WELDER PERFORMANCE QUALIFICATIONS (WPQ)

Welder's Name: Mr. Prem Prasad	Identification No: - W01

Test Description

Identification Of WPS followed: AE/WPQ/SMAW/22-01	■ Test Coupon ☐ Production Weld
Specification of Base Metal(s): E250	
WPQ No: ITD/WPQ/SMAW/20/01	Thickness: 08 MM

Testing Conditions and Qualification Limits

Welding Variables	Actual values	Range Qualified
Welding Process(es)	SMAW with backing	SMAW with backing
Type (i.e. manual,semi-auto) used	Manual	Manual
Backing (metal,weld metal,double-welded,etc.)	Weld Metal	Weld Metal
Plate – Pipe (enter diameter if pipe or tube)	Plate 08 mm thk	Plate 3 - 20 mm thk
Base metal P- or S- Number to P- or S-Number	NA	NA
Filler metal or electrode specification(s) (SFA)	NA	NA
Filler metal or electrode classification(s)	E 7018	E 7018
Filler metal F-number (s)	NA	NA
Consumable insert (GTAW or PAW)	-	-
Filler metal product form (solid/metal or flux cored/powder) (GTAW or PAW)	Electrode	Electrode
Deposit thickness for each process	-	-
Process 1 SMAW 3 layers minimum Yes ■ No ☐	08 mm	Max to be welded
Process 2 _____NA_____ 3 layers minimum Yes ☐ No ☐	-	-
Positions Qualified(2G,6G,3F,etc.)	3G	1G& 1F(Flat position in Groove & Fillet Weld)
Vertical progression (uphill or downhill)	-	-
Type of fuel gas (OFW)	-	-
Inert gas backing (GTAW,PAW,GMAW)	-	-
Transfer mode (spray/globular or pulse to short circuit-GMAW)	-	-
Current type/polarity (AC,DCEP,DCEN)	DCEP	DCEP

RESULTS

Visual Examination of Completed Weld : Satisfactory

■ Bend Test ■ Transverse root and face Longitudinal root and face

■ Side ☐ Pipe Bend Specimen corrosion-resistance weld metal overlay

☐ Plate Bend Specimen,corrosion-resistance overlay ☐ Pipe specimen, macro test for fusion

☐ Plate specimen, macro test for fusion

Type	Result	Type	Result	Type	Result
Face Bend 1	Satisfactory	Root Bend 3	Satisfactory		NA
Face Bend 2	Satisfactory	Root Bend 4	Satisfactory		NA

Alternative Volumetric Examination Results:	RT or UT ■				
Fillet weld – fracture test	NA		Length and percent of defects		NA
Fillet welds in plate	☐	Fillet weld in pipe	☐		
Macro Examination	na	Fillet size(in.)	NA	Concavity/Convexity(in)	NA
Penetrant test	Satisfactory				
Ultrasonic test specimens evaluated by:	-			Report No.	NIS/UT/26-01-2022/01
Mechanical Test conducted by:	C.G METAL LAB-CHHATRAL			Report No.	ULRTC520522000000796F
Welding supervised by:	Mehul Bheda (Total Quality)				

We certify that the statement in this record are correct and that the test coupon were prepared, welded and tested in accordance with the requirements of section IX of the AWS D1.1/D1.1 m 2015 code or iso 9606-1 2017/5173 2009

Organization:	M/s ITD CEMENTATION INDIA LIMITED		
Date:	25/01/2022	Certified by	

VISHNU PRAJAPATI LEVEL II UT PT

FOR

Procedure Qualification Records (PQR) - Page 1 of 2
Record Actual condition used to Weld Test coupon

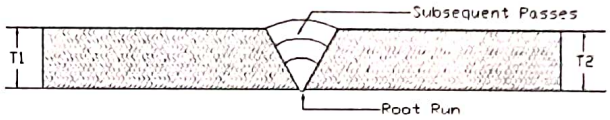
Company Name: **M/s Atharva Engineering**

PQR No: /PQR/SMAW/22/01 Dated :31/01/2022

WPS No: /WPS/SMAW/22/01 Dated 31/01/2022Revision: 00

Welding Process: Shielded Metal Arc Welding(SMAW) & Manual

Joints
Joint Design: Single V Groove weld Joint
Root Face: 1 to 1.5 MM
Root Spacing: 2.5 to 3 MM
Groove Angle: 60°
Backing & Its Material: Weld Metal



Base Metal		Post Weld Heat Treatment	
Material Specification	E 250	Temperature	NA
Type of Grade	IS 2062: E 250	Shocking Time	NA
Thickness of Test coupon	08 MM	Other	NA
Dia of Test Coupon	NA	**Gases**	
Max. Pass Thickness	NA	Shielding Gas	NA
Filler Metal		Composition%	NA
AWS Specification	A 5.1	Flow rate(LPM)	NA
AWS Classification	E 7018	**Electrical Characteristics**	
Filler Metal -No	4	Current	DC
Weld Metal Analysis No	NA	Polarity	EP
Size of Filler Metal	Ø 3.15	Amps	70-140 A
Weld Metal Thickness	08 MM	Volts	20-30 V
Position		**Technique**	
Position of Groove	3G	Travel Speed	60-150 mm/min
Other	Vertical & Up Hill	Heat Input	----
Preheat		String or weave bead	String/Weave
Preheat temp	100°C min	Orifice, Nozzle or Gas cup size	NA
Inter pass Temp	250°C max	Method of back gauging	Grinding
Other	NA	Multiple or Single pass	Multiple

VISHNU PRAJAPATI LEVEL II UT, RT, PT

Procedure Qualification Records (PQR) - Page 2 of 2

Tensile Test

Specimen No	Width (mm)	Thickness (mm)	Area (mm2)	Ultimate Total Load(KN)	Ultimate Tensile Strength(N/mm2)	Type of failure & Location
---	---	---	----	---	---	---
----	---	----	----	---	---	---

Guided Bend Tests

Bend Type and No	Results
Face Bend 1 at 180 & 4t mandrill dia	Found satisfactory
Face Bend 2 at 180 & 4t mandrill dia	Found satisfactory
Root Bend 3 at 180 & 4t mandrill dia	Found satisfactory
Root Bend 4 at 180 & 4t mandrill dia	Found satisfactory

Welder's name: MR. **Prem Prasad** Welder Stamp: W01
Test Conducted by: C.G Metal Lab-chhatral & Test Report No: ULRTC520522000000796F
UT Conducted by: NDT INSPECTION SERVICES & Test report No: NIS/UT/26-01-22/01
DPT Conducted by: NDT INSPECTION SERVICES & Test report No: NIS/DPT/25-01-22/01
We certify that the statements in this record are correct and the test welds were prepared, welded and tested in accordance with the requirements of AWS D 1.1/ D 1.1 M (2015) OR ISO 15614-1; 2017

Prepared By

Approved By

Welding Procedure Specification (WPS) - Page 1 of 2

Company Name M/s **Atharva Engineering**

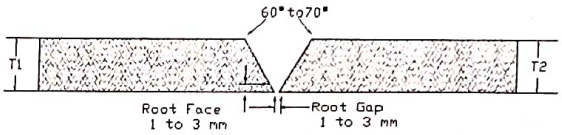
WPS No: WPS/SMAW/22/01 Dated : 31/01/2022Revision: 00

Supporting PQR No: /PQR/SMAW/22/01 Dated : 31/01/2022Revision: 00

Welding Process: Shielded Metal Arc Welding(SMAW) & Manual

Joints

Joint Design: Single V Groove weld Joint
Root Face: 1 - 2 MM
Root Spacing: 2 - 3 MM
Groove Angle: 60°
Backing & Its Material: Weld Metal
Retainer: No



Base Metals

Specification type and Grade: IS 2062: E 250 + : IS 2062: E 250
Base Metal Thickness Range : Groove: 3 mm to 20 mm Fillet : All Size
Pipe Dia: -----
Max Pass Thickness: -----

Filler Metal

Specification No:	5.1
AWS No:	E 7018
Filler Metal -No:	4
Weld Metal Analysis No:	20 mm Maxi
Size of Filler Meta/Electrode:	ϕ3.15 MM
Filler Metal Product form:	Flux coated Electrode
Flux:	NA
Supplemental Filler Metal:	NA
Weld Metal Thickness Range:	Groove: 20 mm Max Fillet: All Size
Electrode-Flux Class:	NA
Consumable Insert:	NA
Other:	----

Position

Position of Groove: 3G
Position Of Fillet: 3F
Welding Progression: Backhand/Forehand

Post Weld Heat Treatment

Minimum Holding time: NA
Holding Temperature: NA

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For LEVEL II
UT, RT

WPS/SMAW/22/01

Welding Procedure Specification (WPS) - Page 2 of 2

Preheat
Preheat Temperature: Minimum 100° C
Interpass Temperature: Maximum 250° C

Gas
Shielding Gas: NA
% Composition: NA
Flow Rate: NA

Electrical Characteristics

Pulsing Current: NA
Current AC or DC: DCEP
Ampere: 60 – 125 A
Volt: 20 – 30 V
Mode of metal Transfer: NA

Weld Pass	Filler wire AWS No	Filler wire dia(MM)	Polarity	Amp (A)	Volt (V)	Travel Speed (mm/min)	Heat Input(KJ/mm)
Root Run	E 7018	Ø2.5	DCEP	60-90	20-30	60-150	--
Filling Run	E 7018	Ø3.15	DCEP	80-130	20-30	60-150	--

Technique

String or Weave Bead:	String Root/Weave balance (Weaving not more than 3times of core dia of electrode)
Orifice, Nozzle or Gas cup Size:	NA
Initial and Inter pass Cleaning:	Brushing or Grinding
Method of back gouging:	Grinding
Oscillation:	NA
Multiple or Single Pass:	Multiple Pass
Multiple or Single Electrode:	Single Electrode
Closed to out chamber:	NA
Electrode Spacing:	NA
Manual or Automatic or Semi automatic:	Manual
Penning:	NA
Use of thermal Process:	NA

Prepared By

Approved By

TC-5205

C.G. METAL LAB
Chemical & Mechanical Testing of Metals & Alloys

Unit-1 : 51,Shivam Estate, Phase-II, GIDC Chhatral, Ta. Kalol, Dist. Gandhinagar. Gujarat - 382729
M.: +91 98256 44261, 99258 55447 | E-mail : cgmetallab@gmail.com | Web site : www.cgmetallab.com

TEST REPORT

Issue To : **Atharva Engineering**

Report No. : ULRTC520522000000796F
Date of Report : 31/01/2022

Letter Ref. No. & Date : NIL
Description : 8 mm Thick Plate, Test Coupon Size: 175 mm X 350 mm
: Welder Name: Gulam Husain, Welder No: 1

Material Specification : IS 2062 Gr. E250 A

Transverse Bend Test Date of Sample Receipt : 31/01/2022 Date of Tested : 31/01/2022

Test Method : ISO 9606-1: 2017/ ISO 5173: 2009

Test	Side Bend - 1	Side Bend - 2	Side Bend - 3	Side Bend - 4
Width (mm)	40.02	40.20	40.31	40.10
Thickness (mm)	8.12	8.09	8.10	8.10
Angle (Degree)	180	180	180	180
Result	Found Satisfactory	Found Satisfactory	Found Satisfactory	Found Satisfactory

Remark: Above results are meeting to the requirements of ISO 9606-1: 2017.

End of Report

VISHNU PRAJAPATI

For, C.G Metal lab
G.B.Vamaja (Q.M.) / C.R.Patel (T.M.)

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MO : +91 99780 51262, 98796 31399

A-13, Tirupati Tulsi Bungalows, Kalol Road, Mansa, Dist: Gandhinagar-382845
E-mail: ndtinspectionservices@yahoo.in

ULTRASONIC EXAMINATION REPORT

Client: M/s. **Atharva Engineering** **PO No. :** NA **Dated :** 26/01/2022

Location of Work Site : M/s. M/s. ITD Cementation ... **Atharva Engineering, GIDC Sanand, Ahmedabad**

Test Report No. : NIS/UT/26-01-22/01	**Description of Item tested :** Weld Piece (Test Coupons) Type of Weld:- Compound weld(T-Butt Joint) Material :- E 252 **Surface Temperature:** Room temp. Welding Process:- SMAW **Size:- 08 mm thickness**
Test Date : 26/01/2022	
Surface Condition : Clean & Smooth	
Extent of examination: 100 % of Both Side Weld Joints	**Limitations (if any) :** No

Ultrasonic Flaw Detection Technique Details :

Equipment Type & Model	MODSONIC Make - EINSTEIN-II DGS	**M/c. Sr. No.**	E2423-0210
System Calibration	**Checked :** OK	**M/c. Calibration Date :**	01/06/2021
Calibration Block No.	IIW V 2 & Sample Test Piece.	**M/c. Calibration Due Date :**	01/06/2022
Technique	Pulse Echo A scan	**Scanning Method**	Continuous Zig-Zag
Couplant	Oil		

Sketch —

Probe Type	**Frequency (MHz)**	**Range (MM)**	**Reference Db**	**Scanning Db(Ref. + 6db)**
TR probe with 10 mm Dia	4 MHz	0-50	As per DGS	As per DGS
60,70 deg. 8 x 9 mm angle probe	4 MHz	0-100	As per DGS	As per DGS

Reference Block	**Recording Level**	**Rejection Level**
IIW V 2 block 1.5 mm SDH	≥ 50 % OF DGS	**Flow Indication=Ref Level**
Reference Sensitivity:	1.5 mm SDH	
Reference Documents :	BS EN 17640:2018	
Acceptance Standard	BS EN 11666:2018 ,Level-II	
Tested By	Mr.Vishnu Prajapati (ASNT Level II UT,MT,PT,RT)	

Sr. No.	**Test Job Identification (Welder Name)**	**Welder No**	**Observation**	**Results**	**Qty.**
1	**Mr. Prem Prasad**	W-1	No Relevant Indication found	Acceptable	01 Nos

For

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E-mail: ndtinspectionservices@yahoo.in

LIQUID PENETRANT EXAMINATION REPORT

Report No.	NIS/DPT/25-01-22/01	REPORT DATE	25.01.2022
		TEST DATE	25.01.2022

CUSTOMER	M/s. Atharva Engineering
TEST SITE	M/s. Atharva Engineering, GIDC, Sanand

Test Coopan details

Sr. No.	Test Job Identification (Welder Name)	Welder No	Observation	Results	Qty.
1	Mr. Prem Prasad Size:- 08 mm thk weld Plates test coopan	W-1	No Recordable Indication	Acceptable	01 Nos

Types of Materials used.	
Dye Penetrate	PP 110 B , Make-P MET, PD-11-38023
Developer	PP 130 B, Make-P-MET.PD-11-20821
Cleaner	Loose Condition
Test Method Used	Visible Solvent Removal Penetrate Examination

Method of Inspect.

(1). Pre- cleaning: - By Cleaner
(2). Penetrate Applied By Spray & Penetrate Dwell Time 10 Minutes & Removed.
(3). Developer Applied By Spray& Dwell Time 10 Minutes.
(4). Illumination By Natural (Visible)

Surface Condition & Temp.	As Oil, Dust, Free condition & Normal Temp.
Procedure	EN 3452-1/EN 23277
Accept. Standard	EN 3452-1/EN 23277
Tested Area.	DP has been done in100% applicableweld area.
Observation	No relevant indication was found in weld root joints & Final Cap.
Remarks	As per STD Weld joints found ok-Accepted
Tested By	Mr. Vishnu Prajapati, (NDT LEVEL II UT,RT,PT,MT)

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E-mail: ndtinspectionservices@yahoo.in

RADIOGRAPHY INSPECTION REPORT

Report No.RT/01 | Date: 26/01/2022

Client: Atharva Engineering I | Client : Atharva Engg, Sanand

RADIOGRAPHY TECHNIQUE

Technique: SWSI
Source : Ir-192
Film : Kodak M x 125
Processing Time: 5 Min.
Screen : Lead
Procedure: BS EN 1435;1997
Acceptance Standard : EN ISO 10675-1 Level -I

Material : IS 2062 E 250
Thickness : 08 mm
SFD : 24"
IQI Wire : Din 62 AL 10IS16
Exp Time: 5.0 Mini
Sensitivity: ≤ 2%
Density : 2.7

Sr. No.	Identification Mark	Thk.	Film Size	Position	Observation	Remarks.
1	TP 1	08 mm	3" X 15"mm	A-B	NSD	Acceptable
	FOR WPS TEST W 01					

For, NDT Inspection Services,

NDT Level II (RT)

For, Client,

For, TPI