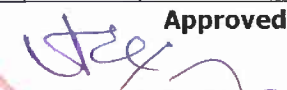


QW-482 WELDING PROCEDURE SPECIFICATION (WPS AS PER ASME SECTION IX)																									
Company Name : Gevasol Industries Pvt. Ltd.		DATE : 15/04/2024																							
Welding Procedure Specification No: GIPL/WPS/005		Rev : 1	Supporting PQR NO : GIPL/PQR/005																						
Welding Process (es): Laser Beam Welding (Fusion)			Page : 1 of 2																						
Type(s): LBW Unit Model No. : (ECO PWR JG10SN) Version : 09/2013																									
JOINTS : (QW-402) Joint design: AS PER APPROVED DRAWING Backing (Yes / No): Yes Backing Material (Type): Metal 1. Metal 2. Non-fusing Metal 3. Nonmetallic 4. Others Retainers: NONE																									
BASE METALS : (QW-403) P No.: - Gr. No. - To P No. : -- Gr..No. -- <p style="text-align: center;">OR</p> Specification type & grade: ESS Gr.35C270 to Specification type & grade: ECS Gr. 35C270 <p style="text-align: center;">OR</p> Chem. Analysis & Mech. Prop: --- to Chem. Analysis & Mech. Prop: ---		FILLER METAL : (QW-404) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">PROCESS</th> <th style="width: 30%;">LBW (Fusion)</th> </tr> </thead> <tbody> <tr><td>F. No.</td><td>NA</td></tr> <tr><td>A. No.</td><td>NA</td></tr> <tr><td>Chem. Composition</td><td>NA</td></tr> <tr><td>Cross section</td><td>NA</td></tr> <tr><td>Addition of filler metal</td><td>NA</td></tr> <tr><td>Method of addition</td><td>NA</td></tr> <tr><td>Filler Metal Product Form</td><td>NA</td></tr> <tr><td>Make / brand</td><td>NA</td></tr> <tr><td>Consumable insert</td><td>NONE</td></tr> <tr><td>Deposited weld metal thickness (Max.)</td><td>Groove: NA LAP: Lamination Stack</td></tr> </tbody> </table>		PROCESS	LBW (Fusion)	F. No.	NA	A. No.	NA	Chem. Composition	NA	Cross section	NA	Addition of filler metal	NA	Method of addition	NA	Filler Metal Product Form	NA	Make / brand	NA	Consumable insert	NONE	Deposited weld metal thickness (Max.)	Groove: NA LAP: Lamination Stack
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	Groove	Lap																							
Base Metal thk range (mm.)	NA	Stack of Lamination rings																							
Others:		Others: <div style="text-align: right;"> Anant Kulkarni CWI 11012521 QC1 EXP. 1/1/2026 </div>																							

QW 482		WPS NO: GIPL /WPS/005		Page: 2 OF 2				
POSITION : (QW-405) Position(s) of Lap : Flat (1G) Welding Progression: NA Position(s) of Fillet: NA				ELECTRICAL CHARACTERISTICS: (QW-409) Pulse Duration : 4 ms Frequency : 8 Hz Power : 91 watts				
PREHEAT : (QW-406) Preheat Temp (Min.): 10 °C Inter-pass Temp (Max.): 150 °C Max. Preheat Maintenance: NIL				TECHNIQUE : (QW-410) Cleaning Method : Acetone / Ultrasonic cleaning Oscillation : No Angle of Beam : 90 Degree Wash Pass : No 1 Vs 2 side Welding : NA Travel speed : 4 mm / sec				
POST WELD HEAT TREATMENT : (QW-407) Temperature Range : NA Time Range: NA				Optical Technique Change : No Multiple or Single pass : Two Passes Type of Equipment : Nd YAG Laser Use of Thermal Process : NA Change in Wavelength : No Spot size change : As required				
GAS: (QW-408)	Gas (es)	% Composition mixture	Flow rate (Lit/min)					
Shielding	NA	NA	NA					
Trailing	NA	NA	NA					
	NA	NA	NA					
Others: Clean the joint area on either side of the joint by wire brushing to remove rust & dirt oil grease & other materials detrimental to welding to be removed by solvents.								
Weld Layer(s)	Process (es)	Filler material		Pulse Duration	Frequency	Power	Travel speed in mm / sec	Remark
		Class	Dia (mm.)					
Two Passes	LBW Fusion	NA	NA	4 ms	8 Hz	91 watts	4 mm/sec	
Approved by  Anant Kulkarni CWI 11012521 A E Kulkarni (AWS : CWI) Weld Tech Services								

QW 483
PROCEDURE QUALIFICATION RECORD
(PQR)

Procedure Qualification Record No.: GIPL PQR/ 005 WPS No.: GIPL / WPS/005 Rev. : 0 Welding Process(es) : Laser Beam Welding (Fusion) Types (Manual, Semi automatic, Machine): LBW M/c Model (ECO PWR JG10SN) Version : 09/2013	Date: 15/04/24
---	-----------------------

JOINTS (QW 406)

BASE METAL (QW-403) Material Spec.: Carbon steel Grade 35C270 as per BIS-IS-648 To Material Spec.: Carbon steel Grade 35C270 as per BIS-IS-648 P No.: - To P No.:- Thickness of each Lamination : 0.35 mm Thick Production Mock Up ID : Meron Dia. OD 126 X LENGTH 95 mm Dia. of Prod. Mock up (mm.): 90 mm ID Others : NA	POST WELD HEAT TREATMENT (QW-407) Temperature: NA Time: NA Others: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="width: 15%;">GAS :</th> <th style="width: 15%;">Gas (es)</th> <th style="width: 35%;">% Composition mixture</th> <th style="width: 35%;">Flow rate (LPM)</th> </tr> <tr> <td>QW-408</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Shielding</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Trailing</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>Backing</td> <td>NA</td> <td>NA</td> <td>NA</td> </tr> </table>	GAS :	Gas (es)	% Composition mixture	Flow rate (LPM)	QW-408				Shielding	NA	NA	NA	Trailing	NA	NA	NA	Backing	NA	NA	NA
GAS :	Gas (es)	% Composition mixture	Flow rate (LPM)																		
QW-408																					
Shielding	NA	NA	NA																		
Trailing	NA	NA	NA																		
Backing	NA	NA	NA																		


FILLER METAL (QW-404)	LBW (Fusion)	ELECTRICAL CHARACTERISTICS (QW-409)
Weld Metal Analysis (A No.)	NA	Pulse Duration : 4 ms Frequency : 8 Hz
Filler Metal F No	NA	Power : 91 watts.
Addition of Filler	NA	Travel Speed : 4 mm / sec.
Chemical Composition	NA	
Cross section	NA	
Filler Metal Product Form	NA	
Deposited Weld Metal	Only Fusion	
Make/ Brand of Filler	NA	

POSITION (QW-405) Position : Flat (1G) Weld Progression: NA Others:	TECHNIQUE (QW-410) Angle of Beam : 90 Degree Change in Wavelength : NA Change in Oscillation: No Multi pass or Single Pass : Two passes Spot size : As required
--	--

PREHEAT (QW-405) Preheat Temp.: 25 °C (Ambient Temp.) Inter-pass Temp.: 100 °C Preheat Maintenance: NONE	Wash Pass - No Use of Thermal Process : NA Type of Equipment : Nd YAG Laser
--	--

Weld Layer(s)	Process (es)	Filler material		Pulse Duration	Frequency	Power In Watts	Travel speed range (mm./ Sec.)	Remarks
		Class	Dia (mm.)					
1st Pass - Forward 2nd Pass- Reverse	LBW Fusion	NA	NA	4 ms	8 Hz	91	4	

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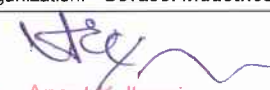

QW 483		PQR No.: GIPL /PQR/005			(contd.) 2 of 2				
TESILE TEST (QW-150) - NA									
Specimen No.	Width (mm.)	Thick (mm.)	Area (mm ²)	Ultimate Total Load (N)	Ultimate Tensile Strength (Mpa)	Min. required UTS (Mpa)	Type of failure & Location		
GUIDED BEND TESTS (QW-160) - NA									
Type and Figure No.				Results					
TOUGHNESS TESTS (QW-170) - NA									
Notch Type	Test Temp.	Notch Location	Specimen Number	Impact Values (Joules)	Min. required (Joules)	Lateral Shear (%)	Exp. (Mils)	Drop Weight	
								Break	No Break
PULL OUT TEST									
Result: Satisfactory									
MACRO TEST (QW 197.1)									
Test Result of Production Mock Up Macro Specimen : Satisfactory									
Operator's Name: Paresh Naikude T. No.: WO1					Stamp No.: GIPL/PN/WOPQ-01				
Test Conducted by: Gevasol Industries Pvt. Ltd.					By : Matscope Material Testing Labs Pvt Ltd.				
					Lab Test No. : MD06DN – 03/03				
Test Witnessed by : Mr. A. E. Kulkarni (AWS :CWI					DT : 13/04 /2024				
Weld Tech Services									
 We certify that the statements in this record are correct and that the test welds were prepared & tested in accordance with the requirement of section IX of ASME BOILER AND PRESSURE VESSEL CODE.									
Manufacturer: M/S Gevasol Industries Pvt. Ltd.									
 By: MANAGER QC									
15/04/2024									



Anant Kulkarni
CWI 11012521
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QW-484B WELDING OPERATOR PERFORMANCE QUALIFICATIONS (WOPQ)

(See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Operator's Name : Paresh Naikude		Identification No.: WO-1 Coupon Id: GIPL /WPS /005-WOPQ-01 (Meron)	
Test Description		Date of Welding : 07/04/2024	
Identification of WPS Followed : GIPL /WPS /005		Rev. : 1	<input checked="" type="checkbox"/> Test Coupon <input type="checkbox"/> Production Weld
Specification of Base Metal(s) : Carbon Steel Grade 35C270 as per BIS-IS-648 to : Carbon steel Grade 35C270 as per BS -IS -648		Thickness : 0.35 mm of Lamination	
Testing Variables and Qualification Limits			
Welding Variables(QW-350)	Actual Values	Range Qualified	
Welding Process(es)	LBW FUSION	LBW FUSION	
Type (ie, manual,semi-automatic, Machine) used	M/c No.(ECO PWR JG10SN)	M/c No.(ECO PWR JG10SN)	
Backing (metal , weld metal)	with	with	
<input type="checkbox"/> Plate <input type="checkbox"/> Pipe (enter diameter if pipe or tube)	Lamination To Lamination (entire stack)	Lamination To Lamination (entire stack)	
Base Metal P-Number to P-Number	Carbon steel Grade 35C270	Carbon steel Grade 35C270	
Filler metal or electrode specification(s) (SFA) (Info. Only)	NA	NA	
Filler metal or electrode Classification(s) (Info Only)	NA	NA	
Filler (With / Without)	NA	NA	
Filler Metal F - Number(s)	NA	NA	
Consumable Insert	None	None	
Filler Metal Product Form (solid/metal or flux cored/powder)	NA	NA	
Deposit thickness for each process			
Process :---GTAW Fusion -----3 layers minimum - No	0.35 mm thk Lamination stack	0.35 mm thk Lamination stack	
Position(s)	1G	Flat	
Direct or Remote Visual Control	Direct	Direct	
Automatic arc voltage control (GTAW)	No	NA	
Automatic joint tracking	No	NA	
Single or multiple passes	Two passes	Two passes	
Results			
Visual Examination of Completed Weld (QW - 302.4): Satisfactory			
<input type="checkbox"/> Transverse root and face bends[QW - 462.3 (a)]; <input type="checkbox"/> Longitudinal Bends[QW - 462.3 (b)]; <input type="checkbox"/> Side Bends(QW-462.2); <input type="checkbox"/> Pipe bend specimen, corrosion-resistant overlay [(QW-462.5(c)); <input type="checkbox"/> Plate bend specimen, corrosion resistant - overlay[(QW -462.5(d)); <input type="checkbox"/> Pipe Specimen, Macro test for fusion[(QW -462.5(b)); <input type="checkbox"/> Plate Specimen, Macro test for fusion[(QW -462.5(e)]			
<input type="checkbox"/> Type of Test: NA	Result:		
Qualified by Mechanical Testing			
Alternative radiographic examination results (QW-191):			
Fillet Weld - Test(QW-180) : NA Length and percent of defects : NIL			
Macro Examination(QW -197.1): -Satisfactory		Fillet Size (mm) : NA Concavity/Convexity (mm) : NA	
Radiography Test : NA Report No :			
Film or specimens evaluated by : NA Company : --			
Mechanical tests conducted : Matscope Material Testing Lab Laboratory test no.: MD06DN/-03/03 Dated : 13/04/24			
Welding Supervised by: Mr. Swapnil Kadam			
We certify that the statement 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.			
Organization: Gevasol Industries Pvt Ltd.			
Prepared By:		Certified By :	
Date: 15.04.2024	 Anant Kulkarni CWI 11012521 QC1 EXP. 1/1/2026		

TEST REPORT

Name : GEVASOL INDUSTRIES PVT LTD	TC NO : MD06DN-03/03	Date : 13.04.2024
Address : S. No 74+84, Plot No-16, Middle Lane No- 3 & 4, Ramtekdi Industrial Area, Pune- 411028 India	CHALLAN NO : Verbal	Date : 06.04.2024
Contact Person : Mr. Swapnil Kadam	Sample Received Date :	06.04.2024
Contact Details : +91 9768929218	Tested Date :	10.04.2024
	Testing Temperature	26.1°C
Lab ID No : MD06DN-03/03	Test Method - ASME SEC IX 2023 QW 183(a)	
PART 1 & SIZE : Eletrical Silicon steel Grade 35C270 as per BIS-IS-648-0.35mm THICKNESS	Magnification : 20X	
	Testing Group : Mechanical	
PART 2 & SIZE : Eletrical Silicon steel Grade 35C270 as per BIS-IS-648-0.35mm THICKNESS	Subgroup : Metallography Test	
	Etching Reagents used : HCL	
TYPE OF JOINT: Square, POSITION : 1G, WPS ID NO : GIPL/WPS/005		
JOINT ID NO : Lamination Stack-Meron DIA OD Ø 126 X ID Ø90		
Machine Model/SR NO : Make - OR LASER MODEL - ECO PWRJG10SN		
OPERATOR NAME: PARESH NAIKUDE, PROCESS : Laser Beam Welding		

MACRO ETCH TEST : Test Method : ASME SEC IX 2023 QW 183(a)

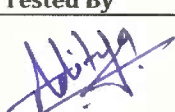
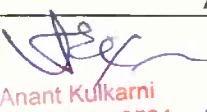
IMAGE



OBSERVATION:-

Visual examination of the cross sections of the weld metal does not show any cracks or flaws

For Matscope Material Testing Labs PVT LTD

Tested By	Authorized Signatory
 Mr Aditya Aundhkar (Lab In-charge)	 Anant Kulkarni CWI 11012521 C1 EXP. 1/1/2026 Mr. Soudagar M.J. (Tech. Manager)

NOTE : 1) This report is for sample drawn and submitted by customer. 2) This report is non NABL. 3) Matscope is going under NABL process and will receive in months time. 4) This report shall not be reproduced, except in full, without our written permission. 5) Test samples are retained by the lab for 3 months. 6) Matscope Material testing labs pvt ltd has made best effort to provide reliable and accurate information, liability of Matscope Material testing labs pvt ltd is limited to the value of testing charges billed for the respective samples and Matscope material testing labs pvt ltd is not responsible for any financial liability due to any act of omission or error.

TEST REPORT



Name : GEVASOL INDUSTRIES PVT LTD	TC NO : MD05DN-05/03	Date : 13.04.2024
Address : S. No 74+84, Plot No-16, Middle Lane No- 3 & 4, Ramtekdi Industrial Area, Pune, Maharashtra - 411028 India	CHALLAN NO : Verbal	Date : 06.04.2024
Contact Person : Mr. Swapnil Kadam	Sample Received Date :	06.04.2024
Contact Details : +91 9768929218	Tested Date :	10.04.2024
	Testing Temperature	26.1°C

Lab ID No : MD06DN-03/03	Test Method - As requested by customer
PART 1 & SIZE : Eletrical Silicon steel Grade 35C270 as per BIS-IS-648-0.35mm THICKNESS	Testing Group : Mechanical
PART 2 & SIZE : Eletrical Silicon steel Grade 35C270 as per BIS-IS-648-0.35mm THICKNESS	Group : Mechanical Properties of Metal
TYPE OF JOINT: Square, POSITION : 1G, WPS ID NO : GIPL/WPS/005	
JOINT ID NO : Lamination Stack-Meron DIA OD Ø 126 X ID Ø90	
Machine Model/SR NO : Make - OR LASER MODEL - ECO PWRJG10SN	
OPERATOR NAME: PARESH NAIKUDE, PROCESS : Laser Beam Welding	

Pull Out Test :	
Observed Max Load	1.848 kN
Observed Max Displacement	9.440 mm
Remark:	Sample tested for Pull Out Test and found to be broken at weld. No deformation at observed at Parent Metal

Note : Sample clamped in 4-5 Laminations for Pull Out Test.

For Matscope Material Testing Labs PVT LTD

Tested By	Authorized Signatory
 Mr Aditya Aundhkar (Lab In-charge)	 Anant Kulkarni WI 11012521 EXP. 1/1/2026 Mr. Soudagar M.J. (Tech. Manager)

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