AWS QC5-91

AWS Standard for Certification of Welding Educators

American Welding Society

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Prepared by
AWS Qualification and Certification Committee

Under the Direction of
AWS Education and Certification Council

Approved by
AWS Board of Directors
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Abstract

This Standard describes a program directed by the American Welding Society for the certification of Welding Educators.

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

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Foreword

(This Foreword is not a part of AWS QC 5-91, *AWS Standard for Certification of Welding Educators,* but is included for information purposes only.)

The Welding Educator is a person who recognizes welding training requirements, prepares instruction plans, conducts training classes and evaluates student performance. The Welding Educator may teach using prepared instructional materials or prepare original instructional materials. The Welding Educator shall conduct welding classes including both skills and technical. The Welding Educator must be thoroughly familiar with welding processes, welding procedures, welder qualifications, materials, the limitations of weld testing, must be able to read drawings, prepare and keep records, prepare and make reports. The activites performed by the Welding Educator shall be consistent with these requirements; and with technical and ethical principles. The Welding Educator should be able to work with the school administrator or a welder with ease and an appreciation of the role of each.

The AWS program for the certification of Welding Educators has been developed to define minimum standards for welding educators and to provide a means of recognition for those who demonstrate that they have the skills, knowledge, and experience in the field of welding education.

Comments and suggestions for improvement are welcome. They should be sent in writing to the Secretary, AWS Qualification and Certification Committee, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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AWS Standard for Certification of Welding Educators

1. Scope

1.1 This standard establishes the requirements for the AWS certification of Welding Educators, describes how personnel are qualified, and outlines the principles of conduct and practice by which certification may be maintained.

1.2 In the certification process, the AWS conducts examinations which verifies a person's skill and knowledge of welding fabrication and requires documentation of their teaching skills.

1.3 It shall be the responsibility of the employer to determine that a person is capable of performing the duties involved in their welding educator assignment.

1.4 This standard is intended to supplement the requirements of an employer, or of state regulations; it shall not be construed as a preemption of the employer's responsibility for the work or for the performance of the work.

2. Levels of Certification

A Certified Welding Educator (CWE) is a person certified by AWS as having met the qualification requirements of 5.1 and section 6. This shall be the only level of certification of Welding Educators.

3. Definitions

Terms used in this Standard are defined as follows:

Acceptance Criteria. Specified limits placed on one characteristic of an item or process defined in codes, standards or other contract requirement documents.

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

AWS. The American Welding Society

Certificate. A document issued to the candidate on successful completion of the requirements for certification.

Certification. The act of determining, verifying, and attesting in writing to the qualification of personnel in accordance with specified requirements.

Fabrication. To construct or manufacture to a specification.

Inspection. Examination or measurement to verify whether an item or activity conforms to specified requirements.

Inspector. A person who performs an inspection function to verify conformance to specified requirements.

Other Terms. All other terms used herein are defined by ANSI/AWS A3.0, *Standard Welding Terms and Definitions.*

Q&C Committee. The Qualification and Certification Committee of the American Welding Society.

Q & C Department. The Qualification and Certification Department of the American Welding Society.

Qualification (Personnel). Demonstrated skill, training, knowledge and experience required for personnel to properly perform duties of a specific job.

Qualified. To have demonstrated the ability to weld with a process to an industry standard.

**NOTE.* This may be done by welding some test plate, such as the AWS D1.1 tacker test, plate test, or pipe test with acceptance verified by testing by an independent testing laboratory to a published standard.

Terminology Guideline. As used in this Standard, the word *shall* denotes a requirement; the word *should* denotes a guideline; and the word *may* denotes a choice.

Training Institution. Organizations which train people for employment in the field of welding. This includes for fee organizations open to the public or in-house training organizations who train only their own employees.

Verification. The act of reviewing, inspecting, testing, checking, auditing or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements.

Weldment. An assembly whose component parts are joined by welding.

4. Function

The Welding Educator has the responsibility to direct and perform operations associated with welder training and classroom instruction. The activities begin before instruction and continue through the instruction process and do not end until both the students and instruction process have been evaluated. Each employer is responsible for defining the specific duties of a Welding Educator in the respective place of employment. The AWS Certified Welding Educator shall be able to demonstrate the capability of performing the tasks defined in this standard.

The tasks of a Welding Educator include, but are not limited to:

4.1 Welding Codes, Drawings and Specifications. The Welding Educator shall be capable of reading and

explaining typical welding codes, drawings, and specifications. This requires a knowledge of welding symbols and of welding definitions and terminology.

4.2 Base Material and Welding Materials. The Welding Educator instructs students on base materials and their weldability characteristics and on welding filler metal types and characteristics.

4.3 Welding Equipment. The Welding Educator conducts instruction on the characteristics and operation of various power sources and other related equipment, provides basic safety instruction in the use of the equipment, troubleshoots and demonstrates the proper use of equipment.

4.4 Welding Skills. The Welding Educator shall be qualified per AWS or equal standards with the welding processes to be taught.

4.5 Review of Welding Instructions. The Welding Educator shall review the written welding instructional materials to determine that they comply with the appropriate code or standard. The Welding Educator may write new welding instruction or lesson plans and shall be able to perform all testing required to qualify welding students.

4.6 Evaluation of Welder Training. The Welding Educator evaluates the performance of welding students to verify that they are properly trained and qualified in accordance with the applicable welding procedures. The Welding Educator reviews and verifies that the work being performed follows the instructions.

4.7 Inspection. The Welding Educator performs visual inspections of the "in-process" and completed weldments to confirm that they comply with the documents.

4.8 Reports. The Welding Educator prepares clear and concise reports of the reviews, inspection results, and performance data.

4.9 Welding Safety. The Welding Educator instructs welding safety in accordance with ANSI/ASC Z49.1, *Safety in Welding and Cutting* (published by the American Welding Society) and with Occupational Safety and Health Administrative Rules as written in the Code of Federal Regulations (CFR) and other approved safe practices.

5. Education and Experience Requirements

The following applies to each applicant for certification as a Certified Welding Educator (CWE):

5.1 The applicant shall be a high school graduate; or hold a state or military approved high school equivalency diploma.[1]

5.2 The applicant shall have no less than five years experience in an occupational function that has a direct relationship to weldments *fabricated to a code* or standard and shall be *directly involved* in one or more of the following:[2]

(1) Production. Planning and control of welding materials, welding procedures and welding operations for weldments.

(2) Construction. Welding, fabrication and erection of weldments.

(3) Inspection. Detection and measurements of weld discontinuities and the verification of fabrication requirements.

(4) Repair. Repair of welds that were found to be defective.

5.3 The applicant shall submit written verification of documented employment with the application. This verification shall be completed and signed by the applicant's most recent employment supervisor or the appropriate personnel department staff.

5.4 The applicant shall be able to explain and demonstrate the welding and cutting processes to be taught.

5.5 The applicant shall be thoroughly familiar and capable of performing the duties described in section 4, Function.

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1. *Acceptable Alternatives* to 5.1 and 5.2. *with* supporting documentation (e.g., copies of transcripts, letters of reference, etc., which specify credited hours of training, quarter hours or semester hours):

(a) A maximum of two years of post high school education may be substituted for an equal number of years of the required five years' experience, provided the studies were relevant to any of the functions covered in 5.2. Credits are given as follows:

Two years maximum in engineering technology, engineering, physics or sciences.

(b) Engineering/Technical School courses. Two years maximum of successfully completed courses in a curriculum can be applied to (a) above.

(c) Trade/Vocational Courses. One year maximum of successfully completed courses in a curriculum related to welding can be applied to (a) above.

"Courses in the curriculum" means courses within a body of courses offered toward a degree, or which can be applied to a degree in (1) above. "Successfully completed courses" means a completed quarter or semester with credit in that course. Documentation of the number of actual hours completed is necessary.

2. Relevant teaching experience may be substituted for two years of the five years' experience requirement with proper documentation (e.g., photocopied summaries of subjects taught, teaching certificates, and letters of reference). Relevant experience shall be considered on the following basis: Full time teaching of the occupational skill of welding or of subjects related to welding, its application, its control, and its materials and processes in a secondary or post secondary institution.

6. Examination Requirements

The following applies to a CWE Applicant:

6.1 The applicant shall pass a written examination on fundamental welding principles including welding processes, nondestructive testing processes, safety, basic welding metallurgy, welding symbols, print reading, equipment, process/equipment trouble-shooting, and basic arithmetic or have passed either the CWI or CAWI Closed Book examination.

6.2 The applicant shall pass a test on practical welding inspection including determining qualification standards from a code or specification or have passed either the CWI or CAWI Practical examination.

6.3 The applicant shall have a valid AWS Certified Welder ID/Certification card or its equal, or shall pass a valid AWS Certified Welder test, for the welding process to be taught.

6.4 The applicant shall furnish evidence of having met the instructional methods requirements of the applicant's school, college, or training institution. Evidence shall also be furnished of successful classroom and laboratory instruction. This shall consist of written evaluation by the applicant's administrator and recommendation that the applicant be recognized as an AWS Certified Welding Educator.

7. Certification

The American Welding Society shall issue to each CWE applicant who complies with the requirements of sections 5.1 and 6, as applicable, a serialized (unique number) certificate and a wallet card stating that the applicant has met the AWS certification requirements. Certification shall be valid for four years unless revoked for reasons defined in 8.6 and section 9, Revocation. The certificate shall indicate the date of certification. The wallet card shall incidate the expiration date of certification.

8. Code of Ethics

Certified Welding Educator (CWE)

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 welding educator, the American Welding Society CWE 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 Q&C Committee's review and may result in the suspension or revocation of certification.

8.1 Integrity. The CWE shall act with complete integrity in professional matters and be forthright and candid with the Q&C Committee or its representatives on matters pertaining to this standard.

8.2 *Responsibility to the Public.* The CWE shall act to preserve the health and well-being of the public by performing the duties required of welding instruction in a conscientious and impartial manner to the full extent of the educator's moral and civic responsibility and qualification.

8.2.1 The CWE shall undertake and perform as signments only when qualified by training, experience, and capability. Credentials shall be shown upon request.

8.2.2 The CWE shall 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 communiques or testimonials.

8.2.3 The CWE shall sign only for work that the CWE has completed, or for work over which the CWE has personal knowledge through direct supervision.

8.2.4 The CWE shall neither associate with nor knowingly participate in a fraudulent or dishonest welding venture.

8.3 Public Statements

8.3.1 The CWE shall issue no statements, criticisms or arguments on welding matters connected with public policy which have been inspired or paid for by an interested party or parties without first identifying the party, the speaker, and disclosing any possible pecuniary interest.

8.3.2 The CWE shall not publicly express an opinion on a welding subject unless it is founded upon adequate knowledge of the facts at 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 CWE shall avoid conflict of interest with the employer or client and shall disclose any business association or circumstance that might be so perceived.

8.4.2 The CWE 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 CWE shall neither solicit nor accept gratuities, directly or indirectly, from any party or parties dealing with the client or employer in connection with the CWE's work.

8.5 Solicitation of Employment

8.5.1 The CWE shall not pay, solicit, or 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 CWE shall not falsify, exaggerate, or indulge in the misinterpretation of personal academic and professional qualifications, past assingments, accomplishments, and responsibilities, or those of the inspector associates.

8.5.3 The CWE is not a Certified Welding Inspector unless certification has been attained in accordance with AWS QC 1, *AWS Standard for Certification of Welding Inspectors.*

CAUTION: While the CWE may have established excellent credentials, certification alone may not legally qualify the CWE to provide training services to the public. Statutes may require training to be performed under the direction and responsibility of others.

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

9. Revocation

9.1 Committee. The Q&C Committee shall have the power to suspend, refuse the renewal of, or revoke the CWE's certification for misrepresentation of facts regarding personnel qualifications and assignments, relating to CWE's certifications and to place on probation, or to reprimand the certificate holder, if found guilty of an unauthorized practice in a proceeding conducted in accordance with the "Administrative Procedure for Alleged Violations" (available from the Q&C 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 cause for such revocation has been rectified to the committee's satisfaction.

11. Recertification (Renewal)

The CWE shall be responsible for the following:

(1) Maintaining a current address with the Q&C Department for mailing of correspondence relative to the Educator's application, examination, certification/recertification.

(2) Submitting either a "Renewal Application" postmarked by the expiration date of the current certificate, or a written request for "Renewal Application" postmarked at least one calendar month prior to the expiration date.

11.1 The CWE may be recertified every four years by meeting the requirements for renewal.

11.1.1 To request the renewal of certification, the CWE shall complete a current "renewal of certification" form. Applicants shall further attest to two years of activity, during their four-year certification, in the practice in the welding education or in related activities as defined in 5.2. The requirement for two years of relevant activity may be reduced to one year by satisfactorily completing a Q&C Committee approved course presented by AWS Education Department.

11.1.2 When applying for the renewal of a certification that has expired or choosing recertification by examination, the CWE shall be considered as new applicants and shall require only the completion of a "Renewal Application."

NOTE: The Q&C Department shall notify each CWE of the expiration of certification and requirements of recertification. Notice shall be mailed approximately 90 days in advance of the expiration date** of the certification.

* NOTIFICATION OF ADDRESS CHANGE(S) TO ONE AWS DEPARTMENT, (e.g.): Notify the Q&C Department at AWS directly as journal subscription or membership, does not automatically notify other departments, such as Q&C.

** Certification becomes effective on the first day of the month following the date of examination, and expires on the first day of that month, 4 years later. An expiration grace period exists until the last day of that month.