupational skill of underwater welding, or subjects related to underwater welding, its application, control, materials, and processes, as follows:

- 1) Courses offered by accredited universities, colleges, or technical (including trade) schools.
- 2) Courses offered by the AWS Education Department
- 3) AWS Education Department courses offered by AWS Sections.
- 4) Home study courses as long as the candidate provides documentation that he or she successfully completed the course and passed an examination.
- 5) Certificates of completion, diplomas, or transcripts must be sent to the AWS Certification Department directly from the issuing institution or organization.
- 6) Trainers must submit documentation showing they performed forty (40) contact hours of training.

12.2.2 After nine years from the date of initial certification, and each nine years thereafter, recertification shall be by completing the current CUWI examination (current examination at the time of application for recertification).

12.2.3 The CUWI applying for renewal of certification that has expired or those choosing recertification by examination will be considered as new applicants, and should contact the AWS Certification Department for the correct procedure.

12.2.4 The CUWI shall maintain his/her certification as a CWI or SCWI as a requirement for recertification as a CUWI.