



# Specification for the Certification of Radiographic Interpreters



**American Welding Society**

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# **Specification for the Certification of Radiographic Inspectors**

**1st Edition**

Prepared by the  
American Welding Society (AWS) Subcommittee on Certified Radiographic Interpreters

Under the Direction of the  
AWS Certification Committee

Approved by the  
AWS Board of Directors

## **Abstract**

The AWS program for the certification of radiographic interpreters has been developed to define the minimum standards for a radiographic interpreter and to provide a means of recognition for those who demonstrate through examination that they have the necessary skill, knowledge, and experience in the field of radiographic interpretation of welds. AWS QC15:2008 describes the requirements and procedures for the certification of radiographic interpreters based on the qualification requirements of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*. The certification of radiographic interpreters requires documentation of experience, satisfactory completion of an examination, and proof of visual acuity.



**American Welding Society**

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## Foreword

This foreword is not part of AWS QC15:2008, *Specification for the Certification of Radiographic Inspectors*, but is included for informational purposes only.

The purpose of radiographic interpretation is to properly assess indications produced on radiographic media during the process of evaluating weldments or adjacent base metal. The radiographic interpreter must be thoroughly familiar with all aspects of the process of radiography as well as the welding and casting process. This includes, but may not be limited to, welding processes, materials limitation of various testing methods, drawings, procedures, specifications, behavior of different types of radioactivity (particles and photons), film construction, behavior of energy-sensitive imaging systems, mathematics, radiographic film selection, handling, and storage. For radiographic interpreters to be effective, they must not only be technically competent, but also consistent and ethically principled in their dealing with clients and employers.

The AWS program for the certification of radiographic interpreters has been developed to define the minimum standards for a radiographic interpreter and to provide a means of recognition for those who demonstrate through examination that they have a level of skill, knowledge, and experience in the field of radiographic interpretation of welds.

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

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# Table of Contents

	<b>Page No.</b>
<i>Personnel</i> .....	v
<i>Foreword</i> .....	vii
<b>1. Scope</b> .....	1
<b>2. Normative References</b> .....	1
<b>3. Definitions</b> .....	1
<b>4. Functions</b> .....	2
<b>5. Education, Training, Experience, and Visual Acuity Requirements and Processing Procedures</b> .....	2
<b>6. Examination Requirements</b> .....	2
<b>7. Certification and Recertification</b> .....	3
7.1 Certification .....	3
7.2 Recertification .....	3
7.3 Notification .....	3
<b>8. Code of Ethics</b> .....	3
8.1 Preamble .....	3
8.2 Integrity .....	3
8.3 Responsibility to the Public .....	4
8.4 Public Statements .....	4
8.5 Conflict of Interest .....	4
8.6 Solicitation of Employment .....	4
8.7 Unauthorized Practice .....	5
<b>9. Revocation</b> .....	5
<b>10. Reinstatement</b> .....	5
List of AWS Documents on Certification .....	7

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# Specification for the Certification of Radiographic Interpreters

## 1. Scope

**1.1** This specification establishes the requirements and procedures for the certification of radiographic interpreters by the American Welding Society (AWS). It describes how personnel are certified, and outlines the principles of conduct and practices by which certification may be maintained. This standard meets or exceeds the requirements of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*.

**1.2** In the certification process, AWS conducts an examination to determine a person's general knowledge of radiographic interpretation 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. Certification is the documentation that the specified qualification requirements have been satisfied, and should not be construed as a guarantee of the future performance of an individual in a particular job environment.

**1.3** The employer is responsible for providing training and/or orientation of the radiographic interpreter to ensure that a person has all of the qualifications as stated herein.

**1.4** It shall be the responsibility of the employer to determine if the radiographic interpreter is physically and mentally capable of performing the duties involved in the work assignment.

**1.5** This standard is intended to supplement the requirements of an employer, code, standard, or other documents and shall not be construed as a preemption of the employer's rights and responsibility for the quality of work provided under contract to others.

**1.6** Certification as a radiographic interpreter does not confer to the individual any authority or imply any competence in the exposure of radiographic media. The handling of radiographic isotopes and similar hazardous material is not covered under this standard. This standard

does not address safety issues relevant to the exposure of radiographic media.

**1.7 Levels of Certification.** There shall be one level of certification for radiographic interpreters termed Certified Radiographic Interpreter (CRI).

## 2. Normative References

The standards listed below contain provisions, which, through reference in this text, constitute mandatory provisions of this AWS standard. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

AWS A3.0, *Standard Welding Terms and Definitions, Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying*

AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*

## 3. Definitions

The terms used in this standard are defined in AWS A3.0, *Standard Welding Terms and Definitions*. Other terms used herein are defined below. (Note: As used in this standard, the word *shall* denotes a requirement; the word *should* denotes a guideline; and the word *may* denotes a choice.)

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

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

**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 accordance with specified requirements.

**Certified Radiographic Interpreter (CRI).** The certification title given a person who meets the education, training, and examination requirements of this standard to perform the duties and responsibilities of radiographic interpretation of welds.

**Committee.** The Certification Committee of the American Welding Society.

**endorsement.** Indication of an additional skill documented in writing and added to one's certification credential(s).

**media.** Mechanism used to display a radiographic image (e.g., film, digital image, or real time display).

**nondestructive examination.** The act of determining the suitability of a material or component for its intended purpose using techniques that do not affect its serviceability.

## 4. Functions

The duties and responsibilities for radiographic interpreters are specified in Clause 5 of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*.

## 5. Education, Training, Experience, and Visual Acuity Requirements and Processing Procedures

**5.1** Each applicant for certification as a radiographic interpreter shall meet the minimum requirements for education, training, and experience listed in Clause 6 of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*. If the applicant is an AWS SCWI or a CWI with two years experience, he or she can automatically apply 6 months experience towards the minimum one-year radiographic interpretation experience requirement per 6.3.2 of AWS B5.15:2003.

**5.2** Each applicant for certification as a radiographic interpreter shall meet the minimum requirements for visual acuity listed in Clause 8 of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*.

**5.2.1** The eye examination shall be administered by one of the following:

- (1) Optometrist,

- (2) Medical Doctor or Ophthalmologist,

- (3) Certified Physician's Assistant, or

- (4) Registered or Practical Nurse.

**5.2.2** Vision examinations shall be documented using the "Visual Acuity Record" available from the American Welding Society. The form includes specific instructions for the application of the examination and completion of the documentation. The completed eye examination results shall be received in the AWS Certification Department **not later than 30 days** after the applicant's completed examination date. Applicants who have **not** fulfilled **all** requirements by that date shall have **all** records, scores, and applications **voided**. Visual examinations shall be performed not more than seven (7) months prior to the date of the CRI examination or renewal.

**5.3** The Certification Department of AWS shall review and/or verify the documentation supplied by applicants to determine if they meet the requirements noted in 5.1 and 5.2. If the application is incomplete (except for the Visual Acuity form) or the applicant does not meet the education and experience criteria, the applicant shall be notified that he/she does not qualify to take the examination.

**5.3.1** An AWS CWI or SCWI who is unable to document the minimum one year radiographic interpretation requirement, but who otherwise meets all other requirements is permitted to take the examinations described in Clause 6. Successful examination results will be valid for a two year period to permit the remaining experience requirement to be completed. Certification as a CRI will be issued upon receipt and approval of the completed experience documentation.

## 6. Examination Requirements

**6.1** Applicants shall meet the examination requirements of Clause 7 of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*, and Clause 6 of this specification to attain certification as a CRI.

**6.1.1** CRI candidates shall pass (with a minimum of 70% correct answers per exam part and an 80% composite average of all parts) the CRI written examination(s) on the subjects listed in Clause 9 of AWS B5.15:2003, *Specification for the Qualification of Radiographic Interpreters*. Candidates may retest on only the parts needed to meet the individual and composite minimums.

**6.1.2** The examinations shall consist of the following:

(1) *Part A*—A multiple-choice examination on fundamentals of radiographic inspection.

(2) *Part B*—A multiple choice practical examination consisting of interpreting a minimum of 10 radiographs to a code, specification, or other standard.

(3) *Part C*—A multiple choice, open-book examination covering the contents of specific codes that pertain to radiographic quality and film interpretation.

(4) *Test Duration.* Parts A and C of the examination shall be administered in a single 3-hour session. Both Parts A and C shall be given to the CRI candidate at the same time for this session. The division of time between Part A and Part C and the sequence of completion is at the discretion of the CRI candidate. Part B of the examination shall be administered in a single 3-hour session.

**6.2 Examination Equipment.** The equipment (light boxes, etc.) used to view radiographic specimens shall be checked prior to the examination to ensure proper operation. Equipment shall be of a type and model which matches (as close as possible) the quality and luminescence needed to view and interpret production radiographs.

Applicants will be permitted to bring an electronic calculator to assist in taking the test. No other personal equipment will be permitted.

## 7. Certification and Recertification

### 7.1 Certification

**7.1.1** The American Welding Society shall issue to each applicant who complies with and successfully fulfills the requirements of this specification, a serialized certificate and wallet card that state that the applicant has fulfilled all AWS requirements to achieve the status of Certified Radiographic Interpreter (CRI). Certification shall be valid for three (3) years from the end of the month in which the examination results are known (e.g., results known and transmitted December 13, 2006 = valid from December 31, 2006 to December 31, 2009 with an expiration date of January 1, 2010).

**7.1.2** The CRI may include this credential on any Committee approved inspection credential or endorsement list.

**7.2 Recertification.** The period of validity for the AWS CRI is three years. To be eligible for recertification, the CRI must provide evidence of continuous satisfactory technical performance by performing the following:

**7.2.1** Submit evidence of a current satisfactory vision examination.

**7.2.2** The CRI must satisfy at least one of the following:

**7.2.2.1** Submit documented evidence of at least 2 months (350 hours) experience performing specific duties of a CRI as described in AWS B5.15. The documentation must be attested to by the employer or client for whom the duties were performed. This experience shall have been performed during the immediate preceding three-year certification interval.

**7.2.2.2** Submit documented evidence of at least 4 weeks (160 hours) of teaching experience in radiographic interpretation covering the body of knowledge as described in AWS B5.15. The documentation must be attested to by the employer or client for whom the teaching was performed.

**7.2.2.3** Successfully complete the current practical (film interpretation) examination.

**7.2.3** At least every 9 years, the CRI must successfully complete all of the examinations described in Clause 6.

**7.3 Notification.** The AWS Certification Department may, as a courtesy, notify the AWS CRI of the expiration of their certificate and requirements for certification. A notice shall be mailed to the most current address provided by the certificate holder three months before the expiration date of their certificate.

*However, the responsibility for the maintenance of the certificate is solely with the certificate holder and failure to maintain a current address with the AWS Certification Department, and subsequent failure of notification, shall not be considered adequate justification to allow an extension of the recertification date.*

## 8. Code of Ethics

**8.1 Preamble.** This Code of Ethics has been established to safeguard the health and well being of the public, and to maintain the integrity and high standards of skills, practice, and conduct in the practice of radiographic interpretation. The CRI 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 the suspension, reprimand, or revocation of certification.

**8.2 Integrity.** The CRI shall act with complete integrity in professional matters, and be forthright and candid with their employer, regulator, or employer's customer, and

with this Committee or its representatives on matters pertaining to this standard.

**8.3 Responsibility to the Public.** The CRI shall act to preserve the public health and well being by performing radiographic interpretation duties in a conscientious and impartial manner to the full extent of the interpreter's moral and civic responsibility, qualification, and ability. Accordingly, the CRI shall perform according to the following criteria.

**8.3.1** Undertake and perform assignments only when qualified by training, experience, and capability, and only when the equipment and environmental conditions required by the applicable specification are available and suitable for use.

**8.3.2** Present credentials to persons authorized to examine them.

**8.3.3** Neither falsely represent ones current status, nor seek to misrepresent the certification level of this credential, nor falsely claim or exaggerate certification levels of any other credentials related to the discipline of welding, inspection, engineering, or metallurgy.

The CRI shall not "knowingly allow" any person to mistakenly infer that a qualification or level of expertise is implied or conferred by this credential, without attempting to correct the mistake and assure that the person is properly informed of the scope and level of qualification that is intended by this certification.

**8.3.4** Not modify, counterfeit, fraudulently present certification documents, nor give written or false testimony of current level or status of certification.

**8.3.5** Be completely objective, thorough, and factual in any written report, statement, or testimony of the work, and include all pertinent facts and relevant information in such communiqués as testimony.

**8.3.5.1** Report all known deficiencies that could affect the quality or accuracy of all readings and technical determinations.

**8.3.5.2** Report to the proper authorities any unlawful or improper attempts to skew or elicit improper readings, communiqués, or testimony.

**8.3.6** Sign or accept responsibility for readings personally performed by the Interpreter under adequate and proper conditions.

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

**8.4 Public Statements.** The AWS Certified Radiographic Interpreter shall issue no statements, criticisms or arguments on radiographic inspection matters con-

nected 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.

## **8.5 Conflict of Interest**

**8.5.1** The AWS Certified Radiographic Interpreter shall avoid conflict of interest with the employer or client and shall disclose any business association or circumstance that might be so considered.

**8.5.2** The AWS Certified Radiographic Interpreter shall not accept compensation, financial or otherwise, from more than one party for services on the same project or for services to the same project unless the circumstances are fully disclosed to all interested parties or their authorized agents.

**8.5.3** Except for the regular compensation and expenses, the AWS Certified Radiographic Interpreter shall not solicit or accept gratuities, directly or indirectly from any party or parties dealing with the client or employer in connection with the AWS Certified Radiographic Interpreter's work.

**8.5.4** The AWS Certified Radiographic Interpreter shall not perform any work, by virtue of assignment or certification, which would put the CRI in the position of having first approval of welds made by him/her.

## **8.6 Solicitation of Employment**

**8.6.1** The AWS Certified Radiographic Interpreter 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 and industry referral groups.

**8.6.2** The AWS Certified Radiographic Interpreter shall not falsify, exaggerate, or indulge in the misrepresentation of personal academic and professional qualification, past assignments, accomplishments and responsibilities, or those of the CRI's associates. Misrepresentation of current 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 required or inherently beneficial, (advertisements for training courses, consulting services, etc.) shall be a violation of this section.

**8.6.3** The AWS Certified Radiographic Interpreter shall not disclose proprietary information (i.e., commercially valuable information not generally known related to special processes, technology, contract procedures, extraordinary business secrets, usually as defined by the Uniform Commercial Code) concerning technical pro-

cesses of a present or former client or employer without their consent, except as necessary to perform the duties of an AWS Certified Radiographic Interpreter, or to protect the public health and well being.

**8.7 Unauthorized Practice.** Any violation of any part of the standard of conduct prescribed by this standard if related to an AWS Certified Radiographic Interpreter's occupation, including a violation of the Code of Ethics shall constitute an unauthorized practice subject to the imposition of sanctions. By accepting and maintaining a certification as an AWS Certified Radiographic Interpreter, you voluntarily obligate yourself to these articles and any future changes thereto, imposed by the Certification Committee, the AWS Board of Directors, or successor committee.

## 9. Revocation

**9.1** The Committee shall have the power to suspend, refuse recertification, or revoke the AWS CRI's certifi-

cation for misrepresentation of the facts regarding personal qualification, status, assignments, etc., relating to CRI 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 in a proceeding conducted in conformance with AWS administrative procedures for alleged violations of AWS certification programs.

**9.2** 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.

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**List of AWS Documents on Certification**

<b>Designation</b>	<b>Title</b>
QC1	<i>Standard for AWS Certification of Welding Inspectors</i>
QC4	<i>Standard for Accreditation of Test Facilities for AWS Certified Welder Program</i>
QC5	<i>AWS Standard for Certification of Welding Educators</i>
QC7	<i>Standard for AWS Certified Welders</i>
QC13	<i>Specification for the Certification of Welding Supervisors</i>
QC15	<i>Specification for the Certification of Radiographic Interpreters</i>
QC17	<i>Specification for AWS Accreditation of Certified Welding Fabricators</i>
QC19	<i>Standard for AWS Certification of Robotic Arc Welding Personnel</i>

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