



C-spec
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AWS D1.1 Prequalified Welding Procedure Specification (pWPS)
 C-spec WeldOffice® Software

Company name	C-spec
Welding process	SMAW
Process type	Manual

Identification #	P1-A-LH	Rev. 0
Originated by	N. G. Neer	
Date	10/26/2000	
Authorized by	Q. M. Anager	
Date	10/31/2000	

Joint design used

Joint type	B - Butt joint
Joint design	Double V groove (3)
Backing	Yes
Backing material	Weld metal
Root opening (R)*	(in.) 1/4, +/-0 (+1/4, -0)
Root face (f)*	(in.) 0 to 1/8, +/-0 (+1/16, -0)
Groove angle (a)*	(deg.) 45, +10, -0 (+10, -5)
Radius (J - U)*	(deg.) n/a
Back gouging	Yes
Back gouging method	Mechanical or Thermal

Position

Welding position:	Groove	All
	Fillet	n/a
Vertical progression		

Electrical characteristics

Transfer mode (GMAW)	N/A
Current type	DCEP
Other	

Technique

Stringer or weave bead	Stringer or Weave
Multi/single pass (per side)	Single or Multiple
Number of electrodes	Single electrode
Spacing:	
Longitudinal	(in.) -
Lateral	(in.) -
Angle	(deg.) -
Contact tube to work	(in.) -
Peening	Not permitted
Interpass cleaning	Brushing or grinding

Base metals

* Datum, As Detailed (As Fit-Up)

Spec., type or grade	SA-36 (UNS K02600)
Thickness:	
Groove	(in.) T1:unlimited
Fillet	(in.) n/a
Diameter (Pipe)	(in.) -

Filler metals

AWS Specification	5.1
AWS Classification	E7018

Shielding

Flux	-
Electrode-flux (class)	-
Gas composition	-
Gas flow rate	(cfh) -
Gas cup size	(in.) -

Preheat

Preheat temp.:	Min. (°F)	See notes
Interpass temp.:	Min. (°F)	See notes
	Max. (°F)	See notes

Post weld heat treatment

Temperature	(°F)	None
Time	(hrs)	-

Welding procedure

Layer	Pass	Process	Filler metal class	Filler metal diameter (in.)	Current type / polarity	Amps	Wire feed speed (in./min)	Volts	Travel speed (in./min)	Joint details
All	All	SMAW	E7018	3/32	DCEP	70-110	-	Manual	Manual	
All	All	SMAW	E7018	5/32	DCEP	120-190	-	Manual	Manual	
										Designation
										B-U3a

Notes

PREHEAT/INTERPASS
 For thickness 1/8 to 3/4(in.): 32(°F). Preheat to 70(°F) if the base metal temperature is below 32(°F).
 Over 3/4 thru 1-1/2(in.): 50(°F).
 Over 1-1/2 thru 2-1/2(in.): 150(°F).
 Over 2-1/2(in.): 225(°F).
 See additional information page for further limitations

Welding Engineer

QA Manager

Name	Signature	Name	Signature
N.G. Neer		Q. M. Anager	
Date		Date	
11/8/2000		11/8/2000	



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D1.1 Table 3.7 states:

T37-01.1

Maximum SMAW electrode diameter for flat position:

- fillet (except root passes): 5/16 in. (8.0 mm).
- groove (except root passes): 1/4 in. (6.4 mm).
- root passes: 3/16 in. (4.8 mm).

Maximum SMAW electrode diameter for horizontal position:

- fillet: 1/4 in. (6.4 mm).
- groove: 3/16 in. (4.8 mm).

Maximum SMAW electrode diameter for vertical and overhead position:

- all (except EXX14 and low-hydrogen electrodes): 3/16 in. (4.8 mm).
- EXX14 and low-hydrogen electrodes: 5/32 in. (4.0 mm).

T37-02.1

Maximum current shall be within the range of recommended operation by the filler metal manufacturer.

T37-03.1

Maximum root pass thickness:

- 3/8 in. (10 mm) for Flat,
- 5/16 in. (8 mm) for Horizontal,
- 1/2 in. (12 mm) for Vertical,
- 5/16 in. (8 mm) for Overhead position.

T37-04.1

Maximum SMAW fill pass thickness is 3/16 in. (5 mm).

T37-05.1

Maximum SMAW single-pass fillet weld size:

- 3/8 in. (10 mm) for Flat,
- 5/16 in. (8 mm) for Horizontal,
- 1/2 in. (12 mm) for Vertical,
- 5/16 in. (8 mm) for Overhead position.

D1.1 Table 3.7. end of quote.