AWS C1.5:2009
An American National Standard

Specification for the Qualification of Resistance Welding Technicians

American Welding Society

Approved American National Standard
ANSI

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Specification for the Qualification of Resistance Welding Technicians

2nd Edition

Supersedes AWS C1.5:2005

Prepared by the
American Welding Society (AWS) C1 Committee on Resistance Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification establishes the requirements for qualification of Resistance Welding Technicians (RWTs) employed in the welding industry. The minimum experience, examination, application, qualification, and requalification requirements and methods 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 troubleshooting, processes controls, quality standards, problem solving, etc.

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Foreword

This foreword is not part of AWS C1.5:2009, *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.

The RWT may also produce reports aimed at optimizing cost, quality, and productivity. For the welding technicians to be effective, the activities they perform must be consistent with specified requirements, and technical and ethical principles. 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.

This second edition contains updates to the terms and definitions listed in Clause 3, a new Table 1 titled *Resistance Welding Technician Capabilities*, and a new clause on Examination Structure.

All revisions to the 2005 edition are identified by a vertical line in the margin next 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, 550 N.W. LeJeune Road, Miami, FL 33126.

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Specification for the Qualification of Resistance Welding Technicians

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 individual, and provide examinations to test the individual'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, butt welding, flash welding, micro joining, resistance brazing, resistance soldering, and resistance heating. It is understood that not all of these disciplines are used in every situation, and it shall be the responsibility of employers to determine that their employee, who, having qualified as a RWT, is capable of performing the specific duties involved in their career assignments.

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

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

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 other sources, including, but not limited to, ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*, and applicable federal and state regulations.

2. Normative References

The following standards contain provisions which, through reference in this text, constitute 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.

ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*; [1] and

AWS A3.0, *Standard Welding Terms and Definitions, Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying*.[2]

3. Terms and Definitions

AWS A3.0, *Standard Welding Terms and Definitions, Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying*, provides the basis for terms and definitions used herein. However, the following terms and definitions are included below to accommodate usage specific to this document.

candidate. The person attempting to qualify to this standard.

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

code. A standard consisting of a set of conditions and requirements relating to a particular subject and indicating appropriate procedures by which it can be determined that the requirements have been met. A standard suitable for adoption in whole or part by a

[1] ANSI Z49.1 is published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

[2] AWS standards are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.