

Purpose

This technical bulletin provides details of Polyethylene Welding authorisation requirements.

Background

Polyethylene welding is a specialist activity that requires specific skills, training, and expertise to ensure the integrity and safety of pipelines. It has come to our attention that some accredited contractors for land development projects have been attempting to undertake polyethylene welding without SA Water authorisation.

Current Situation

Polyethylene welding is not a general construction task. It requires specialist training, knowledge, and experience to ensure proper fusion of materials during the welding process, which directly affects the longevity and functionality of pipelines.

Accredited Contractors for land development projects are not automatically authorised to perform polyethylene welding. Only trained professionals with the appropriate certifications and expertise are permitted to carry out these welding activities.

SA Water Technical Standard TS 0503 – Authorised Products Water Systems specifies the following requirements shall be satisfied to be authorised to undertake polyethylene welding:

- For field welding, attained the following qualification/s:
 - PMBWELD301 (Butt Welding)
 - PMBWELD302 (Electrofusion Welding)
- For factory welding (fabrication of specials i.e., doglegs, fire plug offtakes):
 - Manufacturers are listed in TS 0503 and satisfy the documentation requirements provided.

Ensuring Safety and Compliance:

SA Water is committed to maintaining the highest standards of safety and quality in all construction projects. The specialised nature of polyethylene welding requires us to emphasise the need for authorised professionals with appropriate training and expertise to carry out these activities. To avoid any disruptions to project timelines, Authorised SA Water Contractors are advised to ensure full compliance with SA Water requirements.

Actions

1) Updating Technical Governance

In recognition of the specialised requirements of welding polymers, SA Water has commenced work new technical governance tailored specifically to this subject area, in addition to modifications of TS 0503.

This work is expected to take approximately 9 months, with release expected in early 2024.

2) Confirmation of current SA Water requirements:

a) Factory Welding

SA Water's existing requirements for factory welding of polyethylene, contained in Sections 9.1 and 9.1.1 of TS 0503, remain current and enforceable under SA Water's Contracts and Developer Agreement Formal Instruments.

b) Field Welding Qualifications

SA Water's existing requirements for field welding of polyethylene, contained in Section 9.1.2 of TS 0503, remain current and enforceable under SA Water's Contracts and Developer Agreement Formal Instruments.

3) Providing Interim Guidance for Field Welding

Prior to updated technical governance being published, it has been identified that interim guidance, in the form of this Technical Bulletin, is required. Table 1 of this Technical Bulletin is provided to supplement the requirements of TS 0503 and is to be considered part of TS 0503 until updated guidance is published.

Table 1 - Interim Requirements for Field Welding of Polyethylene

| Subject | Supplementary Requirement |
|--------------------------------|--|
| Qualifications | Requirements of TS 0503 remain (refer above) |
| Quality Management Plan | Before commencing any construction activities involving polyethylene pipelines, Contractors shall submit a Quality Management Plan to the SA Water Representative. This plan shall outline the procedures, processes and controls that will be implemented to ensure the quality and safety of polyethylene welding activities throughout the project. Acceptance of this submission by the SA Water Representative constitutes a HOLD POINT under TS 0503. |
| Weld Procedures | Before commencing any construction activities involving polyethylene pipelines, Contractors shall submit welding procedure details to the SA Water Representative. This information shall contain details of the welding procedures to be used, including: <ul style="list-style-type: none"> ○ Specifications for equipment and surface preparation ○ Welding parameters ○ Calibration details ○ Materials ○ Fusion welding techniques ○ Quality control measures. These documents must align with the specified standards to ensure welding processes meet performance requirements. Welding procedures submitted to SA Water shall also align with the WSA 01-2004 Polyethylene Pipeline Code. Acceptance of this submission by the SA Water Representative constitutes a HOLD POINT under TS 0503. |

Note: *Failure to satisfy the requirements of Table 1 above may result in delays or even suspension of construction.

For further guidance and clarification, please contact SA Water at welding@sawater.com.au

Version History

| Version | Date | Author | Comments |
|---------|------------|---------------|----------|
| 1.0 | 31/08/2023 | Matthew Davis | Final. |
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