

WPS NO: CA - 01

Issue Date: January 1, 2009

Revision No: 2

Revision Date: September 25, 2009

Welding Processes: GTAW/SMAW

Type: Manual

BASE METALS:

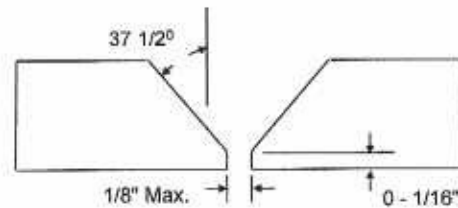
P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All

Other: Maximum deposited pass thickness shall not exceed 1/2". Filler metal must be added for all GTAW passes.
 This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/8" Maximum
 Retainers: N/A
 Other: None

**POSITIONS:**

Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:**Temperature**

Interpass Temp: 50°F Minimum
 Preheat Maint: 600°F Maximum
 Throughout all welding

TYPICAL SKETCH**POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS: (QW-404)

Process:	GTAW	SMAW
SFA No:	5.18	5.1
AWS No:	ER70S-2	E7018
F-No:	6	4
A-No:	1	1
Maximum Deposited Thickness:	1/8" - Groove -	3/4"
Electrode Flux:	N/A	N/A
Consumable Insert:	N/A	N/A
Other:	None	None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	Argon	100%	15 - 20 cfh
Backing	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode: 3/32" or 1/8" diameter EWLa-1.5 (1.5% Lanthanated)
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/16" - 3/8"
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
 BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root	GTAW	ER70S-2	3/32"	DCSP	70 - 140	10 - 15	N/A	
Root	GTAW	ER70S-2	1/8"	DCSP	70 - 140	10 - 15	N/A	
Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A	
Fill & Cap	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A	

WPS NO: CA - 02

Issue Date: January 1, 2009

Revision No: 1

Revision Date: April 2, 2009

Welding Processes: SMAW

Type: Manual

BASE METALS:

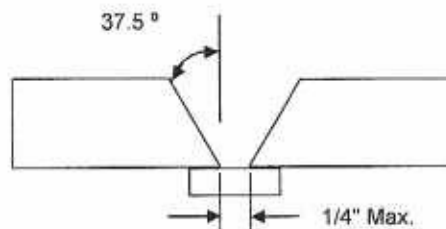
P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All

Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No. 1
 Root Spacing: 1/4" Maximum
 Retainers: N/A
 Other: None

**TYPICAL SKETCH****POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range: None
 Time Range: N/A
 Other: N/A

PREHEAT:**Temperature**

Interpass Temp: 50°F Minimum
 Preheat Maint: 600°F Maximum
 Throughout all welding

FILLER METALS: (QW-404)

Process: SMAW
 SFA No: 5.1
 AWS No: E7018
 F-No: 4
 A-No: 1
 Max. Deposited Thickness: 3/4" - Groove -
 Electrode Flux: N/A
 Other: None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode: N/A
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: N/A
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.

BACK GOUGE: None

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root, Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A	
Root, Fill & Cap	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A	

WPS NO: CA - 03

Issue Date: January 1, 2009

Revision No: 4

Revision Date: 11/15/2022 (gen)

Welding Processes: GTAW/SMAW

Type: Manual

BASE METALS:

P-No: 1

to

P-No: 1 or

P-No: 8

to P-No: 8*

Base Metal Thickness Range:

Groove: 1/16" - 3/4"

Diameter Range:

Groove: All

Other:

Maximum deposited pass thickness not to exceed 1/2". Filler metal must be added for all GTAW passes.
This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove

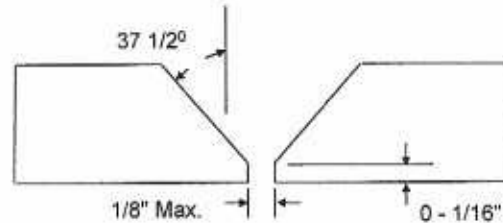
Backing (Type): None

Material: N/A

Root Spacing: 1/8" Maximum

Retainers: None

Other: None

**POSITIONS:**

Groove Position: All

Weld Progression: Vertical Up

PREHEAT:

Temperature

50°F Minimum

Interpass Temp: 350°F Maximum

Preheat Maint: Throughout all welding

TYPICAL SKETCH**POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range: None

Time Range: N/A

Other: N/A

FILLER METALS: (QW-404)

Process: GTAW

SMAW

SFA No: 5.9

5.4

AWS No: ER309/309L**

E309/309L-16**

F-No: 6

5

A-No: 8

8

Maximum Deposited Thickness: 1/8" - Groove - 3/4"

Electrode Flux: N/A

N/A

Consumable Insert: N/A

N/A

Other: None

None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	Argon	100%	10 - 20 cfh
Backing	Argon	100%	5 - 15 cfh
Shielding (GMAW):	N/A	N/A	N/A
Trailing:	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode: 3/32" or 1/8" diameter EWLa-1.5 (1.5% Lanthanated)

Metal Transfer Mode: N/A

Wire Feed Speed: N/A

Current Pulsing: N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave: Stringer or Weave

Cup or Nozzle Size: 5/16" to 3/8"

Oscillation: N/A

Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple

Peening: Not Allowed

Electrode Stickout: N/A

No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.

BACK GOUGE: None

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other
		Class	Diameter		Amps.			
Root or Root	GTAW	ER309/309L	3/32"	DCSP	80 - 110		10 - 14	N/A
Fill & Cap and / or Fill & Cap	GTAW	ER309/309L	1/8"	DCSP	100 - 130		10 - 14	N/A
	SMAW	E309/309L-16	3/32"	DCRP	40 - 70		18 - 26	N/A
	SMAW	E309/309L-16	1/8"	DCRP	60 - 100		18 - 26	N/A

*Note: Common Arc only provides P-1 material for testing.

**ER308/E308L & E308/E308L may be use for P8 material

WPS NO: CA - 04

Issue Date: January 1, 2009

Revision No: 2

Revision Date: 11/15/2022 (gen)

Welding Processes: SMAW

Type: Manual

BASE METALS:

P-No: 1 to P-No: 1 or

P-No: 3 to P-No: 9*

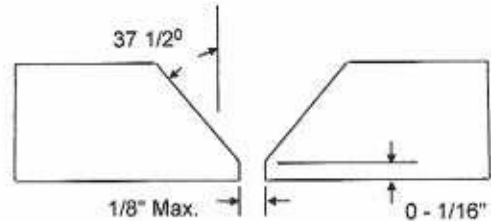
Base Metal Thickness Range: Groove: 1/16" - 3/4"

Diameter Range: Groove: All

Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/8" Maximum
 Retainers: N/A
 Other: None

**POSITIONS:**

Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:

Temperature

50°F Minimum

Interpass Temp: 600°F Maximum

Preheat Maint: Throughout all welding

TYPICAL SKETCH**POSTWELD HEAT TREATMENT:**

Temp Range: None

Time Range: N/A

Other: N/A

FILLER METALS:

Process:	SMAW	SMAW
SFA No:	5.1	5.1
AWS No:	E6010	E7018
F-No:	3	4
A-No:	1	1
Maximum Deposited Thickness:	1/8" - Groove -	3/4"
Electrode Flux:	N/A	N/A
Consumable Insert:	N/A	N/A
Other:	None	None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:

Tungsten Electrode: N/A
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE:

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: N/A
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root or Root	SMAW	E6010	3/32"	DCRP	40 - 70	18 - 26	N/A	
	SMAW	E6010	1/8"	DCRP	75 - 130	18 - 26	N/A	
Fill & Cap and / or Fill & Cap	SMAW	E7018	3/32"	DCRP	70 - 110	18 - 26	N/A	
	SMAW	E7018	1/8"	DCRP	90 - 150	18 - 26	N/A	

*Note: Common Arc only provides P-1 material for testing.

WPS NO: CA - 05

Issue Date: January 1, 2009

Revision No: 2

Revision Date: 11/15/2022 (gen)

Welding Processes: FCAW

Type: Semi-Automatic

BASE METALS:

P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All

Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

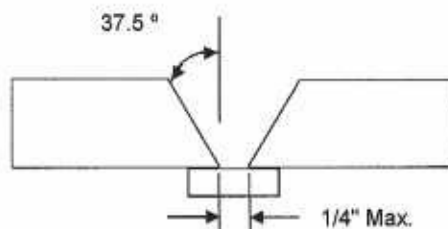
Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No. 1
 Root Spacing: 1/4" Maximum
 Retainers: N/A
 Other: None

POSITIONS:

Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:**Temperature**

50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

**TYPICAL SKETCH****POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS: (QW-404)

Process: FCAW
 SFA No: 5.20
 AWS No: E71T-1M
 F-No: 6
 A-No: 1
 Max. Deposited Thickness: 3/4" - Groove -
 Other: None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	Argon/CO ₂	75%/25%	25 - 30 cfh

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode: N/A
 Metal Transfer Mode: Spray/Globular
 Wire Feed Speed: 300 - 750 ipm
 Current Pulsing: N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 1/2"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 3/4"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other
		Class	Diameter		Amps.			
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-1M	0.035"	DCRP	130 - 180		22 - 28	N/A
	FCAW	E71T-1M	0.045"	DCRP	130 - 180		22 - 28	N/A
	FCAW	E71T-1M	0.062"	DCRP	130 - 180		22 - 28	N/A

WPS NO: CA - 06

Issue Date: January 1, 2009

Revision No: 1

Revision Date: 11/15/2022 (gen)

Welding Processes: FCAW

Type: Semi Automatic

BASE METALS:

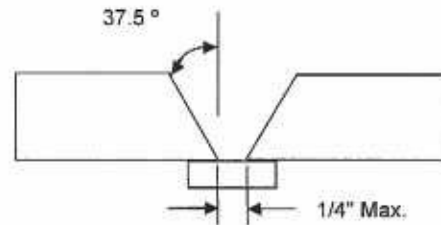
P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All

Other: Self Shielded FCAW - Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No 1
 Root Spacing: 1/4" Maximum
 Retainers: None
 Other: None



POSITIONS:

Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:

Temperature

50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

TYPICAL SKETCH

POSTWELD HEAT TREATMENT:

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS:

Process: FCAW
 SFA No: 5.20
 AWS No: E71T-11
 F-No: 6
 A-No: 1
 Maximum Deposited Thickness: 3/4" - Groove -
 Other: None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:

Tungsten Electrode: N/A
 Metal Transfer Mode: Globular
 Wire Feed Speed: 150 - 275 ipm
 Current Pulsing: N/A

TECHNIQUE:

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 3/4" - 1"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 1/2" - 1 1/4"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
 BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-11	0.035"	DC-SP	160 - 220	20 - 26	N/A	
	FCAW	E71T-11	0.045"	DC-SP	160 - 220	20 - 26	N/A	
	FCAW	E71T-11	0.062"	DC-SP	160 - 220	20 - 26	N/A	

WPS NO: CA - 07

Issue Date: January 1, 2009

Revision No: 1

Revision Date: 11/15/2022 (gen)

Welding Processes: FCAW

Type: Semi Automatic

BASE METALS:

P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 3/4" Diameter Range: Groove: All

Other: Self Shielded FCAW - Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No 1
 Root Spacing: 1/4" Maximum
 Retainers: None
 Other: None

POSITIONS:

Groove Position: All

Weld Progression: Vertical Down

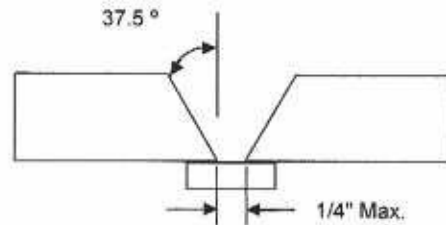
PREHEAT:

Temperature

50°F Minimum

Interpass Temp: 600°F Maximum

Preheat Maint: Throughout all welding



TYPICAL SKETCH

POSTWELD HEAT TREATMENT:

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS:

Process: FCAW
 SFA No: 5.20
 AWS No: E71T-11
 F-No: 6
 A-No: 1
 Maximum Deposited Thickness: 3/4" - Groove -
 Other: None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (GMAW):	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:

Tungsten Electrode: N/A
 Metal Transfer Mode: Globular
 Wire Feed Speed: 150 - 275 ipm
 Current Pulsing: N/A

TECHNIQUE:

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 3/4" - 1"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 1/2" - 1 1/4"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
 BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-11	0.035"	DC-SP	160 - 220	20 - 26	N/A	
	FCAW	E71T-11	0.045"	DC-SP	160 - 220	20 - 26	N/A	
	FCAW	E71T-11	0.062"	DC-SP	160 - 220	20 - 26	N/A	

WPS NO: CA - 08

Issue Date: June 10, 2015

Revision No: 1

Revision Date: 11/15/2022 (gen)

Welding Processes: FCAW

Type: Semi-Automatic

BASE METALS:

P-No: 1 to P No: 1

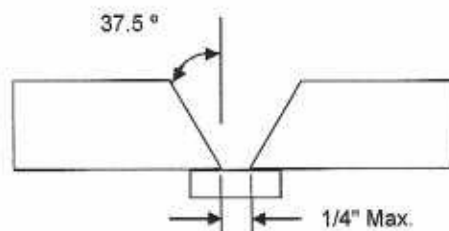
Base Metal Thickness Range: Groove: 1/16" - 3/4"

Diameter Range: Groove: All

Other: Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No. 1
 Root Spacing: 1/4" Maximum
 Retainers: N/A
 Other: None

**POSITIONS:**

Groove Position: All
 Weld Progression: Vertical Up

PREHEAT:**Temperature**

50°F Minimum
 Interpass Temp: 600°F Maximum
 Preheat Maint: Throughout all welding

TYPICAL SKETCH**POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS: (QW-404)

Process: FCAW
 SFA No: 5.20
 AWS No: E71T-12M
 F-No: 6
 A-No: 1
 Max. Deposited Thickness: 3/4" - Groove -
 Other: None

GAS: (QW-408)

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	Argon/CO ₂	75%/25%	25 - 30 cfh

ELECTRICAL CHARACTERISTICS: (QW-409)

Tungsten Electrode: N/A
 Metal Transfer Mode: Spray/Globular
 Wire Feed Speed: 300 - 750 ipm
 Current Pulsing: N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 1/2"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 3/4"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Polarity	Current		Volts	Other	
		Class	Diameter		Amps.				
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E71T-12M	0.035"	DCRP	130 - 180		22 - 28	N/A	
	FCAW	E71T-12M	0.045"	DCRP	130 - 180		22 - 28	N/A	
	FCAW	E71T-12M	0.062"	DCRP	130 - 180		22 - 28	N/A	

WPS NO: CA - 09

Issue Date: September 22, 2015

Revision No: 1

Revision Date: 11/15/2022 (gen)

Welding Processes: GTAW/SMAW

Type: Manual

BASE METALS:

P-No: 43 to P-No: 43 or

P No: 1 to P-No: 1*

Base Metal Thickness Range:

Groove: 1/16" - 3/4"

Diameter Range:

Groove: All

Other: Maximum deposited pass thickness not to exceed 1/2". Filler metal must be added for all GTAW passes.
This WPS intended for performance qualification only.

JOINTS:**GTAW****SMAW**

Joint Design:

Vee - Groove

Vee-Groove

Backing (Type):

Gas

Metal

Material:

Argon

P-No. 43

Root Spacing:

5/32"

Maximum

1/4"

Retainers:

None

None

Other:

None

None

POSITIONS:

Groove Position:

All

Weld Progression:

Vertical Up

PREHEAT:**Temperature**

50°F Minimum

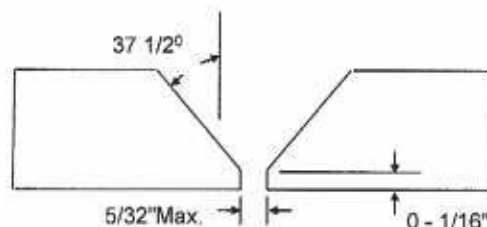
350°F Maximum

Interpass Temp:

Throughout all welding

Preheat Maint:

Throughout all welding

**TYPICAL SKETCH****POSTWELD HEAT TREATMENT: (QW-407)**

Temp Range:

None

Time Range:

N/A

Other:

N/A

FILLER METALS: (QW-404)

Process:

GTAW

SMAW

SFA No:

5.14

5.11

AWS No:

ERNiCr-3

ENiCrFe-3

F-No:

43

43

A-No:

N/A

N/A

Maximum Deposited

1/8"

- Groove -

3/4"

Thickness:

N/A

N/A

Electrode Flux:

N/A

N/A

Consumable Insert:

N/A

N/A

Other:

None

None

GAS: (QW-408)

Shielding (GTAW):

Gas

Composition

Flow Rate

Backing

Argon

100%

10 - 20 cfh

Shielding (GMAW):

Argon

100%

5 - 15 cfh

Trailing:

N/A

N/A

N/A

Trailing:

N/A

N/A

N/A

ELECTRICAL CHARACTERISTICS: (QW-409)Tungsten Electrode: 3/32" or 1/8" diameter EWLa-1.5
(1.5% Lanthanated)

Metal Transfer Mode:

N/A

Wire Feed Speed:

N/A

Current Pulsing:

N/A

TECHNIQUE: (QW-410)

Beads-Stringer or Weave:

Stringer or Weave

Cup or Nozzle Size:

5/16" to 3/8"

Oscillation:

N/A

Nozzle to Work Distance:

N/A

Passes Per Side:

Single or Multiple

Peening:

Not Allowed

Electrode Stickout:

N/A

No. Electrodes:

Single

INITIAL/INTERPASS CLEANING:

As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.

BACK GOUGE:

None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root or Root	GTAW	ERNiCr-3	3/32"	DCSP	95-200	10 - 13	N/A	
Fill & Cap and / or Fill & Cap	GTAW	ERNiCr-3	1/8"	DCSP	95-200	10 - 13	N/A	
	SMAW	ENiCrFe-3	3/32"	DCRP	40-65	24-28	N/A	
	SMAW	ENiCrFe-3	1/8"	DCRP	65-95	26-30	N/A	

*Note: Common Arc only provides P-1 material for testing.

WPS NO: CA - 11

Issue Date: January 1, 2009

Revision No: 3

Revision Date: 11/15/2022 (gen)

Welding Processes: FCAW

Type: Semi Automatic

BASE METALS:

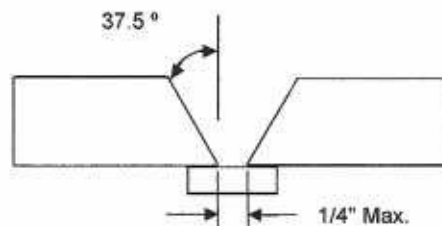
P-No: 1 to P No: 1

Base Metal Thickness Range: Groove: 1/16" - 1/2" Diameter Range: Groove: All

Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): Metal
 Material: P-No 1
 Root Spacing: 1/4" Maximum
 Retainers: None
 Other: None

**POSITIONS:**

Groove Position: All

Weld Progression: Vertical Up

PREHEAT:

Temperature
 50°F Minimum
 Interpass Temp: 350°F Maximum
 Preheat Maint: Throughout all welding

TYPICAL SKETCH**POSTWELD HEAT TREATMENT:**

Temp Range: None
 Time Range: N/A
 Other: N/A

FILLER METALS:

Process: FCAW
 SFA No: 5.22
 AWS No: E309T1-4
 F-No: 6
 A-No: 8
 Maximum Deposited Thickness: 0.500 - Groove -
 Other: None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	Argon/CO ₂	75%/25%	25 - 30 cfh

ELECTRICAL CHARACTERISTICS:

Tungsten Electrode: N/A
 Metal Transfer Mode: Spray/Globular
 Wire Feed Speed: 150 - 275 ipm
 Current Pulsing: N/A

TECHNIQUE:

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: 5/8"
 Oscillation: N/A
 Nozzle to Work Distance: 3/4" - 1"

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: 1/2"
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
 BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root, Fill & Cap or Root, Fill & Cap or Root, Fill & Cap	FCAW	E309T1-4	0.035"	DC-RP	160 - 220	20 - 26	N/A	
	FCAW	E309T1-4	0.045"	DC-RP	160 - 220	20 - 26	N/A	
	FCAW	E309T1-4	0.062"	DC-RP	160 - 220	20 - 26	N/A	

WPS NO: CA - 12

Issue Date: July 24, 2020

Revision No: 1

Revision Date: 11/15/2022 (gen)

Welding Processes: SMAW

Type: Manual

BASE METALS:

P-No: 1

to

P No: 1

Base Metal Thickness Range:

Groove: 3/16" - 1 1/4"

Diameter Range:

Groove: All

Maximum deposited pass thickness not to exceed 1/2". This WPS intended for performance qualification only.

JOINTS:

Joint Design: Vee - Groove
 Backing (Type): None
 Material: N/A
 Root Spacing: 1/16" Maximum
 Retainers: None
 Other: None

POSITIONS:

Groove Position: All

Weld Progression: Vertical Up

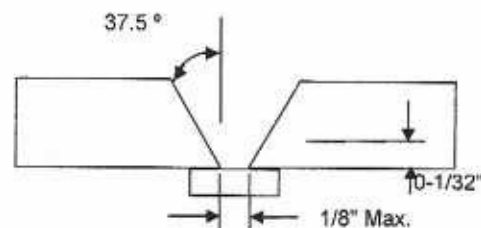
PREHEAT:

Temperature

50°F Minimum

Interpass Temp: 350°F Maximum

Preheat Maint: Throughout all welding



TYPICAL SKETCH

POSTWELD HEAT TREATMENT:

Temp Range: None

Time Range: N/A

Other: N/A

FILLER METALS:

Process:	SMAW	SMAW
SFA No:	5.50	5.5
AWS No:	E7010	E7018
F-No:	3	4
A-No:	1	1
Maximum Deposited Thickness:	0.250	- Groove - 1
Electrode Flux:	N/A	N/A
Consumable Inert	N/A	N/A
Other:	None	None

GAS:

	Gas	Composition	Flow Rate
Shielding (GTAW):	N/A	N/A	N/A
Backing	N/A	N/A	N/A
Shielding (FCAW):	N/A	N/A	N/A
Trailing:	N/A	N/A	N/A

ELECTRICAL CHARACTERISTICS:

Tungsten Electrode: N/A
 Metal Transfer Mode: N/A
 Wire Feed Speed: N/A
 Current Pulsing: N/A

TECHNIQUE:

Beads-Stringer or Weave: Stringer or Weave
 Cup or Nozzle Size: N/A
 Oscillation: N/A
 Nozzle to Work Distance: N/A

Passes Per Side: Single or Multiple
 Peening: Not Allowed
 Electrode Stickout: N/A
 No. Electrodes: Single

INITIAL/INTERPASS CLEANING: As required to produce weld surfaces free of dirt, grease, or other contaminant prior to each weld pass.
 BACK GOUGE: None.

Weld Layer	Process	Filler Metal		Current		Volts	Other	
		Class	Diameter	Polarity	Amps.			
Root or Root	SMAW	E7010-A1	3/32"	DC-RP	70 - 120	19 - 25	N/A	
	SMAW	E7010-A1	1/8"	DC-RP	100 - 150	20 - 28	N/A	
Fill & Cap and/or Fill & Cap	SMAW	E7018-A1	3/32"	DC-RP	70 - 120	19 - 25	N/A	
	SMAW	E7018-A1	1/8"	DC-RP	100 - 150	20 - 28	N/A	