



Supplement G— AWS Performance Qualification Test



American Welding Society



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qualification

**AWS QC7-93 Supplement G
AWS Performance Qualification Test**

**AWS QC7-93
Standard for
AWS Certified Welders**

Developed by
AWS Qualification and Certification Committee

Under the Direction of
AWS Education and Certification Council

Approved by
AWS Board of Directors

Abstract

This Supplement G to AWS standard QC7-93 describes testing administered by Accredited Test Facilities to the requirements of AWS QC 4, Standard for Accreditation of Test Facilities for AWS Certified Welder Program.



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Foreword

(This Foreword is not a part of the Supplement G to AWS QC7-93, *Standard for AWS Certified Welders*, but is included only for information.)

The standard to which this Supplement applies contains the criteria for AWS Certified Welder Program and the AWS National Registry of Welders. Listing on the AWS National Registry of Welders is at the option of the individual welder.

This Supplement G should be used in conjunction with AWS QC7-93, *Standard for AWS Certification of Welders*. This Supplement is not a standard unto itself and shall be considered only as a supplementary part of AWS QC7-93.

This Supplement G specifies requirements intended to provide an *alternative* for manufacturers and contractors to certify welders. Manufacturers or contractors may continue to conduct their own welder qualification programs as they have in the past, unless otherwise defined in contract documents.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, Qualification and Certification Committee, American Welding Society, 550 N.W. LeJeune Road, P.O. Box 351040, Miami, Florida 33135.

Official interpretations of any of the technical requirements of this standard may be obtained by sending a request, in writing, to the Director of Qualification and Certification Department, American Welding Society. A formal reply will be issued after it has been reviewed by the appropriate personnel following established procedures.

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QC-WF3A — Maintenance of Certification

Supplement G

AWS Performance Qualification Test

G1. Scope

This Supplement to the AWS QC7-93, *Standard for AWS Certified Welders*, provides a welder certification method not specifically based on a code but which may be acceptable for various codes. The rules for performance qualification are as defined by the applicable specification referenced in the WPS or as defined by the employer in the WPS or accompanying documentation (acceptance criteria).

G1.1 Program. The administrative rules for the American Welding Society (AWS) Certified Welder Program are provided in AWS QC7-93. Test facilities participating in the program are required to meet the provisions of AWS QC4, *Standard for Accreditation of Test Facilities for AWS Certified Welder Program*.

G1.2 Exclusion. Neither AWS QC7-93, nor this supplement prevents or supersedes a manufacturer or contractor from continuing to qualify welders in accordance with other standards or procedures. Manufacturers or contractors may impose supplementary requirements to this standard as deemed necessary.

G1.3 Safety Precautions. This document is not intended to address safety and health matters regarding the training of certified welders. This document only covers the rules of certification.

G2. Definitions

The terms used in this supplement are defined in ANSI/AWS A3.0-89, *Standard Welding Terms and Definitions*, and AWS QC7-93.

G3. Responsibilities Regarding AWS Certified Welders

G3.1 Employer's Responsibility. The employers of AWS Certified Welders are responsible for the work performed by their employees. The employer may accept the AWS certification without additional testing, or may add requirements as deemed necessary to meet their particular needs.

G3.2 Employer's Obligation. Manufacturers or contractors about to employ or employing AWS Certified Welders should be fully aware of the provisions of the AWS QC7-93 standard and this Supplement.

G3.2.1 The employer is responsible for all work performed by their employees; and therefore, should verify that the qualification(s) apply to the employer's work.

The employer shall determine specifically that the extent of qualification as stated on the AWS Welder Certification Card, and the accompanying documentation encompass the welding to be performed.

G3.2.2 The employer may obtain a copy of the welder's Performance Qualification Test Record, and other related documents, required by this supplement from the AWS Q&C Department.

G3.2.3 The welder's current status shall be verified with the AWS Q&C Department.

G3.2.4 The employer shall prepare and sign a certification record for each welder which shall include the completed Performance Test Description and test acceptance criteria (if not a referenced published standard).

G3.2.5 The employer shall specify the standard, or customer specification, and WPS for which the welder is to be qualified. This is to be accomplished by the employer

providing the Accredited Test Facility, the WPS and acceptance criteria to be used for qualification testing.

G3.2.6 The user of AWS QC7-93 may require the approval of the inspector, engineer of record, or owner. The employer shall obtain such approval when required.

G3.2.7 If the employer or inspector questions the welder's ability for a specific reason, the employer or inspector should file a formal documentation with the AWS Q&C Department in accordance with AWS QC7-93, 13, Revocation.

G3.3 AWS Responsibilities

G3.3.1 The AWS Q&C Department shall be responsible to maintain the following:

- (1) Application for AWS Certified Welder
- (2) Welder qualification test records
- (3) Decertification action reports
- (4) Maintenance of certification records
- (5) National Registry of Welders
- (6) List of Accredited Test Facilities
- (7) Welding Procedure Specification (WPS)
- (8) Procedure Qualification Record (PQR)
- (9) Acceptance criteria

G3.3.2 The Q&C Department will provide, upon request, individual welder verification of maintenance of certification.

G3.3.3 The Q&C Department will provide database searches upon request. These searches will include only those authorizing public disclosure on the application form.

G3.4 Test Facility Responsibility. The test facility is responsible for safety and health matters during testing at that location in addition to other requirements stated herein.

G4. Provision for Testing

G4.1 Welding Procedure Specification (WPS). The WPSs used to qualify welders according to this supplement shall be provided by the employer to the Accredited Test Facility. The employer may utilize AWS standard welding procedures. Neither AWS nor the Accredited Test Facility has any responsibility in ensuring that employer supplied WPSs, are applicable for production applications, or that successful welder qualification test results will be obtained from their use. Providing a written WPS for production applications is the responsibility of the employer.

G4.2 Acceptance Criteria. Acceptance criteria for welder qualification testing may either reference acceptance criteria from recognized, referenced published stan-

dards on the WPS document, or the employer may submit written acceptance criteria to the Accredited Test Facility for use in evaluating their employees' qualification test results. If provided by the employer, the acceptance criteria shall become a part of the Welder Certification Record and must accompany the application and supporting documents for record purposes by AWS Q&C Department.

G4.3 Test Facilities. The test facilities for the AWS Welder Certification Program shall meet all of the requirements of AWS QC4.

G4.3.1 The Accredited Test Facility shall have the responsibility to forward a copy of the welder's certification test procedure (WPS/PQR) and qualification test acceptance criteria — if not a referenced published standard — to the AWS Q&C Department. AWS standard welding procedures are excluded from this requirement. In addition, for test procedures used to certify more than one welder, only a single submission of the procedure revision used is required.

G5. Qualification Test Requirements

G5.1 Test Control. Performance qualification test coupons shall be welded in accordance with a written WPS as indicated in G4.1.

G5.2 Test Responsibilities

G5.2.1 Qualification testing shall be performed under the direction of a Test Supervisor. The Test Supervisor shall be a current AWS Certified Welding Inspector (CWI) in accordance with AWS QC1, *Standard for Qualification and Certification of Welding Inspectors*.

G5.2.2 The Test Supervisor shall be responsible for the performance qualification in accordance with this Supplement.

G5.2.3 If during qualification testing the Test Supervisor determines that the welder does not exhibit the skill required to perform the test satisfactorily, the test may be terminated.

G5.2.4 The Test Supervisor may allow a welder to retest immediately or may require additional documented training or practice prior to retesting in accordance with 7. Retests.

G5.2.5 The Test Supervisor shall be responsible for enforcement of test shop safety rules, procedures, and housekeeping as required by the Test Facility QA Manual.

G5.3 Qualification. The test facility is responsible for the actual qualification of the candidate welder. The Test Supervisor attests to the application of specified test

variables and acceptance criteria provided or referenced by the employer.

G6. Performance Test

G6.1 Identification. The applicant shall be assigned an identifying letter, symbol, or number coded to the applicant, and this identifier shall be marked on test materials and records.

G6.2 Verification. Prior to the initiation of welding, the applicant's photographic identification shall be checked by the Test Supervisor.

G6.3 Safety Equipment. The applicant shall use personal safety equipment applicable for the welding process. The safety requirements of the Accredited Test Facility shall conform to the requirements of ANSI/ASC Z49.1, *Safety in Welding and Cutting*, and shall be followed by the welder.

G6.4 Material and Equipment Check. The energy source, base material, filler metal, and fluxes and gases shall be checked by the Test Supervisor prior to tack welding and initiation of joint welding.

G6.5 Fit-Up. The applicant shall assemble the specified test assembly(ies) for welding in accordance with the requirements of the WPS. Test pieces may be assembled and tack welded in any position. The Test Supervisor shall verify the test assembly prior to welding in accordance with the requirements of the WPS.

G6.6 Assembly Control. The Test Supervisor shall witness placing of each test assembly in the specified welding position and shall mark the test assembly or secure it such that it remains in the specified position until welding has been completed.

G6.7 Positioning. All cleaning, grinding, chipping of slag, or other in-process operations shall be performed with the test assembly in the specified welding position. Evidence of removal of the test assembly or movement from the original location, except by accidental means (subject to concurrence by the Test Supervisor), shall be cause for test termination.

G6.8 Examination and Testing Methods and Acceptance Standards

G6.8.1 Visual Examination. The test specimens shall meet the visual acceptance criteria as provided in G4.2. The visual examination shall be performed by a Certified Welding Inspector.

G6.8.2 Mechanical Testing. The mechanical testing and acceptance criteria shall comply with that specified in the acceptance criteria referenced or provided as

part of the qualification test procedure. The Test Supervisor shall interpret the results.

G6.8.3 Radiographic Examination. Radiographic examination (when used as an alternate to mechanical testing) shall meet the acceptance criteria as specified in the acceptance criteria referenced or provided as part of the qualification test procedure. The personnel performing the radiographic work shall be qualified to a written practice prepared in accordance with ASNT SNT-TC-1A to either Level I or Level II. The personnel interpreting the film shall be qualified to Level II or III.

G7. Retests

Unless otherwise specified in the test procedure, if the welder performance test fails to meet the requirements, a retest may be allowed under the following conditions:

G7.1 Immediate Retest. An immediate retest may be made consisting of two welds of each type and position that the welder failed. All retest specimens shall meet all of the specified test requirements and acceptance criteria as the original test weld.

G7.2 Retest After Further Training or Practice. A retest may be made, provided there is documented evidence that the welder has had further training or practice. A complete retest of the types and positions failed shall be made.

G8. Documentation of Welder Performance Qualification

The welder performance qualification data and results of the examination and test shall be recorded on a form supplied by the employer. Records of compliance that meet the requirements shall be processed in accordance with AWS QC7-93, and maintained on file by AWS Q&C Department as part of the Welder Certification Record.

G9. Period of Effectiveness

G9.1 Unless otherwise specified in the test procedure, the initial certification is valid for *six months* from the date of completion of the examination results and signature by the Test Supervisor. Thereafter, the certification shall be considered as remaining in effect indefinitely unless (1) the welder is not engaged in a given welding process for which the welder is certified for a period exceeding *six months* or an alternative time period specified in the test procedure, or (2) there is some specific reason to question the welder's ability.

G9.2 Indefinite certification in accordance with G9.1 may be maintained by documenting the use of the welding process in accordance with 11, Maintenance of Certification.

G10. Identification/Certification Documents

The Welder Certification Card is issued and used in accordance with AWS QC7-93.

G11. Maintenance of Certification

Welders may maintain their certification indefinitely by the use of documented verification of performance in qualified welding process(es). The welder must submit completed form QC-WF3A as a minimum, covering each process for which qualified, and covering *each* six

month period unless otherwise specified in the test procedure. The date of certification expiration is extended for six months unless otherwise specified in the test procedure. Such extension is from the date of *the last use of the process(es)*, as verified on the form received, and accepted by the AWS Q&C Department. Form submittals must be in accordance with AWS QC7-93, 11, Maintenance of Certification.

G12. Renewal of Certification

Renewal of expired certifications shall be in accordance with AWS QC7-93, 12, Renewal of Certification.

G13. Revocation

The AWS certification of a welder may be revoked in accordance with the administrative procedures defined in AWS QC7-93, 13, Revocation.