

Standard Operating Procedure Bonding Procedure for PVDF Socket Hand Fusion Method	SOP No. 5.029
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- 1 Purpose
 - 1.1 To establish a standard procedure for all Therma bonders performing polyvinylidene fluoride (PVDF) socket hand fusion.
- 2 Scope
 - 2.1 This procedure applies to all Therma bonders performing the PVDF socket hand 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.

6.3.2 Prepare pipe ends using either chamfering tool or peeling tools as necessary.

6.3.3 Mount heater bushing to hand tool tightly to assure uniform heat transfer.

6.4 Cleaning

6.4.1 Clean outside surface of pipe and inside surface of fitting using IPA and clean room grade wipes.

6.5 Heating

6.5.1 Preset heat temperatures of the heating tool from 480°F (249°C) to 500°F (260°C).

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

6.5.3 The depth of penetration of the fitting onto the male heater bushing needs to be decreased by approximately 1/16" to 1/8" for high purity bonding. For All other bonding insert until fitting bottoms against bushing shoulder and pipe penetrates to the scribe mark from the peeling tool.

6.5.4 As soon as a sufficient external pipe bead is visible (approximately 1/3 wall thickness) the bond should be made.

6.5.5 After heating, quickly pull parts off the heating tool and bring parts together without twisting fully insert pipe into fitting until the two weld beads touch.

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6.5.6 Hold parts together for as long as heating time to maintain alignment.

6.6 Completion

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

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Document Approval


Field Operations Manager

6-26-97
Date


Quality Control Manager

6-24-97
Date


Quality Assurance Manager

8-7-97
Date

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