

AWS D8.8M:2021
An American National Standard



Specification for Automotive Weld Quality—Arc Welding of Steel



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Approved by the
American National Standards Institute
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Specification for
Automotive Weld Quality—
Arc Welding of Steel

6th Edition

Revises AWS D8.8M:2014

Prepared by the
American Welding Society (AWS) D8 Committee on Automotive Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification provides the minimum quality requirements for arc welding of various types of automotive and light truck components. This specification covers the arc and hybrid arc welding of coated and uncoated steels.



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Foreword

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

This specification was developed by the AWS D8C Subcommittee on Automotive Arc Welding of Steel of the AWS D8 Committee on Automotive Welding.

Arc welding of truck and car frame structures with relatively thick metal parts and using the gas metal arc welding (GMAW) process was covered in AWS D8.8-97/SAE HS J1196, *Specification for Automotive and Light Truck Components Weld Quality—Arc Welding*, and D8.8M: 2007, *Specification for Automotive Weld Quality—Arc Welding of Steel*. Changes in automotive design, caused by the desire to reduce fuel consumption and improve crash performance, have resulted in automotive structures being made of thinner and higher strength metal parts. This fact combined with the increased use of Zinc Coated Steels to reduce corrosion has made successful arc welding more difficult. This specification addresses joint geometry and workmanship requirements essential to automotive component arc welding quality. As the automotive industry is continually adopting new designs and materials, this standard is not intended to limit the user or prevent adoption of technology advancements. One objective was to prepare a specification that would be useful for the original equipment manufacturers (OEMs) and Tier suppliers of automotive components who may not have quality standards of their own. Another objective is to have the OEMs and Tier suppliers use and specify this document in order to establish common industry standards.

This sixth edition, D8.8M:2021, *Specification for Automotive Weld Quality—Arc Welding of Steel*, includes the following changes, notated with underlined text or a vertical line along the side of the page:

1. Improvement of several figures and related text to depict discontinuities more realistically, make them easier to read and where possible, utilize ones already spelled out in AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination*.

2. Harmonize requirements for fusion and penetration across all joint types.

3. The inclusion of hybrid arc welding processes.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS D8 Committee on Automotive Welding, American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

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1. General Requirements

1.1 Scope. This specification describes weld geometry and workmanship criteria essential to ensure the quality of automotive and light truck weldments. This specification covers the arc and hybrid arc welding of coated and uncoated steels.

1.2 Units of Measurement. This standard makes sole use of the International System of Units (SI).

1.3 Safety. Safety issues and concerns are addressed in this standard, although health issues and concerns are beyond the scope of this standard. 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.

2. Normative References

The documents listed below are referenced within this publication and are mandatory to the extent specified herein. 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.

AWS Documents:

- AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination.*