Solar Flux

P.O. Box 9145, Calabasas, CA 91372

ASME - Welding Procedure Specification (WPS)

WeldOffice WPS

WPS record number	SF_P43-P43-GT-625-TypI Revision 0	Qualified to	ASME Section IX
Date	2/11/2020	Company name	Solar Flux
Supporting PQR(s)	PQ20-0035 - Rev 0		
Reference docs.			

Scope	For GTAW production welding of P43 material with the use of Solar Flux Type I. Groove, fillet, no PWHT (As-welded)
Joint	Joint details for this welding procedure specification in: JOINTS section of this WPS, Production drawings, Engineering specifications

BASE METALS (QW-403)

Type	Nickel Alloys	P-no. 43	Grp-no. Any
Welded to	Nickel Alloys	P-no. 43	Grp-no. Any
Backing:	Flux*	P-no.	Grp-no. -
Retainers	None		
Notes	*Apply Type I Solar Flux to back-side of root		

THICKNESS RANGE QUALIFIED (in.)

	As-welded		With PWHT	
	Min.	Max.	Min.	Max.
Complete pen.	3/16	1	-	-
Impact tested	-	-	-	-
Partial pen.	3/16	1	-	-
Fillet welds	no min.	no max.	-	-

DIAMETER RANGE QUALIFIED (in.)

	As-welded		With PWHT	
	Min.	Max.	Min.	Max.
Nominal pipe size	no min.	no max.	-	-

FILLER METALS (QW-404)

THICKNESS RANGE QUALIFIED (in.)

	SFA	Classification	F-no.	A-no.	Chemical analysis or Trade name	As-welded Min.	As-welded Max.	With PWHT Min.	With PWHT Max.
GTAW	5.14	ERNiCrMo-3	43	-	See Note 1	no min.	1	-	-
Cons. insert	-	-	-	-	-	- None -			
Flux	-	-	-	-		- None -			

WELDING PROCEDURE

Welding process		GTAW
Type		Manual
Minimum preheat/interpass temperature	(°F)	50
Maximum interpass temperature	(°F)	350
Tungsten size	(in.)	3/32, 1/8
Tungsten type		SFA 5.12 EWTh-2
Filler metal size	(in.)	3/32, 1/8
Layer number		All
Position		All
Weld progression		Uphill
Current/polarity		DCEN (straight polarity)
Waveform control		None
Energy	(J)	
Power	(J/s)	
Amperes		110 - 240
Volts		9 - 16.5
Travel speed	(in./min)	2.5 - 14.5
Maximum heat input	(kJ/in.)	N/A
DC pulsing current		None
Shielding: Gas type		99.997% Argon
Flow rate	(cfh)	30 - 70
Trailing: Gas type		None
Flow rate	(cfh)	-
Backing: Gas type		None
Flow rate	(cfh)	-
String or weave		Stringer or Weave
Orifice/gas cup size		#6 - #12
Multi/Single pass per side		Multiple passes
Weld deposit chemistry		Ni - Cr - Mo
Notes		No autogenous welding

Solar Flux

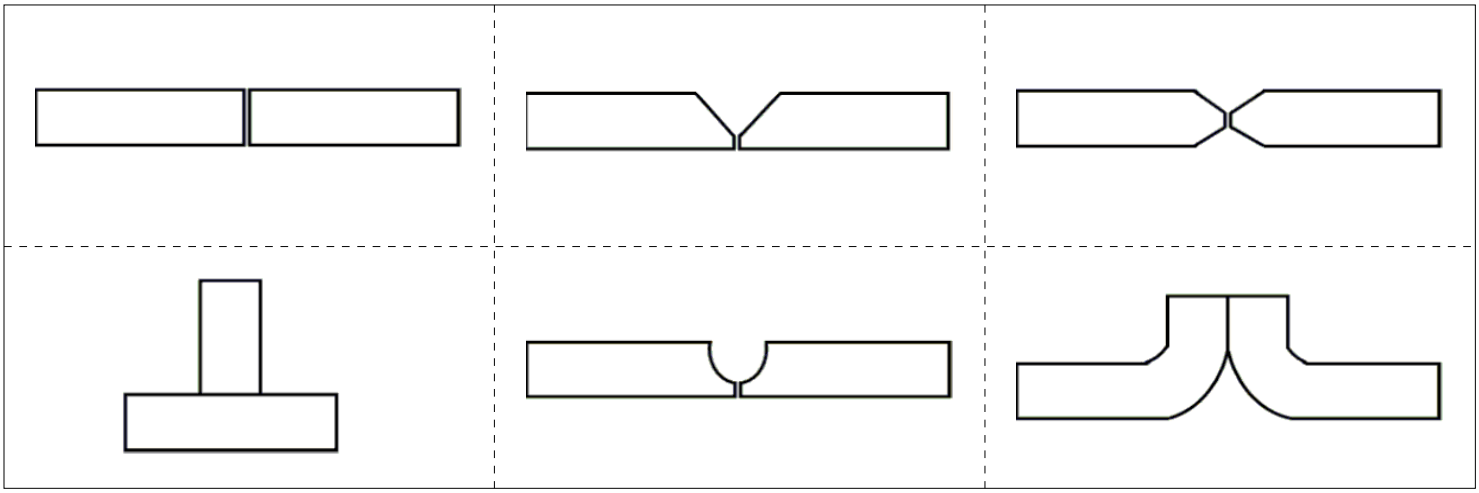
5809 Fleet Landing Blvd., Atlantic Beach, FL 32233

ASME - Welding Procedure Specification (WPS)

WeldOffice WPS

WPS record number	SF_P43-P43-GT-625-TypI Revision 0	Qualified to	ASME Section IX
Date	2/11/2020	Company name	Solar Flux

JOINTS (QW-402) Typical joint(s). See actual production drawings and engineering specifications for details.



TECHNIQUE (QW-410)

Peening	None permitted
Surface preparation	Brush and / or Grinding a minimum 2" back from edge of groove
Initial/interpass cleaning	Brushing and Grinding
Back gouging method	None

NOTES

1. Inconel Filler Metal 625 or equivalent shall be used.

2. Bare solid wire shall be used.

3. Maximum weave width shall not exceed 1.5x the GTAW cup size.

4. No single pass fillet welds allowed.

Rev. 0 2/12/2020 Initial Document Release