



KAILCO INTERNATIONAL

Plot No.149, Sector-2, Pocket-L, DSIDC Industrial Area, Bawana,
North West Delhi - Delhi-110039

WELDING PROCEDURE SPECIFICATION (WPS)

(Section IX, ASME Boiler and Pressure Vessels Code)

Company Name:- KAILCO INTERNATIONAL		Dated	
WPS NO. :	KAILCO/WPS/02 Rev 0	Dated :	24.04.2024
Supporting PQR NO. :	KAILCO/PQR/02 Rev 0	Dated :	24.04.2024
Welding Process :	GTAW + SMAW	Types :	Manual
JOINTS (QW - 402)			
Joint Design (QW402.1) :	Single V		
Backing (QW402.4) :	Yes		
Backing Material (Type) :	Weld metal for SMAW & Argon for GTAW 99.90%		
BASE METAL (QW - 403)			
P.No.:-	1	Group No.:-	1 & 2 to P. No. 1 Group No. 1 & 2
OR			
Specification Type & Grade:	SA 106 Gr. B		
to Specification Type & Grade:	SA 106 Gr. B		
OR			
Chemical Analysis & Mechanical Analysis:	N.A.		
TO			
Chemical Analysis & Mechanical Analysis:	N.A.		
Thickness Range (QW451.1) :			
Base Metal : Pipe	Groove: 1.5 mm to 12 (max.)	Fillet :	All fillet sizes on all base metal thickness and on all diameters.
Pipe Dia Range: 2'	Groove: N/A		
Maximum Pass Thickness $\leq \frac{1}{2}$ Inch (13MM) :		Yes	
Filler Metal (QW - 404)			
Process :	GTAW		SMAW
Weld Layer(s) :	Refer Attached Annexure A		
Specification No. :			
AWS NO. (Class) :			
F. No. :			
A. No. :			
Size of Filler Metals :	Ø 2.4 m.m.	Ø 3.15 m.m	
Weld Metal Thickness Range :	1.5 MM - 4.0 m.m (Max.)	1.5 MM - 8.0 m.m (Max.)	
Groove :	Single V	Single V	
Fillet :	All Size	All Size	
Electrode Flux (Class) :	N.A.		
Flux - Trade Name :			
Consumable Insert :			
Filler Metal Product Form :			
Others :			
POSITION (QW - 405)		POST WELD HEAT TREATMENT (QW - 407)	
Position of Groove:	1G	Loading Temp.	N/A
Welding Progression:	Up Hill	Heating Rate.	N/A
Position of Fillet:	All	Soaking Temp.	N/A
		Soaking Time	N/A
		Cooling Media	N/A
		Batch No.	N/A





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PREHEAT (QW - 406) Preheat Temp. (Min) : 30 °C Interpass Temp. (Max) : 200 °C Preheat Maintenance NA		GAS (QW - 408) for GTAW <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Percent Composition</th> </tr> <tr> <th></th> <th>Gas</th> <th>Mixture</th> <th>Flow Rate</th> </tr> </thead> <tbody> <tr> <td>Shielding</td> <td>Argon</td> <td>99.90%</td> <td>10 LPM</td> </tr> <tr> <td>Trailing</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Backing (Purging)</td> <td>Argon</td> <td>99.90%</td> <td>10 LPM</td> </tr> </tbody> </table>		Percent Composition					Gas	Mixture	Flow Rate	Shielding	Argon	99.90%	10 LPM	Trailing	-	-	-	Backing (Purging)	Argon	99.90%	10 LPM
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ELECTRICAL CHARACTERISTIC (QW-409) Current : As per table Amps (Range) : As per table Polarity : As per table Volts (Range) : As per table Tungsten Electrode size & type : EWTH 2 : DIA 2.4 MM Mode of Metal Transfer for GMAW : N.A.																							
TECHNIQUE (QW-410) String or Weave Bead : Root String, Other Weaving upto 3 x electrode diameter Orifice or Gas Cup Size : Ø 6 MM. Initial & Inter pass cleaning (Brushing & Grinding) : Chipping, Wire Brushing & Grinding Method of Back Gouging : Grinding Oscillation : N.A. Contract Tube to work Distance : Short to Medium Arc Multiple or Single pass (per side):- Multiple Multiple or Single Electrode : Single Travel Speed Range : As per Table Peening : Not permitted Others : Nil																							
Weld Layers	Process	Filler Metal		Current		Volts Range	Travel Speed In mm/min.	Heat Input KJ/mm (Max.)															
		Class	Dia	Type Polarity	Amp Range																		
Root	GTAW	Details as per annexure-A	Ø 2.40 mm	DCEN	95-100	10 - 12.	80-90	0.8															
Filling & Capping	SMAW	Details as per annexure-A	Ø 3.15 mm	DCEP	100-125	22 - 24	110-120	1.50															
			Ø 3.15 mm	DCEP	120-140	22 - 24	110-120	1.68															

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

Authorized Signature
KAILCO INTERNATIONAL

Inspection Authority
TUV India Pvt. Ltd.



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Annexure -A to WPS No. WPS/01 Rev 0

ANNEXURE-A

PROCESS	Base Materil Grade	Specification No. /AWS No.	F No.	A No.	WELD LAYER
GTAW	SA 106 Gr. B	SFA 5.18 ER 70S-2	6	1	ROOT RUN +
SMAW	SA 106 Gr. B	SFA 5.1 E7018	4	1	HOT PASS + SUBSEQUENT RUN & FILL UP
	SA 106 Gr. B	SFA 5.1 E7018	4	1	

