

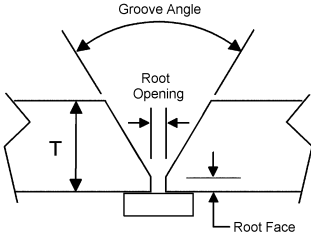
AWS D1.1 Welding Procedure Specification (WPS)

WPS No. WPS231 Date 7/9/2008 Rev. No. 0

Supporting PQR(s) PQR 231

Prepared By: _____ Date 7/9/2008 Welding Engineer

Welding Process FCAW Welding Method Semiautomatic

<p>Joint Design Used Weld Type <u>CJP Groove and fillet welds</u> Joint Type <u>Butt joint</u> Double Welded <u>No</u> Backing <u>Yes</u> Material <u>Base Metal</u> Root Opening <u>1/4 in.</u> Root Face <u>0 in.</u> Groove Angle <u>52.5°</u> Radius <u>N/A</u> Back Gouging <u>No</u> Method <u>N/A</u></p> <p>Base Metals Base Metal <u>ASTM A 131, Grade A</u> Thickness: Groove <u>3/4 - 1 1/2 in.</u> Thickness: Fillet <u>3/4 - 1 1/2 in.</u> Pipe Diameter <u>24 in. min.</u></p> <p>Filler Metals AWS Specification <u>5.20</u> AWS Classification <u>E71T-1</u></p> <p>Shielding Gas <u>100% CO2</u> Flow Rate <u>41 - 54 CFH</u> Gas Cup Size <u>#4</u> Electrode-Flux (Class) <u>N/A</u> Flux Trade Name <u>N/A</u></p> <p>Preheat Preheat Temperature, Min. <u>75°F</u> Interpass Temperature, Min. <u>75°F</u> Max. <u>350°F</u></p>	<p>Joint Detail</p> <div style="text-align: center;">  <p>SINGLE VEE GROOVE</p> </div> <p>Position Weld Position: Groove <u>Overhead only</u> Weld Position: Fillet <u>Overhead only</u> Vertical Progression <u>N/A</u></p> <p>Electrical Characteristics Current / Polarity <u>DCEP (reverse)</u> Transfer Mode <u>Globular arc</u> Tungsten Electrode: Type <u>N/A</u> Size <u>N/A</u></p> <p>Technique Stringer or Weave Bead <u>Stringer bead</u> Multi-pass or Single Pass (per side) <u>Multipass</u> Number of Electrodes <u>1</u> Electrode Spacing: Longitudinal <u>N/A</u> Lateral <u>N/A</u> Angle <u>N/A</u> Contact Tube to Work Distance <u>3/4-1"</u> Peening <u>none</u> Interpass Cleaning <u>Wire Brush</u></p> <p>Postweld Heat Treatment Temperature <u>None</u> Time (hr.) <u>None</u></p>
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Welding Procedure

Pass or Weld Layer(s)	Process	Filler Metal		Current		Volts	Travel Speed (in/min)
		AWS Classification	Size (in.)	Type & Polarity	Amps		
All	FCAW	E71T-1	0.045	DCEP (reverse)	180 - 220	25 - 26	8 - 12