

WELDING PROCEDURE SPECIFICATION (WPS)
PREQUALIFIED QUALIFIED BY TESTING
or PROCEDURE QUALIFICATION RECORDS (PQR) Yes
AASHTO/AWS D1.5 Qualification Type 5.12.1 - 5.12.2 - 5.12.4

Contractor/ Organization Boretech, LLC
 Welding Process(es) SMAW
 Type: Manual Semiautomatic
 Mechanized Automatic
 Tandem Parallel

Identification WPS - 3 Fillet Field Welding of IGPS Housing
 Revision NA Date NA By NA
 Authorized by Boretech, LLC Date 4/26/17
 Supporting PQR No.(s) NA

Butt Joint
JOINT DESIGN USED
 Single Double Weld
 Backing: Yes No Material NA
 Root Opening NA Root Face Dimension NA
 Groove Angle NA Radius (J-U) NA
 Backgouging: Yes No Method NA
 Root Treatment Remove grease and oil with solvent.

POSITION
 Position of Groove NA Fillet Vertical 5G
 Vertical Progression: Up Down

ELECTRICAL CHARACTERISTICS
 Transfer Mode (GMAW): Globular Spray
 Current: AC DCEP DCEN Pulsed
 Electrical Stick Out NA
 Other NA

Surface will be cleaned with wire brush and grinder. Joint shall be dry prior to welding.
BASE METALS
 Material Spec. Pipe - ASTM A252 / IGPS Housing - A36
 Type or Grade Pipe - Grade 3 Spiral Weld Steel Pipe / IGPS Housing - NA
 Thickness: Groove NA Fillet NA
 Diameter (Pipe) 72"

TECHNIQUE
 Stringer or Weave Bead Either
 Multi-pass or Single Pass (per side) Either
 Number of Electrodes 1
 Electrode Spacing: Longitudinal NA
 Lateral NA Angle NA
 Interpass Cleaning Clean slag with chipping hammer and wire brush

FILLER METALS
 AWS Specification AWS A5/A5.1M
 AWS Classification E7018
 Manufacturer Trade Name NA

PREHEAT
 Preheat Temp., Min. 50 degrees F
 Interpass Temp., Min. 50 degrees F
 Interpass Temp., Max. 500 degrees F

SHIELDING
 Flux NA Mfg. Trade Name NA
 Electrode-Flux (Class) NA
 Gas Composition NA
 Flow Rate NA Gas Cup Size NA

POSTWELD HEAT TREATMENT
 Temp. None Hold Time NA
 Heating/Cooling Rate 15 minutes minimum

HEAT INPUT
 Calculated Heat Input Value: kJ/in kJ/mm
 Max. Heat Input NA Min. Heat Input NA

WELDING PROCEDURE

Pass or Weld Layer(s)	Process	Filler Metals	Current		Volts	Travel Speed	Diagram
		Diam.	Type & Polarity	Amps or Wire Feed Speed			
<u>ALL</u>	<u>SMAW</u>	<u>1/8"</u>	<u>DCEP</u>	<u>115</u>	<u>21-25</u>	<u>4-8 ipm</u>	
		<u>ALL PASSES WILL HAVE MAX 3/16" BEAD</u>					

Form N-2

Form N-2—Sample Welding Procedure Specification