

**AWS C1.1M/C1.1:2019**  
**An American National Standard**



# **Recommended Practices for Resistance Welding**



**AWS C1.1M/C1.1:2019**  
**An American National Standard**

**Approved by**  
**the American National Standards Institute**  
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# **Recommended Practices** **for Resistance Welding**

**6th Edition**

**Supersedes AWS C1.1M/C1.1:2012**

Prepared by the  
American Welding Society (AWS) C1 Committee on Resistance Welding

Under the Direction of the  
AWS Technical Activities Committee

Approved by the  
AWS Board of Directors

## **Abstract**

This Recommended Practices is a collection of data and procedures that are intended to assist the user in setting up resistance welding equipment to produce resistance welded production parts. While the recommendations included are not expected to be final procedures for every production part or every welding machine, they serve as starting points from which a user can establish acceptable welding machine settings for specific production welding applications.

In some cases, recommended machine data is not available. In these instances, some description of the process is given to assist the reader in determining if the process might be suitable for the application.



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This standard is subject to revision at any time by the AWS C1 Committee on Resistance Welding. It must be reviewed every five years, and if not revised, it must be either reaffirmed or withdrawn. Comments (recommendations, additions, or deletions) and any pertinent data that may be of use in improving this standard are requested and should be addressed to AWS Headquarters. Such comments will receive careful consideration by the AWS C1 Committee on Resistance Welding and the author of the comments will be informed of the Committee's response to the comments. Guests are invited to attend all meetings of the AWS C1 Committee on Resistance Welding to express their comments verbally. Procedures for appeal of an adverse decision concerning all such comments are provided in the Rules of Operation of the Technical Activities Committee. A copy of these Rules can be obtained from the American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

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## Foreword

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

The data contained in these Recommended Practices have been compiled by the AWS Committee on Resistance Welding, by reviewing the data in the previous documents, by canvassing users of the resistance welding processes and correlating the data thus obtained. The resulting welding schedules shown in the tables were circulated for comments and, in addition, some tests were conducted to ascertain that welds of the specified strengths could be obtained.

The present edition of Recommended Practices represents an updated combination and extension of data presented in the previous edition of AWS C1.1M/C1.1:2012, *Recommended Practices for Resistance Welding*. Practices for new materials have been added and practices for materials which are not currently resistance welded in commercial production have been deleted. The new materials include high-strength low-alloy steels, both coated and uncoated.

The AWS C1 Committee on Resistance Welding has prepared these Recommended Practices in the hope that they will serve as an incentive for industry to develop methods and procedures improving upon the practice presented herein; which will permit the raising of quality and performance standards. If this is achieved, the Committee will have been amply repaid for the time and effort it has devoted to this work.

A vertical line in the margin and underlined text in clauses, tables, or figures indicates an editorial or technical change from the 2012 edition.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS C1 Committee on Resistance Welding, American Welding Society, 8669 NW 36 St, Miami, FL 33166.

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