

Sample Form (GMAW & FCAW)
WELDING PROCEDURE SPECIFICATION (WPS)

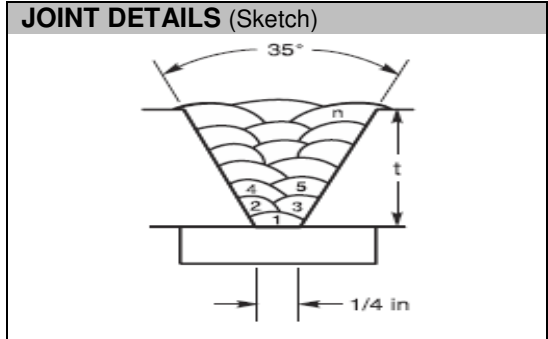
RED Inc.
Company Name
E. M. Ployee (Q.C. Mgr.)
Authorized by
12/01/2014
Date

M-N-O
WPS No.
789
Supporting PQR(s)
0 12/01/2014
Rev. No. Date

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	ASTM A131	A	I
Welded To	ASTM A131	A	I
Backing Material	ASTM A131	A	I
Other			

BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	3/4 - 1 1/2"	3/4" min.
CJP Groove w/CVN	5/8 - 1 1/2"	5/8" min.
PJP Groove Welds	Unlimited	Unlimited
Fillet Welds	Unlimited	Unlimited
DIAMETER	24" min.	24" min.

JOINT DETAILS	
Groove Type	single V groove butt weld
Groove Angle	35° included
Root Opening	1/4"
Root Face	-
Back Gouging	none
Method	-



POSTWELD HEAT TREATMENT	
Temperature	1100 - 1150°F
Time at Temperature	1 hr/in., 1 hr minimum
Other	WPS may be used with or without PWHT

PROCEDURE								
Weld Layer(s)	1-2	1-2	1-2	3-bal.	3-bal.	3-bal.	3-bal.	3-bal.
Weld Pass(es)	1-3	1-3	1-3	4-n	4-n	4-n	4-n	4-n
Process	GMAW	GMAW	GMAW	FCAW	FCAW	FCAW	FCAW	FCAW
Type (Semi-Auto./Machine/Auto.)	semi-auto.	semi-auto.	semi-auto.	semi-auto.	semi-auto.	semi-auto.	semi-auto.	semi-auto.
Position	F,V,OH	F,V,OH	F,V,OH	F,V,OH	F,V,OH	F,V,OH	F,V	F
Vertical Progression	up	up	up	up	up	up	up	-
Filler Metal AWS Spec.	A5.18	A5.18	A5.18	A5.20	A5.20	A5.20	A5.20	A5.20
AWS Classification	ER70S-6	ER70S-6	ER70S-6	E70T-7	E70T-7	E70T-7	E70T-7	E70T-7
Diameter	1/16"	1/32"	1/8"	0.045"	1/16"	5/64"	3/32"	1/8"
Manufacture/Trade Name	s-wire	s-wire	s-wire	t-wire	t-wire	t-wire	t-wire	t-wire
Shielding Gas (Composition)	100% CO₂	100% CO₂	100% CO₂	-	-	-	-	-
Flow Rate	45-55 cfh	45-55 cfh	45-55 cfh	-	-	-	-	-
Nozzle Size	#4	#4	#4	-	-	-	-	-
Preheat Temperature	60° min.	60° min.	60° min.	60° min.	60° min.	60° min.	60° min.	60° min.
Interpass Temperature	60°-350°	60°-350°	60°-350°	60°-350°	60°-350°	60°-350°	60°-350°	60°-350°
Electrical Characteristics	---	---	---	---	---	---	---	---
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP
Transfer Mode	globular	globular	globular	spray	spray	spray	spray	spray
Power Source Type	CV	CV	CV	CV	CV	CV	CV	CV
Amps	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220
Volts	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26
Wire Feed Speed	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)
Travel Speed	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm
Maximum Heat Input*	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.
Technique	---	---	---	---	---	---	---	---
Stringer or Weave	stringer	stringer	stringer	stringer	stringer	stringer	stringer	stringer
Multi or Single Pass (per side)	multipass	multipass	multipass	multipass	multipass	multipass	multipass	multipass
Oscillation (Machine/Automatic)	-	-	-	-	-	-	-	-
Number of Electrodes	1	1	1	1	1	1	1	1
Peening	None	None	None	None	None	None	None	None
Interpass Cleaning	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush
Other	*Maximum heat input limit does not apply for non impact tested applications.							

Sample Form (GMAW & FCAW)
WELDING PROCEDURE SPECIFICATION (WPS)

RED Inc.
Company Name
E. M. Ployee (Q.C. Mgr.)
Authorized by
12/01/2014
Date

M-N-O
WPS No.
789
Supporting PQR(s)
1
Rev. No.
12/01/2014
Date

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	ASTM A131	A	I
Welded To	ASTM A131	A	I
Backing Material	Any	Any	I
Other			

BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	3/4 - 1 1/2"	3/4" min.
CJP Groove w/CVN	5/8 - 1 1/2"	5/8" min.
PJP Groove Welds	Unlimited	Unlimited
Fillet Welds	Unlimited	Unlimited
DIAMETER	24" min.	24" min.

JOINT DETAILS	
Groove Type	single V groove butt weld
Groove Angle	35° (or as shown on production drawings)
Root Opening	1/4" (or as shown on production drawings)
Root Face	as shown on production drawings
Back Gouging	none
Method	-

JOINT DETAILS (Sketch)
See Production Drawings

POSTWELD HEAT TREATMENT	
Temperature	1100 - 1150°F
Time at Temperature	1 hr/in., 1 hr minimum
Other	WPS may be used with or without PWHT

PROCEDURE								
Weld Layer(s)	Any			Any				
Weld Pass(es)	Any			Any				
Process	GMAW			FCAW				
Type (Semi-Auto./Machine/Auto.)	semi-automatic			semi-automatic				
Position	F,V,OH			F,V,OH		F,V		F
Vertical Progression	up			up		up		-
Filler Metal AWS Spec.	A5.18			A5.20		A5.20		A5.20
AWS Classification	ER70S-6			E70T-7		E70T-7		E70T-7
Diameter	1/16"	1/32"	1/8"	0.045"	1/16"	5/64"	3/32"	1/8"
Manufacture/Trade Name	s-wire	s-wire	s-wire	t-wire	t-wire	t-wire	t-wire	t-wire
Shielding Gas (Composition)	100 % CO ₂	100 % CO ₂	100 % CO ₂	-	-	-	-	-
Flow Rate	45-55 cfh	45-55 cfh	45-55 cfh	-	-	-	-	-
Nozzle Size	#4	#4	#4	-	-	-	-	-
Preheat Temperature	60° min.			60° min.				
Interpass Temperature	60°-350°			60°-350°				
Electrical Characteristics	---			---				
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP
Transfer Mode	globular	globular	globular	spray	spray	spray	spray	spray
Power Source Type	CV	CV	CV	CV	CV	CV	CV	CV
Amps	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220	180 - 220
Volts	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26	25 - 26
Wire Feed Speed	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)
Travel Speed	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm	8-12 ipm
Maximum Heat Input*	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.	42.9 KJ/in.
Technique	---			---				
Stringer or Weave	stringer	stringer	stringer	stringer	stringer	stringer	stringer	stringer
Multi or Single Pass (per side)	multipass	multipass	multipass	multipass	multipass	multipass	multipass	multipass
Number of Electrodes	1	1	1	1	1	1	1	1
Peening	None	None	None	None	None	None	None	None
Interpass Cleaning	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush	wire brush
Other	*Maximum heat input limit does not apply for non impact tested applications.							