

# Specification for Local Heating of Welds in Creep Strength-Enhanced Ferritic Steels in Piping and Tubing Using Electric Resistance Heating



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**Approved by the**  
**American National Standards Institute**  
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# **Specification for Local Heating of Welds in Creep Strength-Enhanced Ferritic Steels in Piping and Tubing Using Electric Resistance Heating**

**1st Edition**

Prepared by the  
AWS Committee on Piping and Tubing

Under the Direction of the  
AWS Technical Activities Committee

Approved by the  
AWS Board of Directors

## **Abstract**

This specification establishes the requirements for local heating of welds in creep strength-enhanced ferritic steels in piping and tubing using electric resistance heating. This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.



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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 D10P Subcommittee on Local Heat Treating of Pipework acting as a subcommittee of the AWS Committee on Piping and Tubing. This specification is the first edition for this specification.

Your comments for improving AWS D10.22/D10.22M:2021, *Specification for Local Heating of Welds in Creep Strength-Enhanced Ferritic Steels in Piping and Tubing Using Electric Resistance Heating* are welcome. Submit comments to the Director, Standards Development, American Welding Society, 8669 NW 36 St, #130, Miami, FL 33166; telephone (305) 443-9353; fax (305) 443-5951; e-mail [info@aws.org](mailto:info@aws.org); or via the AWS web site <<http://www.aws.org>>.

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# Table of Contents

|                                                           | Page No. |
|-----------------------------------------------------------|----------|
| <i>Personnel</i> . . . . .                                | v        |
| <i>Foreword</i> . . . . .                                 | vii      |
| <i>List of Tables</i> . . . . .                           | xi       |
| <i>List of Figures</i> . . . . .                          | xi       |
| <b>1. General Requirements</b> . . . . .                  | 1        |
| 1.1 Scope . . . . .                                       | 1        |
| 1.2 Units of Measurement . . . . .                        | 1        |
| 1.3 Safety . . . . .                                      | 1        |
| 1.4 Requirements to be Provided by the Customer . . . . . | 1        |
| <b>2. Normative References</b> . . . . .                  | 2        |
| <b>3. Terms and Definitions</b> . . . . .                 | 2        |
| <b>4. General</b> . . . . .                               | 4        |
| <b>5. Purposes for Local Heating</b> . . . . .            | 5        |
| 5.1 Hydrogen Bakeout . . . . .                            | 5        |
| 5.2 Preheating . . . . .                                  | 5        |
| 5.3 Postweld Heat Treatment (PWHT) . . . . .              | 5        |
| <b>6. Local Circumferential Band Heating</b> . . . . .    | 5        |
| 6.1 Soak Band . . . . .                                   | 5        |
| 6.2 Heated Band . . . . .                                 | 5        |
| 6.3 Gradient Control Band . . . . .                       | 6        |
| 6.4 Axial Temperature Gradient . . . . .                  | 6        |
| <b>7. Measurement of Temperature</b> . . . . .            | 9        |
| 7.1 Temperature-Indicating Crayons and Paints . . . . .   | 9        |
| 7.2 Selection of Thermocouples . . . . .                  | 9        |
| 7.3 Installation of Thermocouples . . . . .               | 9        |
| 7.4 Control Thermocouples . . . . .                       | 9        |
| 7.5 Monitoring Thermocouples . . . . .                    | 10       |
| <b>8. Design of the Heating Process</b> . . . . .         | 10       |
| 8.1 Hydrogen Bakeout and Preheat . . . . .                | 10       |
| 8.2 Postheat . . . . .                                    | 10       |
| 8.3 Postweld Heat Treatment . . . . .                     | 10       |
| 8.4 Special Considerations . . . . .                      | 11       |
| <b>9. The Thermal Cycle, PWHT</b> . . . . .               | 16       |
| 9.1 Maximum Temperature Differences for PWHT . . . . .    | 16       |
| 9.2 Maximum Heating Rate . . . . .                        | 17       |
| 9.3 Maximum Hold Temperature and Time . . . . .           | 17       |
| 9.4 Maximum Cooling Rate . . . . .                        | 17       |
| <b>10. Insulation</b> . . . . .                           | 17       |
| 10.1 Classification of Insulation . . . . .               | 17       |
| 10.2 Attachment of Insulation . . . . .                   | 17       |

**11. Quality Assurance System** .....17

11.1 Quality System .....17

11.2 Process Control.....17

11.3 Documentation .....17

11.4 Control of Inspection, Measuring, and Test Equipment.....18

11.5 Training.....18

11.6 Servicing.....18

**12. Other Considerations** .....18

Annex A (Normative)—Procedure for Thermocouple Attachment by Capacitor Discharge Welding .....19

Annex B (Normative)—Standard Documentation Checklist for Local Heating .....21

Annex C (Informative)—Standard Procedure for Local Heating.....23

Annex D (Informative)—Requesting an Official Interpretation on an AWS Standard .....27

List of AWS Documents on Piping and Tubing .....29

## List of Tables

| Table                                                                                                                                                                                                                  | Page No. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 6.1 Minimum Requirements for Soak Band Width, Heated Band Width, and Gradient Control Band Width for Local Circumferential Band PWHT of Circumferential Welds in Piping and Tubing in the Horizontal Position. . . . . | 7        |
| 8.1 Minimum Required Number of Control Zones and Control Thermocouple Locations for Piping in Horizontal Position. . . . .                                                                                             | 11       |

## List of Figures

| Figure                                                                                                                                            | Page No. |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 3.1 Definition of Terms for Local Circumferential Band Heating of Piping Weld . . . . .                                                           | 3        |
| 3.2 Definition of Terms for Local Circumferential Band with Branch Connection to Piping Attachment Weld . . . . .                                 | 4        |
| 7.1 Schematic Representation of Equipment Used to Directly Attach Thermocouples by Capacitor Discharge Welding . . . . .                          | 9        |
| 8.1 Location of Thermocouples (Monitoring and Control) for Pipe sizes up to NPS 6 [DN 150] and one Control Zone . . . . .                         | 12       |
| 8.2 Location of Thermocouples (Monitoring and Control) for Pipe sizes NPS 8 and up to NPS 12 [DN 200 to DN 300] and two Control Zones . . . . .   | 13       |
| 8.3 Location of Thermocouples (Monitoring and Control) for Pipe sizes NPS 14 and up to NPS 30 [DN 350 to DN 750] and four Control Zones . . . . . | 14       |
| 8.4 Location of Monitoring Thermocouples Branch Nozzle or Attachment . . . . .                                                                    | 15       |
| 8.5 Example of One Approach when the Heated Band from a Weld Requiring PWHT Intersects a Weld Not Requiring PWHT . . . . .                        | 16       |

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# Specification for Local Heating of Welds in Creep Strength-Enhanced Ferritic Steels in Piping and Tubing Using Electric Resistance Heating

## 1. General Requirements

**1.1 Scope.** This standard describes a method of applying controlled heat to weld joints and a limited volume of base metal adjacent to the joints, as opposed to heating the complete weldment in a furnace or oven. This standard is written to apply to the heating of creep strength-enhanced ferritic steels (P-No. 15X) by the use of electric resistance heating pads.

**1.1.1** The basis of this document is the proper application of heat in sufficient surface area to ensure that the temperature on the inside diameter (ID) of the component at the root of the weld achieves the necessary minimum temperature.

**1.2 Units of Measurement.** This standard makes use of both U.S. Customary Units and the International System of Units. The latter are shown within brackets ([ ]) or in appropriate columns in tables and figures. The measurements may not be exact equivalents; therefore, each system must be used independently.

**1.3 Safety.** Safety and health issues and concerns are beyond the scope of this standard; some safety and health information is provided, but such issues are not fully addressed herein. 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.

**1.4 Requirements to be Provided by the Customer.** The customer is cautioned that in using this specification they assume certain responsibilities for providing the following information to the heat treatment organization:

- (1) The applicable code of construction
- (2) Any customer requirements more stringent than the code of construction
- (3) The maximum postweld heat treatment (PWHT) temperature (see Clause 4 and 8.4.7)