

AWS C1.5:2019
An American National Standard



Specification for the Qualification of Resistance Welding Technicians



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Approved by
American National Standards Institute
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Specification for the Qualification of Resistance Welding Technicians

4th Edition

Prepared by the
AWS C1 Committee on Resistance Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by
AWS Board of Directors

Abstract

This specification establishes the requirements for qualification of Resistance Welding Technicians (RWT) employed in the welding industry. The minimum education, experience, examination, qualification/requalification requirements and duties are defined herein. This specification is a method for technicians to establish a record of their qualification and abilities in welding industry work such as development of machine trouble shooting, process controls, quality standards, problem solving, etc.



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This standard is subject to revision at any time by the AWS C1 Committee on Resistance Welding. It must be reviewed every five years, and if not revised, it must be either reaffirmed or withdrawn. Comments (recommendations, additions, or deletions) and any pertinent data that may be of use in improving this standard are requested and should be addressed to AWS Headquarters. Such comments will receive careful consideration by the AWS C1 Committee on Resistance Welding and the author of the comments will be informed of the Committee's response to the comments. Guests are invited to attend all meetings of the AWS C1 Committee on Resistance Welding to express their comments verbally. Procedures for appeal of an adverse decision concerning all such comments are provided in the Rules of Operation of the Technical Activities Committee. A copy of these Rules can be obtained from the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

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Foreword

This foreword is not part of AWS C1.5:2019, *Specification for the Qualification of Resistance Welding Technicians*, but is included for informational purposes only.

This specification for the qualification of resistance welding technicians was developed to provide a qualification basis, which defines minimum requirements for a resistance welding technician to demonstrate competence through a combination of education, experience, and examination.

The resistance welding technician (RWT) is a person who is responsible for maintaining resistance welding equipment, troubleshooting resistance welding problems, and providing advice on the application of the resistance welding process. The RWT shall be familiar with various resistance welding processes, specifications, basic electrical and mechanical principles, resistance welding equipment, inspection methods, acceptance criteria, tests, welding qualification requirements, and other aspects of fabrication and assembly.

For the welding technicians to be effective, the activities they perform must be consistent with specified requirements, technical, and ethical principles. The RWT may also produce reports aimed at optimizing cost, quality, and productivity. The RWT should be able to work with management representatives, inspection personnel, welders, and support crafts, and should be able to understand the role of each in the development of quality welds.

All revisions to the 2019 edition are identified by a vertical line in the margin adjacent to the text.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS C1 Committee on Resistance Welding, American Welding Society, 8669 NW 36th St, #130, Miami, FL 33166.

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Specification for the Qualification of Resistance Welding Technicians

1. General Requirements

1.1 Scope. This specification establishes qualification requirements for a resistance welding technician (RWT). It describes how qualifications are determined, and the practice by which qualification may be attained and maintained. The user of this specification will evaluate the qualifications of each candidate, and provide examinations to test the candidate's resistance welding skills and knowledge, as well as his or her ability to apply the principles of resistance welding.

This specification is intended to supplement the minimum requirements of employers, codes, other standards, or documents, and shall not be construed as a preemption of the employer's responsibility for the work or for the performance of the work. Resistance welding processes include spot welding, projection welding, seam welding, upset welding, flash welding, and auxiliary resistance welding processes such as resistance microjoining, resistance brazing, resistance soldering and resistance heating. It is understood not all of these disciplines are used in every situation; it shall be the responsibility of employers to determine if their employee, who having qualified as a RWT, is capable of performing the specific duties involved in their career assignments.

Qualification to this specification alone may not legally qualify the technician to provide technical services to the public. Contract documents and building or jurisdiction laws may require technical services to be performed under the direction and responsibility of others such as a registered Professional Engineer (P.E.). The RWT designation **DOES NOT** imply the status of a registered P.E. under the laws of any state or other governmental entity.

1.2 Levels of Certification. There is currently one level of qualification: Resistance Welding Technician (RWT).

1.3 Terminology. As used in this specification, the word *shall* denotes a requirement, the word *should* denotes a guideline, and the word *may* denotes a choice.

1.4 Units of Measurement. This standard does not require units of measurement. Therefore, no equivalents or conversions are contained except when they are cited in examples.

1.5 Safety. Safety and health issues and concerns are beyond the scope of this standard, and therefore are not fully addressed herein.

Safety and health information is available from the following sources:

American Welding Society:

- (1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*
- (2) AWS Safety and Health Fact Sheets
- (3) Other safety and health information on the AWS website

Material or Equipment Manufacturers:

- (1) Safety Data Sheets supplied by materials manufacturers
- (2) Operating Manuals supplied by equipment manufacturers

Applicable Regulatory Agencies. For example, United States Department of Labor, Occupational Safety and Health Administration (OSHA)

Work performed in accordance with this standard may involve the use of materials having been deemed hazardous, and may involve operations or equipment which may cause injury or death. This standard does not purport to address all