

AWS D15.2/D15.2M:2022  
An American National Standard

# Specification for Joining Railroad Rail and Related Rail Components



**AWS D15.2/D15.2M:2022**  
**An American National Standard**

**Approved by**  
**American National Standards Institute**  
**September 29, 2022**

# **Specification for Joining Railroad Rail and Related Rail Components**

**4th Edition**

**Revises AWS D15.2/D15.2M:2013**

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 document specifies the minimum standards for the welding of rails and related rail components. Repair procedures for rails and austenitic manganese steel components are covered. Arc welding, thermite welding, flash welding, and rail bonding variables are defined. Procedure qualification, welder performance qualification, and general welding safety procedures are addressed. Inspection methods and acceptance criteria are specified.



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## Dedication

This 4th edition of AWS D15.2/D15.2M:2022, *Specification for Joining Railroad Rail and Related Rail Components*, is dedicated by the D15 Committee on Railroad Welding and the D15C Subcommittee on Track Welding to the memory of Sanford “Sandy” Tribble.

Sandy was a life member of AWS and an originating member of the D15 Committee on Railroad Welding and the D15C Subcommittee on Track Welding. He has made innumerable contributions to the railroad and welding industry and was instrumental in the development of the AWS standards used for railroad welding today. He was part of the AWS family for more than 50 years and will be forever missed.

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## Foreword

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

This standard specifies standards for joining, repair, maintenance, inspection of rail welds, and related rail components. It was developed and is maintained by the D15C Subcommittee on Track Welding within the AWS D15 Committee on Railroad Welding.

The first edition of AWS D15.2/D15.2M was published in 1984, as a recommended practice for the welding of rails and related rail components for use by rail vehicles, and subsequently revised in 2003 and 2013.

This is the fourth edition of the standard. This edition has undergone significant revisions including, but not limited to, the addition of inspection procedures for austenitic manganese steel (AMS), testing requirements for rail bond qualification, and minimum shear strength requirements for rail-head and rail-web propulsion bonds. The most significant revision from the previous edition was changing the standard from a recommended practice to a specification. This standard now includes mandatory language for the welding of rails and related rail components.

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

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# Specification for Joining Railroad Rail and Related Rail Components

## 1. General Requirements

**1.1 Scope.** This document specifies standards for joining, repair, maintenance, inspection of rail welds, and related rail components. Classification of rails is based on the American Railway Engineering and Maintenance of Way Association (AREMA) specifications governing the manufacture of rails.

Related rail components include rail crossings and turnouts which further include switch points, stock rails, switch point guards, plates, frogs, and frog components.

The use of track components reconditioned by welding is a decision of the rail owner outside the scope of this document. This document does not include road bed maintenance except where it affects the expected life of the repair.

Welding processes addressed in this document include shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux cored arc welding (FCAW), flash welding (FW), thermitic welding (TW), and rail bonds. See Annex A and the *Welding Handbook*, Volumes 2 and 3, Ninth Edition for details on these processes.

Welding symbols shall be those shown in the latest edition of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

**1.2 Units of Measurement.** 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 must be used independently.

**1.3 Safety.** Safety and health issues and concerns are beyond the scope of this standard; some safety and health information is provided, but such issues 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

(1) Code of Federal Regulations (CFR), Title 49, *Transportation*, Volume 4, Chapter 2, Part 214, *Railroad Workplace Safety*.

Work performed in accordance with this standard may involve the use of materials that have been deemed hazardous, and may involve operations or equipment that may cause injury or death. This standard does not purport to address all safety and health risks that may be encountered. The user of this standard should establish an appropriate safety program to address such risks as well as to meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.