Specification for Automotive Weld Quality—Resistance Spot Welding of Aluminum
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Automotive Weld Quality—
Resistance Spot Welding of Aluminum

First Edition

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 document contains both visual and measurable acceptance criteria for resistance spot welds in aluminum. The information contained herein may be used as an aid by designers, resistance welding equipment manufacturers, welded product producers, and others involved in the automotive industry and resistance spot welding of aluminum.
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Official interpretations of any of the technical requirements of this standard may only be obtained by sending a request, in writing, to the appropriate technical committee. Such requests should be addressed to the American Welding Society, Attention: Managing Director, Standards Development, 8669 NW 36 St, # 130, Miami, FL 33166 (see Annex B). With regard to technical inquiries made concerning AWS standards, oral opinions on AWS standards may be rendered. These opinions are offered solely as a convenience to users of this standard, and they do not constitute professional advice. Such opinions represent only the personal opinions of the particular individuals giving them. These individuals do not speak on behalf of AWS, nor do these oral opinions constitute official or unofficial opinions or interpretations of AWS. In addition, oral opinions are informal and should not be used as a substitute for an official interpretation.

This standard is subject to revision at any time by the AWS D8 Committee on Automotive 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 It must be reviewed every five years, and if not revised, it must be either reaffirmed or withdrawn.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 D8 Committee on Automotive 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 D8 Committee on Automotive 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.

This document has been prepared to establish post-weld acceptance criteria for resistance spot welds in automotive structures fabricated from aluminum. As a specification, the criteria and techniques contained herein are obligatory when cited as a normative reference on a drawing or in a contract.

This specification was prepared by a Task Group of the D8D Subcommittee on Automotive Resistance Spot Welding of the AWS D8 Committee on Automotive Welding.

Comments and inquiries concerning 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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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>v</td>
</tr>
<tr>
<td>Foreword</td>
<td>vii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xi</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xi</td>
</tr>
<tr>
<td>1. General Requirements</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Scope</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Units of Measurement</td>
<td>1</td>
</tr>
<tr>
<td>1.3 Safety</td>
<td>1</td>
</tr>
<tr>
<td>2. Normative References</td>
<td>1</td>
</tr>
<tr>
<td>3. Terms and Definitions</td>
<td>2</td>
</tr>
<tr>
<td>4. Weld Process Control</td>
<td>2</td>
</tr>
<tr>
<td>5. Spot Weld Acceptance Criteria</td>
<td>3</td>
</tr>
<tr>
<td>5.1 Visual Surface Inspection Criteria</td>
<td>3</td>
</tr>
<tr>
<td>5.2 Destructive Inspection – Metallographic Criteria</td>
<td>4</td>
</tr>
<tr>
<td>5.3 Destructive Inspection – Peel and Chisel Criteria</td>
<td>8</td>
</tr>
<tr>
<td>5.4 Destructive Inspection – Weld Strength Criteria</td>
<td>9</td>
</tr>
<tr>
<td>Annex A (Informative) – Informative References</td>
<td>21</td>
</tr>
<tr>
<td>Annex B (Informative) – Requesting an Official Interpretation on an AWS Standard</td>
<td>23</td>
</tr>
<tr>
<td>List of AWS Documents on Automotive Welding</td>
<td>25</td>
</tr>
</tbody>
</table>
This page is intentionally blank.
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Minimum Acceptable Weld Size ........................................</td>
</tr>
<tr>
<td>2</td>
<td>Minimum Tensile-Shear Strength for Spot Welded Aluminum Sheet ..................................................</td>
</tr>
<tr>
<td>3</td>
<td>Tensile-Shear Sample Dimensions ..................................................</td>
</tr>
<tr>
<td>4</td>
<td>Cross Tension Sample Dimensions ..................................................</td>
</tr>
</tbody>
</table>

List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Examples of Edge Welds ..................................................</td>
</tr>
<tr>
<td>2</td>
<td>Minimum Edge Distance ..................................................</td>
</tr>
<tr>
<td>3</td>
<td>Surface Cracks ..................................................</td>
</tr>
<tr>
<td>4</td>
<td>Indentation Measurement ..................................................</td>
</tr>
<tr>
<td>5</td>
<td>Attributes of a Spot Weld Measured from a Cross Section ..................................................</td>
</tr>
<tr>
<td>6</td>
<td>Penetration Measurement ..................................................</td>
</tr>
<tr>
<td>7</td>
<td>Example of Discrepant Voids in the Nugget ..................................................</td>
</tr>
<tr>
<td>8</td>
<td>Example of Discrepant Internal Cracks ..................................................</td>
</tr>
<tr>
<td>9</td>
<td>Measurement Method ..................................................</td>
</tr>
<tr>
<td>10</td>
<td>Example of Measuring a Crescent Button ..................................................</td>
</tr>
<tr>
<td>11</td>
<td>Fracture Mode 1 — Button Pull ..................................................</td>
</tr>
<tr>
<td>12</td>
<td>Fracture Mode 2 — Partial Thickness Fracture with Button Pull ..................................................</td>
</tr>
<tr>
<td>13</td>
<td>Fracture Mode 3 — Partial Thickness Fracture ..................................................</td>
</tr>
<tr>
<td>14</td>
<td>Fracture Mode 4 — Interfacial Fracture with Button Pull and Partial Thickness Fracture ..................................................</td>
</tr>
<tr>
<td>15</td>
<td>Fracture Mode 5 — Interfacial Fracture with Button Pull ..................................................</td>
</tr>
<tr>
<td>16</td>
<td>Fracture Mode 6 — Interfacial Fracture with Partial Thickness Fracture ..................................................</td>
</tr>
<tr>
<td>17</td>
<td>Fracture Mode 7 — Interfacial Fracture ..................................................</td>
</tr>
<tr>
<td>18</td>
<td>Fracture Mode 8 — No Fusion ..................................................</td>
</tr>
<tr>
<td>19</td>
<td>Tension-Shear and Cross Tension Testing ..................................................</td>
</tr>
<tr>
<td>20</td>
<td>Schematic for Tensile-Shear Samples ..................................................</td>
</tr>
<tr>
<td>21</td>
<td>Metrics Monitored in Tensile-Shear and Cross Tension Tests ..................................................</td>
</tr>
<tr>
<td>22</td>
<td>Schematic for Cross Tension Samples ..................................................</td>
</tr>
<tr>
<td>23</td>
<td>Test Fixture for Testing of Cross Tension Samples ..................................................</td>
</tr>
</tbody>
</table>
This page is intentionally blank.
Specification for Automotive Weld Quality—Resistance Spot Welding of Aluminum

1. General Requirements

1.1 Scope. This specification expresses the quality characteristics and metrics pertinent to individual resistance spot welds on automotive aluminum structures. The acceptance criteria are the same for all welds regardless of the service load and intended to be applied in conditions typically encountered during manufacturing. Welds at variance from the stated weld quality criteria in this document can still have mechanical properties that satisfy product and design requirements as per agreement between customer and supplier. Any attempted application of this document or the evaluation criteria used herein to other uses, for example post-crash weld quality assessment, may lead to an erroneous result.

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.