

AWS D15.3/D15.3M:2026
An American National Standard

Specification for Resistance Welding for Railroad Applications



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Specification for Resistance Welding for Railroad Applications

1st Edition

Prepared by the
American Welding Society (AWS) D15 Committee on Railroad Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification provides the general resistance welding requirements for railcars, locomotives, and their components. It includes, but is not limited to, resistance spot and resistance seam welding of aluminum and iron-based alloys. There are requirements for machine qualification, welding schedule certification, production witness samples, and inspection and acceptance criteria.



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Foreword

This foreword is not part of this standard but is included for informational purposes only.

In 2010, the AWS D15 Committee on Welding in the Railroad Industries decided it was necessary to form a subcommittee to write a resistance spot and seam welding specification to take advantage of new developments in the resistance welding of passenger railcar shells.

This is the first edition of the D15.3/D15.3M specification. This specification is intended to replace the following documents for resistance welding of railcars, locomotives, and their components:

MIL-W-6858D, *Welding, Resistance: Spot and Seam*, March 28, 1978

AMS-W-6858A, *Welding, Resistance Spot and Seam*, April 1, 2000

AWS D17.2/D17.2M:2013, *Specification for Resistance Welding for Aerospace Applications*

MIL-W-6858D, AMS-W-6858A, or AWS D17.2/D17.2M:2013, take precedence over this specification only when they are cited by the contract documents.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS D15 Committee on Welding in the Railroad Industries, American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

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Dedication

The AWS D15 Committee on Railroad Welding dedicates this first edition of D15.3/D15.3M, *Specification for Resistance Welding for Railroad Applications*, to John B. Pearson, Jr.

John worked as a metallurgical consultant and welding engineer in the railroad industry for more than 40 years with LTK Engineering Services (now part of Hatch), helping to assure the safety and structural soundness of “trains and trolleys” all over North America. He served on several AWS committees for more than two decades and spearheaded the development of this document to help specifically tailor it to the needs of the North American transit industry. His depth of knowledge, breadth of experience, attention to detail and vision for this endeavor are greatly appreciated.

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Table of Contents

	Page No.
<i>Personnel</i>	v
<i>Foreword</i>	vii
<i>Dedication</i>	ix
<i>List of Tables</i>	xiii
<i>List of Figures</i>	xiii
<i>List of Forms</i>	xiv
1. General Requirements	1
1.1 Scope	1
1.2 Units of Measure	2
1.3 Safety	1
2. Normative References	2
3. Terms and Definitions	2
4. Requirements	3
4.1 Design Requirements	3
4.2 Acceptance Criteria	4
4.3 Materials and Methods of Preparation	7
4.4 Equipment Requirements	7
5. Preproduction Requirements	14
5.1 Personnel	14
5.2 Qualification of Welding Machines	14
6. Production Requirements	16
6.1 Welding Schedule Certification	16
6.2 Production Weld Tests	16
6.3 Testing Requirements	17
7. Quality Assurance	21
7.1 Production Quality Control	21
7.2 Production Witness Specimens	22
7.3 Inspection of Production Parts	23
8. Nondestructive Examination (NDE)	25
8.1 NDE Tests	25
8.2 NDE Qualifications	25
8.3 NDE Methods	26
9. Destructive Examination (DE)	29
9.1 Scope	29
9.2 Summary of Method	29
9.3 Significance	30
9.4 Apparatus	30
9.5 Specimens	30
9.6 Procedures for Weld Quality Tests	30
9.7 Report	31

Annex A (Informative)—Informative References	39
Annex B (Informative)—Ultrasonic Verification of Resistance Weld Fusion	41
Annex C (Informative)—Phased Array Ultrasonic Testing (PAUT)	45
Annex D (Informative)—Sample Forms	51
Annex E (Informative)—Controls and Power Supplies for Resistance Welding.	55
Annex F (Informative)—Recommendation for a Metallographic Method for the Examination of Weld Penetration in Resistance Seam Welds	71
Annex G (Informative)—Requesting an Official Interpretation on an AWS Standard	77
List of AWS Documents on Railroad Welding	79

List of Tables

Table	Page No.
4.1	Shear Load Requirements for Spot Weld Sheet Specimens 9
4.2	Shear Load Requirements for Spot Weld Sheet Specimens 10
4.3	Limits for Visible Discontinuities in Production Parts or Lots 11
4.4	Nugget Size (All Groups). 11
4.5	Internal Metallographic Discontinuities for Production Witness Samples or Sectioned Parts 11
5.1	Machine Qualification Specimens and Examination Requirements 15
6.1	Schedule Certification Specimen and Examination Requirements Spot Welds 18
6.2	Schedule Certification Specimen and Examination Requirements Seam Welds 18
6.3	Production Test Lots. 19
6.4	Mechanical Testing Requirements 19
7.1	Production Witness Welds, Test Lots 24
E1	Thermal and Electrical Properties of Metals 60

List of Figures

Figure	Page No.
4.1	Nomenclature for Metallographic Spot Weld Sections and Seam Weld Transverse Sections 12
4.2	Surface Indentation 12
4.3	Nomenclature Diagram of Spot and Seam Weld Radiographs 13
4.4	Minimum Penetration. 13
4.5	Shear Tests of Three or More Thicknesses 14
6.1	Spot Welds 20
6.2	Close-Spaced Spot Welds. 21
6.3	Seam Welds 21
9.1	Sectioning of Test Welds for Metallographic Examination 31
9.2	Peel Test Specimens 32
9.3	Peel Test 33
9.4	Measurement of a Weld Button Resulting from the Peel Test 33
9.5	Spot Weld Chisel Test 34
9.6	Tension-Shear Test Specimen 35
9.7a	Pull Test (90-Degree Peel Test)—Single Weld 36
9.7b	Pull Test (90-Degree Peel Test)—Dual Weld 37
9.8	Test Specimen and Typical Equipment for Torsion-Shear Test 38
B1	A-Scan Examples. 43
B2	Classifiable Failure Conditions 44
B3	Good A-Scans. 44
C1	Examples of PAUT Spot Weld Scans (EWI) 49

C2	Example of PAUT Spot Weld Nugget Measurements (EWI)	50
E1	Cross Section View During Growth of Weld Nugget	61
E2	Integrated Transformer Weld Gun	61
E3	Comparing Current Waveform of Single-Phase AC versus MFDC	62
E4	MFDC Weld Transformer	62
E5	MFDC Welding Control	63
E6	MF Square Waves Output from Weld Control	63
E7	Output Current from MFDC Welding System	64
E8	Wave Shaping Current Using MFDC System	64
E9	Single-Phase AC Weld Transformer	64
E10	Single-Phase AC Welding Current	65
E11	Single-Phase AC Welding Control System	65
E12	Single-Phase DC Weld Transformer	65
E13	Single-Phase DC Welding Current	66
E14	Three-Phase to DC Weld Transformer	66
E15	Three-Phase DC Welding Current	66
E16	Three-Phase to DC Configuration	67
E17	HWFC Weld Transformer	67
E18	HWFC Weld Current Output	67
E19	HWFC Weld Control System	68
E20	FWFC Welding Transformer	68
E21	FWFC Weld Current Output	69
E22	FWFC Weld Control System	69

List of Forms

Form		Page No.
D.1	Form for Resistance Welding Data Sheet for Spot Welding	52
D.2	Form for Resistance Welding Data Sheet for Seam Welding	53
D.3	Example of a Spot or Seam Weld Report.	54

Specification for Resistance Welding for Railroad Applications

1. General Requirements

1.1 Scope. This specification covers requirements for resistance spot and seam welding of railcars, locomotives, and their components. This specification is not intended to apply to tank car tanks, the welding of rails, or materials thinner than 0.008 in [0.2 mm]. Recommended practices for welding railroad rails and related components are included in D15.2, *Specification for Joining Railroad Rail and Related Rail Components*. Specifications for welding tank car tanks and components welded directly thereto are outlined in the AAR Manual of Standards and Specifications for Welding, *Section C—Part III, Specification M-1002 (AAR M-1002 C-III)*.

1.1.1 Material Groups

Group 1—Aluminum

Group 2—Carbon, low-alloy, and stainless steels

1.1.2 Classification.

Classification is based on the following:

Class A—A welded joint, whose failure during any operating condition would cause loss of the equipment or system or one of its major components.

Class B—A welded joint whose failure would reduce the overall strength of the equipment or system or limit the intended functioning or use of equipment.

Class C—A welded joint for which no stress analysis is required and whose failure would not affect the performance of the equipment or system.

1.2 Units of Measure. This standard makes use of both U.S. Customary Units and the International System of Units (SI). The latter are shown within brackets ([]) or in appropriate columns in tables and figures. The measurements may not be exact equivalents; therefore, each system shall be used independently.

1.3 Safety. Safety and health issues and concerns are beyond the scope of this standard and therefore are not 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