

AWS F4.2:2020
An American National Standard

Safety Guidelines for Proper Selection of Welding Cables



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Safety Guidelines for Proper Selection of Welding Cables

1st Edition

Prepared by the
American Welding Society (AWS) Committee on Safety and Health

Approved by the
AWS Board of Directors

Abstract

This document provides guidance on the safe and proper selection of welding cables. This includes identifying specific criteria including minimum copper content, gauge sizing, electrical performance, and resistance for welding cable sizes.



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Foreword

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

This specification was originally developed by the AWS Safety and Health Committee, with the assistance from manufacturers and users of welding machine cables. The goal was to provide guidance on the safe and proper selection of welding cables. This is the original issue of this document.

Comments and suggestions for the improvement of this standard are welcomed. They should be sent to the Secretary, AWS Safety and Health Committee, American Welding Society, 8669 NW 36 St, Miami, FL 33166.

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Safety Guidelines for Proper Selection of Welding Cables

1. General Requirements

1.1 Scope. This safety standard offers guidance in the proper selection and use of welding cables, an important aspect of the safe setup and use of welding equipment. It promotes workplace safety for welders and associated personnel by giving educators, operators, managers, and supervisors information about the testing, selection, and safe use of welding cables. Proper cable selection also improves machine efficiency and reduces energy use. The purpose of this standard is to provide reasonable and adequate means, ways, and methods for the testing, selection, and safe use of welding cables.

This standard recommends minimal performance requirements for welding cables in the tests herein described. It is not intended to imply quality of nonelectrical performance or of other factors of design, such as insulation/jacket performance, service life or cable appearance, except as indicated by the tests called out. Nor should these recommendations be interpreted to mean that the welding cables described herein are capable of affording greater protection than is indicated in this standard.

1.2 Units of Measure. This standard makes sole use of U.S. Customary Units. Approximate mathematical equivalents in the International System of Units (SI) are provided for comparison in parentheses or in appropriate columns in tables and figures.

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 following documents 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.