

AWS D17.2/D17.2M:2019  
An American National Standard

# Specification for Resistance Welding for Aerospace Applications



**AWS D17.2/D17.2M:2019**  
**An American National Standard**

**Approved by the**  
**American National Standards Institute**  
**February 27, 2018**

# **Specification for**

## **Resistance Welding for**

### **Aerospace Applications**

**3rd Edition**

**Supersedes AWS D17.2/D17.2M:2013**

Prepared by the  
American Welding Society (AWS) D17 Committee on Welding in the Aircraft and Aerospace Industry

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 aerospace hardware. It includes, but is not limited to, resistance spot and resistance seam welding of aluminum, magnesium, iron, nickel, cobalt, and titanium-based alloys. There are requirements for machine and welding schedule qualification, production witness samples, and inspection and acceptance criteria for aerospace hardware.



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## Foreword

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

In the mid 1990s, the AWS D17 Committee on Welding in the Aircraft and Aerospace Industries decided it was necessary to form a subcommittee to write a resistance spot and seam welding specification.

This is the third edition of the D17.2/D17.2M specification. This specification is intended to replace the following documents:

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

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

MIL-W-6858D or AMS-W-6858A, or both, take precedence over this specification only when they are cited by the contract documents.

A vertical line in the margin and underlined text in clauses, tables, or figures indicates an editorial or technical change from the 2013 edition.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS D17 Committee on Welding in the Aircraft and Aerospace Industries, American Welding Society, 8669 NW 36<sup>th</sup> Street, Suite 130, Miami, FL 33166.

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# Specification for Resistance Welding for Aerospace Applications

## 1. General Requirements

**1.1 Scope.** This specification covers requirements for resistance spot and seam welding of the following metals and their alloys.

### 1.1.1 Material Groups

Group 1—Aluminum and magnesium

Group 2—Steel, nickel, and cobalt

Group 3—Titanium

**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

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.