AWS B2.2/B2.2M:2016
An American National Standard

Specification for Brazing Procedure and Performance Qualification

American Welding Society®

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An American National Standard

Approved by the
American National Standards Institute
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Specification for Brazing Procedure and Performance Qualification

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Prepared by the
American Welding Society (AWS) B2 Committee on Procedure and Performance Qualification

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This specification provides the requirements for qualification of brazing procedure specifications, brazers, and brazing operators for manual, mechanized, and automatic brazing. The brazing processes included are torch brazing, furnace brazing, diffusion brazing, resistance brazing, dip brazing, infrared brazing, and induction brazing. Base metals, brazing filler metals, brazing fluxes, brazing atmospheres, and brazing joint clearances are also included.

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Foreword

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

This specification originated in the B2A Subcommittee on Brazing Qualification. The B2A Subcommittee was formed in the early 1980s in order to explicitly address the unique requirements of brazing procedure and brazing performance qualification outside the spectrum of B2.1/B2.1M, *Specification for Welding Procedure and Performance Qualification*.

This is the fourth edition of AWS B2.2/B2.2M, *Specification for Brazing Procedure and Performance Qualification*. AWS B2.2/B2.2M was first published in 1985. AWS B2.2-85, *Standard for Brazing Procedure and Performance Qualification*, was revised in 1991 and 2010.

The welding terms used in this specification shall be interpreted in accordance with the definitions given in the latest edition of AWS A3.0M/A3.0, *Standard Welding Terms and Definitions, Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying.* The application of brazing symbols shall conform to the requirements of AWS A2.4, *Standard Symbols for Welding, Brazing, and Nondestructive Examination.*

A vertical line in the margin or underlined text in clauses, tables, or figures indicates an editorial or technical change from the 2010 edition.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS B2 Committee on Procedure and Performance Qualification, American Welding Society, 8669 NW 36 St, # 130, Miami, FL 33166.

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Table of Contents

Page No.

List of Tables

List of Figures

List of Forms

Specification for Brazing Procedure and Performance Qualification

1. General Requirements

1.1 Scope. This specification provides the requirements for qualification of Brazing Procedure Specifications (BPSs). This specification also provides requirements for the performance qualification of brazers and brazing operators. This specification is intended for use where referenced by a product standard or contract document.

Employers shall be responsible for the brazing done by their organization, including the use of qualified brazing procedures, qualified brazers, and qualified brazing operators. It is the Employer's responsibility to assure that BPSs meet any additional requirements of the Referencing Document. Each Employer shall maintain the applicable BPSs, Brazing Procedure Qualification Records (BPQRs), and Brazing Performance Qualification (BPQ)s during the period of their use.

When not otherwise specified by the Referencing Document, the edition of this specification to be used shall be established in accordance with the following: (1) editions may be used at any time after the effective date of issue; (2) the latest edition of this document should be used for new contracts; (3) editions established by contract date may be used during the entire term of the contract, or the provisions of later editions may be used when agreed upon by the contracting parties.

This document is intended for use with the following brazing processes:

(1) Torch Brazing (TB)

(2) Furnace Brazing (FB)

(3) Induction Brazing (IB)

(4) Resistance Brazing (RB)

(5) Dip Brazing (DB)

(6) Infrared Brazing (IRB)

(7) Diffusion Brazing (DFB)

1.1.1 Base Metals. The grouping of base metals by Base Metal Number (BM No.) in Table B.1 has been made on the basis of metallurgical compatibility, chemical composition, and brazeability to decrease the number of required brazing qualifications. The grouping does not imply that base metals may be indiscriminately substituted within the same BM No. without consideration of their applicability. For some materials or combinations of materials, additional tests may be required by the procuring activity, the Referencing Document, or the design engineer.

Base metals are identified by their American Society for Testing and Materials (ASTM), American Bureau of Shipping (ABS), or Unified Numbering System (UNS) designations. Cross reference specifications, listed in the UNS for Metals and Alloys opposite a given UNS No., are included in the same BM No. group as the given UNS No. An American Society of Mechanical Engineers (ASME) designation, is included in the same BM No. group.

Eight categories are included as follows:

(1) Ferrous metals (BM Nos. 100 through 180)

(2) Aluminum and aluminum alloys (BM Nos. 200 through 220)

(3) Copper and copper alloys (BM Nos. 300 through 360)