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| Standard Operating Procedure Bonding Procedure for PVDF Socket Bench Fusion Method | SOP No. 5.028 |
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DCR No.: 97028
Revision No.: New

Effective: 6-11-97
Supersedes: New
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- 1 Purpose
 - 1.1 To establish a standard procedure for Therma bonders performing polyvinylidene fluoride (PVDF) socket bench fusion method.
- 2 Scope
 - 2.1 This procedure applies to all Therma bonders performing the PVDF socket bench fusion method.
- 3 Responsibility
 - 3.1 All bonders will be qualified under the direct supervision of the quality control department.
 - 3.2 Only qualified bonders are to perform the following procedures.
- 4 Reference
 - 4.1 ASME B31.3 - "Chemical Plant and Petroleum Refinery Piping," 1993 Edition.
- 5 Storage Requirements
 - 5.1 All PVDF material shall be isolated and stored in a clean dry storage area.
 - 5.2 The material in the storage area shall be sufficiently supported so as to prevent bowing.
- 6 Procedures
 - 6.1 Gowning
 - 6.1.1 Wear clean powder free gloves to handle all cleaned PVDF pipe and components.
 - 6.1.2 When fabricating in clean areas (i.e. Class 10 or 10,000), wear clean room garments.

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6.1.3 Follow project specification for gowning procedure as required, when performing this procedure in the field.

6.2 Tool Cleaning

6.2.1 Clean all hand tools (including pipe cutters, chamfering and peeling tools) with isopropyl alcohol (IPA).

6.2.2 Blow dry the hand tools with filtered nitrogen.

6.3 Material

6.3.1 Use only quality control released material.

6.4 Alignment

6.4.1 Make certain that fitting clamps match pipe size.

6.4.2 Check alignment and pipe stops.

6.4.3 Check depths of penetrations for pipe and fittings.

6.4.4 Adjust depths using setcrews on either side of a heater head.

6.5 Heating

6.5.1 Preset heat temperatures of the heating tool from 482°F (250°C) to 518°F (270°C).

6.5.2 Verify the heat temperatures using a temperature stick for that range.

6.5.3 Cut pipe square using only dedicated pipe cutters suitable for PVDF pipe.

6.5.4 Prepare the pipe ends using only dedicated and clean chamfering or peeling tools.

6.5.5 Place properly prepared pipe in clamps using pipe stops fitting jaws and squaring plates.

6.6 Cleaning

6.6.1 Clean pipe and fittings using IPA and clean room grade wipes.

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6.6.2 Clean heater bushing using clean room grade wipes.

6.7 Inspection

6.7.1 Bring the fitting on to the heating spigot until the penetration stop is reached.

6.7.2 Push the pipe into the heater bushing until the control stops are reached.

6.7.3 Hold firmly until a uniform bead of approximately 1/3 of the pipe wall thickness can be observed on the pipe side.

Note: Manufacturers recommended that heating times should only be used as a guide.

6.7.4 When proper bead is observed, quickly pull pipe and fitting from the heating bushing and heating spigot with a snap off action and immediately bring them together using the master turn wheel.

6.7.5 Allow pipe and fitting to cool approximately the same amount of time as in heating.

6.8 Completion

6.8.1 If required submit the test assembly to quality control department for bonding procedure qualification approval.

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Document Approval

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