# WELDING PROCEDURE SPECIFICATION

**WPS:** 7000-xxxx-PVDF-Socket                  **REV. NO.:** 0          **DATE:** 6/7/2012          **\*\*APPLICABILITY\*\***

**WELDING PROCESS:** TF -                       **CODE:** ANSI B31.3      **OTHER:**

**SUPPORTING PQR:** 7000--PVDF-Socket

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**JOINT:** **This WPS shall be used in conjunction with the General Welding Standards (GWS) and Welding Fabrication Procedure (WFP) sections and criteria for joint details, repairs, NDE, inspection, etc.**

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|---|---|
| **Weld Joint Type:** Socket | **Class:** Full thermal fusion |
| **See GWS 1-06 and WFP's for joint details.** | **Preparation:** Clean and prep per manufacturer's instructions |
| **Root Opening:** | **Backing:** N/A |
| **Backgrind Root:** N/A | **Backing Mat.:** None |
| **Bkgrd Method:** N/A | **GTAW Flux:** N/A          **Backing Retainer:** N/A |

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**FILLER METALS:**                                                      **Class:** N/A **and** N/A

**A No:** N/A          **SFA Class:** N/A **and** N/A          **F No:** N/A **and** N/A          **Size:** N/A

**Insert:** N/A        **Insert Type:** N/A                    **Weld Metal Thickness Ranges:**

**Flux:**     **Type:** N/A     **Size:** N/A                 **AWS Root Pass:**

**Filler Material Note:**                                    **AWS Balance:**

**ASME Root Pass:**

**ASME Balance:** .165 **thru** .462

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**BASE MATERIAL:**

| | P No: N/A | Gr No.: | to P No.: N/A | Gr No.: |
|---|---|---|---|---|
| **Spec.:** PVDF- pipe | **Grade:** | **to Spec.:** PVDF- pipe | | **Grade:** |
| **Qualified Pipe Dia. Range:** >= | **AWS:** | **ASME:** 1 | | |
| **Qualified Thickness Range:** | **AWS:** | **ASME:** | | |

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**QUALIFIED POSITIONS:**          **AWS:**          **ASME:**          **Vert. Prog.:** N/A

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|---|---|
| **Preheat Min. Temp.:** 50 | **GAS: Shielding:** N/A          **or** |
| **Interpass Max. Temp.:** N/A **°F** | **Gas Composition:** N/A / N/A / N/A **%**          / / **%** |
| **Preheat Maintenance:** 50 **°F** | **Gas Flow Rate cfh:** |
| **PWHT: Time @ °F Temp.:** | **Backing Gas/Comp:** N/A          N/A **%** |
| **Temperature Range:** N/A **°F to** N/A **°F** | **Backing Gas Flow cfh:** |
| | **Trailing Gas/Comp:** |

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**WELDING CHARACTERISTICS:**

| | | |
|---|---|---|
| **Current:** N/A **and** N/A | **Tungsten Type:** | **Transfer Mode:** N/A |
| **Ranges:**     **Amps:** | **Tungsten Dia.:** N/A | **Pulsing Cycle:** |
| **Volts:** | | **Background Current:** |
| **Fuel Gas:** N/A | **Flame:** N/A | **Braze Temp °F:** N/A **to** N/A |

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**WELDING TECHNIQUE:** **For fabrication specific requirements such as fitup, cleaning, grinding, PWHT and inspection criteria, refer to Volume 2, Welding Fabrication Procedures.**

**Technique:** Thermal fusion                          **Cleaning Method:** N/A

**Single or Multi Pass:** Single      **Stringer or Weave Bead (S/W):** N/A **or** N/A      **Oscillation:** N/A

**GMAW Gun Angle:**      **Forehand or Backhand for GMAW:** N/A

**No Pass > 1/2":** N/A      **GMAW/FCAW Tube to Work Distance (in):** N/A

**Maximum K/J Heat Input:**      **Travel Speed:**      **Gas Cup Size:**

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**PROCEDURE QUALIFIED FOR:**

**Charpy "V" Notch:** N/A      **Nil-Ductile Transition Temperature:** N/A      **Dynamic Tear:** N/A

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**Comments:** This WPS Thermal Fusion procedure temperatures of ~400° F to ~560° F. Use piping manufacturer heating and joining equipment or a manufacturer approved equivalent. Heating and cooling times shall be in accordance with the piping/fitting manufacturer requirements. WPS Data sheets will added for each type of plastic pipe, i.e., PVDF that fall within the jurisdiction of B31.3 Ch. VII and are performed within the manufacturers instructions/requirements.

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| Weld Layer | Manual Process | Filler Metals | Size | Amp Range | Volt Range | Travel/ipm | Nozzle Angle | Other |
|---|---|---|---|---|---|---|---|---|
| 1 | TF - | N/A | N/A | | | | | |
| 2 | | N/A | | | | | | |
| 3 | | N/A | | | | | | |
| 4 | | N/A | | | | | | |

**REM. * Weld layers are representative only - actual number pf passes and layer sequence may vary.**

**ML-1/2 projects or jobs must determine if the supporting documentation for this WPS complies with quality requirements of the project/job.**

**Use of LANL Welding Procedures and Welder Qualifications for non-LANL work shall be at the sole risk and responsibility of the Subcontractor, and the Subcontractor shall indemnify and save LANL and the Government harmless from any and all claims, demands, actions or causes of action, and for any expense or loss by the reason of Subcontractor's and their employees posession and use of LANL procedures and qualifications.**

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