

WELDING PROCEDURE SPECIFICATION (WPS)

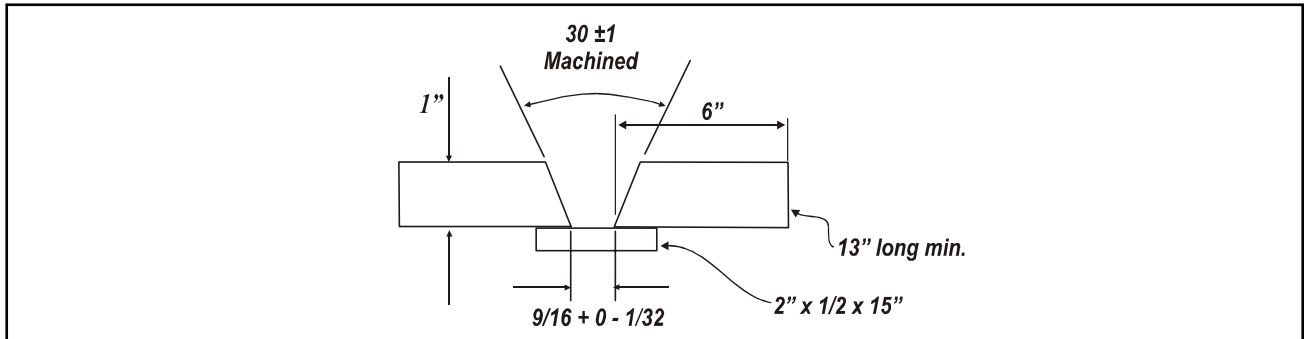
AWS A5.17 Groove Weld Test Parameters

Company Name: **Titus Steel**
 Authorized By: **Steve Usatis**
 Welding Process(es): **SAW – Single Electrodes**
 Types: **Mechanized**
 Date : May 8, 2008

WPS No. **SAW-1G-01**
 Supporting PQR No. **N/A**

Revision No. 1

Date: May 21, 2008



Joint Design Used:	<i>Butt</i>
Weld Type:	<i>V- groove</i>
Single or Double Weld	<i>Single</i>
Backing:	<i>Steel-1/2" thick x 2" wide</i>
Backing Material:	<i>A36</i>
Back Gouging:	<i>No</i>
Method:	<i>N/A</i>

Position:

Position of Groove _____ *Flat (1G)*
 Weld Progression _____ *N/A*
 Other _____

Heat Treatment:

Temperature _____
 Time _____
 Other _____

None

Base Metal:

Material Spec. *ASTM* to Material Spec. *ASTM*
 Type or Grade *A36* to Type or Grade *A36*
 Thickness: *1.0"*
 Diameter (Pipe): *N/A*

Preheat: See General Notes

Preheat Temperature _____ *70°F (ambient)*
 Interpass Temperature _____ *275 °F -300 °F*
 Other _____

Filler Metals:

AWS Specification _____ *A5.17*
 AWS Classification _____ *F7A2-EM12K*
 Size of Filler Metal _____ *5/32"*
 Wire Brand *Lincoln L61*
 Flux Brand *Lincoln 761*

Shielding Gas	% Comp.		Flow Rate
	Gas	(Mixture)	
Shielding: <i>None</i>			
Backing: <i>None</i>			

Electrical Characteristics:

Current Type _____ *DC*
 Mode of Metal Transfer (GMAW) _____ *N/A*
 Polarity _____ *Positive*
 Tungsten Electrode Size and Type _____ *None*

Technique:

String or Weave Bead _____	<i>String</i>
Oscillation _____	<i>None</i>
Multi-pass or Single Pass (per side) _____	<i>Multi-pass</i>
Single or Multiple Electrodes _____	<i>Single electrodes</i>
Gas Cup Size _____	<i>N/A</i>
Interpass Cleaning _____	<i>Chipping hammer and/or wire brush</i>
Peening _____	<i>None</i>
Push or Drag Angle _____	<i>0-5 ° push</i>
Transverse electrode angle _____	<i>90 °</i>
Contact tube to work distance _____	<i>1-1/4"</i>
Electrode Spacing _____	<i>N/A</i>
Electrode Skew _____	<i>N/A</i>

Welding Data:

Weld Size "S"	Side	Layer	Pass	Filler Metal Class	Filler Metal Ø	Wire Feed Speed (ipm)	Amps.	Volts (at feeder)	Travel Speed (ipm)	Max. Heat Input (kj/in)
1"	1	1	1-2	EM12K	5/32	40	450-500	27-28	16	52.5
	1	2	3-4	EM12K	5/32	42	500-525	27-28	16	55.1
	1	3	5-6	EM12K	5/32	42	500-525	27-28	16	55.1
	1	4	7-8	EM12K	5/32	42	500-525	27-28	16	55.1
	1	5	9-10	EM12K	5/32	42	500-525	27-28	16	55.1
	1	6	11-12	EM12K	5/32	42	500-525	27-28	16	55.1
	1	7	13-14	EM12K	5/32	42	500-525	27-28	16	55.1
	1	8	15-17	EM12K	5/32	42	500-525	27-28	16	55.1

General Notes:

- 1) The point of temperature measurement shall be at the mid-length of the test assembly, 1" from the weld centerline as shown below.
- 2) Welding shall start with the material at room temperature. Welding shall continue, bead by bead, until a temperature within the interpass temperature range is reached. Thereafter, production of subsequent beads may only begin when the assembly is within the interpass temperature range of 275° F -300° F.

3) Bead sequence

