

Standard Operating Procedure <b>Bonding Procedure for PVDF Bead and Crevice Free Fusion Method</b>	SOP No. 5.030
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- 1 Purpose
  - 1.1 To establish a standard procedure for all Therma bonders performing polyvinylidene fluoride (PVDF) bead and crevice free (BCF) fusion method.
- 2 Scope
  - 2.1 This procedure applies to all Therma bonders performing the PVDF BCF fusion method.
- 3 Responsibility
  - 3.1 All bonders operators 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.

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6.1.2 When fabricating in clean areas (i.e. Class 10 or 10,000), wear clean room garments.

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 dedicated pipe cutter.

6.3.3 Face ends of pipe using clean dedicated PVDF facing tool.

## 6.4 Cleaning

6.4.1 Clean outside surface of pipe and fittings using clean room grade wipes and IPA. (Do not clean the inside surface of the fitting unless it is necessary).

6.4.2 Clean the half shells of the heating bushings including the separation surfaces using clean room grade wipes and IPA.

6.4.3 Clean the bladder using clean room grade wipes and IPA. (Be sure that the bladder is dry before inserting into pipe).

## 6.5 Heating

6.5.1 Preset heat temperatures of heating tool from 200<sup>0</sup>C (392<sup>0</sup>F) to 231<sup>0</sup>C (448<sup>0</sup>F).

6.5.2 Position pipe and fitting exactly in the middle of the heating bushing.

6.5.3 Position pipe clamps for the required application.

6.5.4 Secure pipe clamps with clamp bolt.

6.5.5 Position the bladder in the pipe at the fusion zone.

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6.5.6 Follow the manufacturers automatic fusion joining procedure.

## 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

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4-8-97  
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6-7-97  
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