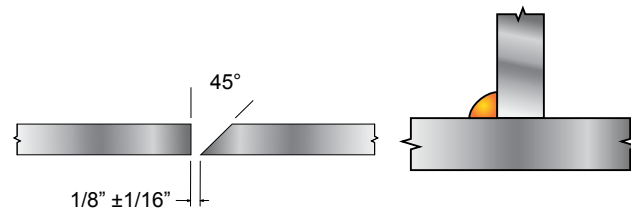


**Welding Procedure Specification**
**WPS 106**

WPS No. **WPS 106** Revision **2** Date **4/20/2012** By **NP**  
 Authorized By **GH** Date **5/15/2011** Prequalified   
 Welding Process(es) **SMAW** Type: Manual  Machine  Semi-Auto  Auto   
 Supporting PQR(s) **Prequalified**

**JOINT**

Type **T-Joint**  
 Backing Yes  No  Single Weld  Double Weld   
 Backing Material **N/A**  
 Root Opening **N/A** Root Face Dimension **N/A**  
 Groove Angle **N/A** Radius (J-U) **N/A**  
 Back Gouge Yes  No   
 Method **N/A**


**BASE METALS**

Material Spec. **A-36** to **A-36**  
 Type or Grade \_\_\_\_\_ to \_\_\_\_\_  
 Thickness: Groove (in ) **N/A** - **N/A**  
 Fillet ( ) **Unlimited** - \_\_\_\_\_  
 Diameter (Pipe, in ) **N/A** - **N/A**

**POSITION**

Position of Groove **All** Fillet **All**  
 Vertical Progression:  Up  Down

**ELECTRICAL CHARACTERISTICS**

Transfer Mode (GMAW):  
 Short-Circuiting  Globular  Spray   
 Current: AC  DCEP  DCEN  Pulsed   
 Other **N/A**  
 Tungsten Electrode (GTAW):  
 Size **N/A** Type **N/A**

**FILLER METALS**

AWS Specification **A5.1**  
 AWS Classification **E-6010**

**SHIELDING**

Flux **N/A** Gas **N/A**  
 Composition **N/A**  
 Electrode-Flux (Class) **N/A** Flow Rate **N/A**  
 Gas Cup Size **N/A**

**PREHEAT**

Preheat Temp., Min. **60 Deg.F**  
 Thickness Up to 3/4" Temperature **N/A**  
 Over 3/4" to 1-1/2" **N/A**  
 Over 1-1/2" to 2-1/2" **N/A**  
 Over 2-1/2" **N/A**  
 Interpass Temp., Min. **N/A** Max. **N/A**

**TECHNIQUE**

Stringer or Weave Bead **Both**  
 Multi-pass or Single Pass (per side) **Multiple/Single**  
 Number of Electrodes **1**  
 Electrode Spacing: Longitudinal **N/A**  
 Lateral **N/A**  
 Angle **N/A**  
 Contact Tube to Work Distance **N/A**  
 Peening **N/A**  
 Interpass Cleaning **Chip slag and wire brush**

**POSTWELD HEAT TREATMENT**

PWHT Required   
 Temp. **N/A** Time **N/A**

**WELDING PROCEDURE**

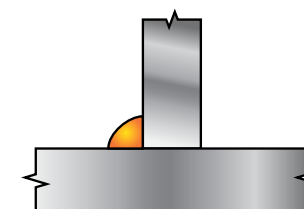
Layer/Pass	Process	Filler Metal Class	Diameter	Cur. Type	Amps	Volts	Travel Speed	Other Notes
All	SMAW	E-6010	1/8	DCEP	90-115	N/A	4-10 ipm	

**Welding Procedure Specification**
**WPS 107**

WPS No. **WPS 107** Revision **2** Date **4/20/2012** By **NP**  
 Authorized By **GH** Date **5/15/2011** Prequalified   
 Welding Process(es) **SMAW** Type: Manual  Machine  Semi-Auto  Auto   
 Supporting PQR(s) **Prequalified**

**JOINT**

Type **T-Joint**  
 Backing Yes  No  Single Weld  Double Weld   
 Backing Material **N/A**  
 Root Opening **N/A** Root Face Dimension **N/A**  
 Groove Angle **N/A** Radius (J-U) **N/A**  
 Back Gouge Yes  No   
 Method **N/A**


**BASE METALS**

Material Spec. **A-36** to **A-36**  
 Type or Grade \_\_\_\_\_ to \_\_\_\_\_  
 Thickness: Groove (in ) **N/A** - **N/A**  
 Fillet ( ) **Unlimited** - \_\_\_\_\_  
 Diameter (Pipe, in ) **N/A** - **N/A**

**POSITION**

Position of Groove \_\_\_\_\_ Fillet **1F,2F**  
 Vertical Progression:  Up  Down

**ELECTRICAL CHARACTERISTICS**

Transfer Mode (GMAW):  
 Short-Circuiting  Globular  Spray   
 Current: AC  DCEP  DCEN  Pulsed   
 Other **N/A**  
 Tungsten Electrode (GTAW):  
 Size **N/A** Type **N/A**

**FILLER METALS**

AWS Specification **A5.1**  
 AWS Classification **E-7024**

**SHIELDING**

Flux **N/A** Gas **N/A**  
 Composition **N/A**  
 Electrode-Flux (Class) **N/A** Flow Rate **N/A**  
 Gas Cup Size **N/A**

**PREHEAT**

Preheat Temp., Min. **60 Deg.F**  
 Thickness Up to 3/4" Temperature **N/A**  
 Over 3/4" to 1-1/2" **N/A**  
 Over 1-1/2" to 2-1/2" **N/A**  
 Over 2-1/2" **N/A**  
 Interpass Temp., Min. **N/A** Max. **N/A**

**TECHNIQUE**

Stringer or Weave Bead **Both**  
 Multi-pass or Single Pass (per side) **Multiple/Single**  
 Number of Electrodes **1**  
 Electrode Spacing: Longitudinal **N/A**  
 Lateral **N/A**  
 Angle **N/A**  
 Contact Tube to Work Distance **N/A**  
 Peening **N/A**  
 Interpass Cleaning **Chip slag and wire brush**

**POSTWELD HEAT TREATMENT**

PWHT Required   
 Temp. **N/A** Time **N/A**

**WELDING PROCEDURE**

Layer/Pass	Process	Filler Metal Class	Diameter	Cur. Type	Amps	Volts	Travel Speed	Other Notes
All	SMAW	E-7024	1/8	DCEP	130-150	N/A	4-10 ipm	