

Brown & Root, Inc.

HOUSTON, TEXAS



PQR No.

0112BB112

Rev.

0

WPS No.

0112BB112

0

PROCEDURE QUALIFICATION RECORD

WELDING PROCESS (ES) 1. SMAW 2. N/A		TYPE Manual TYPE N/A	
BASE METALS (QW-403) Matl. Spec. SA- 36 To SA- 570 Type or Grade N/A GR. D P No. 1 Gr. No. 1 To P No. N/A Gr. No. N/A Coupon OD N/A Thickness .125 IN. O. D. Range Qualified Unlimited Deposited Weld Metal Thk. 1. .125 2. N/A IN. Total Thk. Range Qualified .0625-.250 IN.		JOINTS (QW-402) Groove Angle N/A Land N/A Root Opening 1/16 B. S. Matl. N/A (Joint Design Used)	
FILLER METALS (QW-404) F. No. 1. 4 2. N/A A No. 1. 1 2. N/A SFA Spec. No. 1. 5.1 2. N/A AWS Class. No. 1. E7018 2. N/A Size of Electrode 1. 3/32 2. N/A IN. Size of Filler 1. N/A 2. N/A IN. Electrode - Flux Class N/A Consumable Insert 1 N/A Trade Name N/A		GAS (QW-408) Shielding Gas N/A Flow Rate N/A CFH Purge Gas N/A Flow Rate N/A CFH	
POSITION (QW-405) Welding Position 1G Welding Progression N/A		ELECTRICAL CHARACTERISTICS (QW-409) Current 1. DCRP 2. N/A Amps Range 1. 80 2. N/A Volts Range 1. 24 2. N/A Tungsten Elect. Size/Type N/A	
PREHEAT (QW-406) Preheat Temp 70 °F Interpass Temp 70-500 °F		TECHNIQUE (QW-410) Stringer or Weave Bead 1. Stringer 2. N/A Bead Width 1. 5/16 2. N/A IN. Orifice or Gas Cup Size 1. N/A 2. N/A IN. Oscillation 1. N/A 2. N/A IN. Multi or Single Layer 1. Multiple (Per Side) 2. N/A Multiple or Single Electrodes Single Travel Speed Range 1. N/A 2. N/A IPM Peening Not allowed Backgouging method N/A	
POSTWELD HEAT TREATMENT (QW-407) Type N/A Temperature N/A °F Time Range N/A			

TENSILE TEST

Specimen		Dimensions (IN.)		Area (IN. ²)	Ultimate Total Load Lb	Ultimate Unit Strength psi	Character of Failure And Location
No.	Fig. No.	Width	Thickness				
1	QW462.1(a)	1.256	.107	.134	9100	67,910	Ductile in Base Metal
1	QW462.1(a)	1.286	.106	.136	9400	69,118	Ductile in Base Metal

GUIDED BEND TESTS

Specimen			Result	Specimen			Result
No.	Fig. No.	Type		No.	Fig. No.	Type	
A	QW4623(a)	FB	Acceptable	C	QW4623(a)	RB	Acceptable
B	QW4623(a)	FB	Acceptable	D	QW4623(a)	RB	Acceptable

Materials Engineering, Power Division

Laboratory Test No 81-2

per J. Justin Berta

Date 1/20/81

We certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

B606040239 B60527

PDR FOIA
GARDEB5-59

PDR

Signed BROWN & ROOT, INC.
(Manufacturer)

Date

1-21-81

By

Brown & Root, Inc.

HOUSTON, TEXAS

CODE
ASME SEC. IXWelding Procedure Specification No. 0112BB112 Date 12-22-80
Revisions _____WELDING PROCESS(ES) 1. SMAW TYPE Manual
2. N/A TYPE N/A

BASE METALS (QW-403)

P No. 1 Gr. No. 1 to P No. A570 Gr. No. N/A
Thickness Range .062 - .250 IN.
Pipe Dia. Range Unlimited

POSTWELD HEAT TREATMENT (QW-407)

Type N/A
Temperature N/A °F
Time Range N/A

FILLER METALS (QW-404)

F No. 1 4 2. N/A
A No. 1 -1 2. N/A
SFA Spec No. 1 5.1 2. N/A
AWS Class No. 1 E7018 2. N/A
Size of Electrode 1 3/32 2. N/A IN.
Size of Filler 1. N/A 2. N/A IN.
Electrode - Flux Class N/A
Consumable Insert N/A

GAS (QW-408)

Shielding Gas 1 N/A
Percent Comp. N/A
Shielding Gas Flow Rate N/A CFH
Purge Gas N/A Flow Rate N/A CFH
Trailing Shielding Gas Composition N/A

ELECTRICAL CHARACTERISTICS (QW-409)

Current 1 DCRP 2. N/A
Amps Range 1 70-120 2. N/A
Volts Range 1 18-27 2. N/A
Tungsten Elec. Size/Type N/A

POSITION (QW-405)

Welding Position 1G
Welding Progression N/A

TECHNIQUE (QW-410)

Stringer or Weave Bead 1 Stringer 2. N/A
Bead Width 1. 5/16 2. N/A IN (Max.)
Orifice or Gas Cup Size 1. N/A 2. N/A IN.
Initial and Interpass cleaning: Welding surfaces shall be wire brushed
or ground as required to remove slag, scale or other contaminants.
Method of back gouging Grind

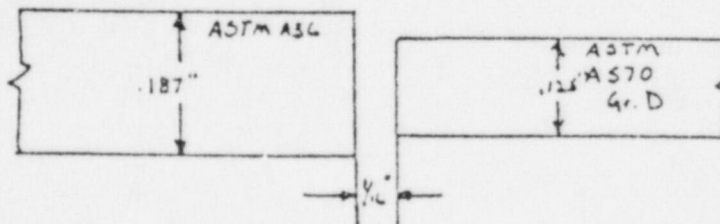
PREHEAT (QW-406)

Preheat Temp 70 °F (Min.)
Interpass Temp Range 70-500 °F
Preheat Maint 70 °F

JOINT DESIGN (QW-402)

Groove Design Square Butt
Joint Type OB Yes CI N/A BS N/A
Backing Mat. Type N/AOscillation 1. N/A 2. N/A IN.
Contact Tube to work distance N/A IN.
Multiple or Single Layer 1 Multiple
(Per Side) 2 N/A
Multiple or single electrodes Single
Travel Speed (Range) 1 N/A 2 N/A IPM.
Peening Not Allowed

Sketch Comments



Prepared by

Quentin Buta
WELDING ENGINEERING1/21/81

Approved by

William Wright
MATERIALS ENGINEERING1-21-81
DATE