

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

Swarajya Tooling & Development, MIDC Bhosari, Pune- 411026

Company Name

ASHOK BEZALWAR/WELDCON SERVICES

05/02/2025

Authorized by

Date

WPS 01/AWS

WPS No.

PQR 01/AWS, DT 05/02/2025

Supporting PQR(s)

0

Rev. No.

NA

05/02/2025

Date

CVN Report

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	IS 2062	E 250	1
Welded To	IS 2062	E 250	1
Backing Material			
Other			

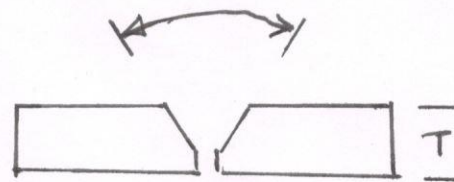
BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	-	---
CJP Groove w/CVN	-	---
PJP Groove Welds	-	---
Fillet Welds	-	---
DIAMETER	-	---

JOINT DETAILS

Groove Type	Single V Butt joint
Groove Angle	60-70 Deg.
Root Opening	2.0-3.0 mm
Root Face	1.0 mm max.
Backgouging	NA
Method	NA

POSTWELD HEAT TREATMENT

Temperature	NA
Time at Temperature	-
Other	-

JOINT DETAILS (Sketch)**PROCEDURE**

Weld Layer(s)	1	2	3	Subsequent				
Weld Pass(es)	1	1	1	1 or 2				
Process	GMAW	GMAW	GMAW	GMAW				
Type (Semiautomatic, Mechanized, etc.)	SEMI AUTOMATIC	Semi automatic	Semi automatic	Semi automatic				
Position	Any	Any	Any	Any				
Vertical Progression	Uphill for 3G	Uphill for 3G	Uphill for 3G	Uphill for 3G				
Filler Metal (AWS Spec.)	5.18	5.18	5.18	5.18				
AWS Classification	ER70S-6	ER70D-6	ER70S-6	ER70S-6				
Diameter	1.0/1.20 MM	1.0/1.20 mm	1.0/1.20 mm	1.0/1.20 mm				
Manufacturer/Trade Name	ESAB OR EQUA.							
Shielding Gas (Composition)	Ar:CO2, 80:20	Ar:CO2, 80:20	Ar:CO2, 80:20	Ar:CO2, 80:20				
Flow Rate	10-15 LPM	10-15 LPM	10-15 LPM	10-15 LPM				
Nozzle Size	12-16 MM	12-16 MM	12-16 MM	12-16 MM				
Preheat Temperature	20 Deg. C							
Interpass Temperature	-	150 Deg. C	150 Deg. C	150 Deg. C				
Electrical Characteristics	-	-	-	-				
Current Type & Polarity	DCEP							
Transfer Mode	SPRAY TYPE							
Power Source Type (cc, cv, etc.)	CV TYPE							
Amps	100-150	100-150	100-150	150-200				
Volts	22-24	22-24	22-25	24-26				
Wire Feed Speed	-							
Travel Speed	150-250MM/Min	150-250 mm/Min	150-200 mm/Min	150-200 mm/Min				
Maximum Heat Input	20 KJ/CM	20KJ/CM	20KJ/CM	20KJ/CM				
Technique	-	-	-	-				
Stringer or Weave	Stringer	Stringer	Stringer/weave	Stringer/weave				
Multi or Single Pass (per side)	Multipass	Multipass	Multipass	Multipass				
Oscillation (Mechanized/Automatic)	NA							
Traverse Length	-							
Traverse Speed	-							
Dwell Time	-							
Number of Electrodes	SINGLE							
Contact Tube to Work Distance	12-18 MM							
Peening	NA							
Interpass Cleaning	WIRE BRUSHING							
Other								

Form M-2

(See <http://go.aws.org/D1forms>)

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CWI 07081291
QC1 EXP. 8/1/2025

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Sample PQR Form (GMAW & FCAW – page 1) PROCEDURE QUALIFICATION RECORD (PQR)

Swarajya Tooling & Developments, MIDC Bhosari, Pune- 411026

PQR 01

R0

05/02/2025

Company Name

PQR No.

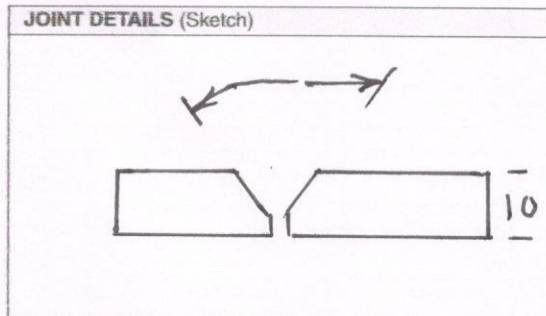
Rev. No.

Date

BASE METALS	Specification	Type or Grade	AWS Group No.	Thickness	Size (NPS)	Schedule	Diameter
Base Material	IS 2062	E 250	W1	10.0 MM	NA	NA	NA
Welded To	IS 2062	E 250	W1	10.0 MM			
Backing Material	None						
Other							

JOINT DETAILS	
Groove Type	Single V Groove joint
Groove Angle	60 Deg.
Root Opening	2.50 mm
Root Face	0.50 mm
Backgouging	NG
Method	NA

POSTWELD HEAT TREATMENT	
Temperature	NA
Time at Temperature	
Other	



PROCEDURE								
Weld Layer(s)	1	2	3	4				
Weld Pass(es)	1	1	1	1				
Process	GMAW	GMAW	GMAW	GMAW				
Type (Semiautomatic, Mechanized, etc.)	Semi auto	Semi auto	Semi auto	Semi auto				
Position	Downhand, 1G	Downhand 1G	Downhand 1G	Downhand 1G				
Vertical Progression	NA							
Filler Metal (AWS Spec.)	5.18	5.18	5.18	5.18				
AWS Classification	ER70S-6	ER70S-6	ER70S-6	ER70S-6				
Diameter	1.20 MM	1.20 MM	1.20 MM	1.20 MM				
Manufacturer/Trade Name	Esab							
Shielding Gas Composition	Ar:CO ₂ , 80:20	Ar:CO ₂ , 80:20	Ar:CO ₂ , 80:20	Ar:CO ₂ , 80:20				
Flow Rate	12 LPM	12 LPM	12 LPM	12 LPM				
Nozzle Size	12.0 MM	12.0 MM	12.0 MM	12.0 MM				
Preheat Temperature	32 Deg.C							
Interpass Temperature	-	<150 Deg.C	<150 Deg.C	<150 Deg.C				
Electrical Characteristics	---	---	---	---				
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP				
Transfer Mode (GMAW)	SPRAY	SPRAY	SPRAY	SPRAY				
Power Source Type (cc, cv, etc.)	CV Type	CV Type	CV Type	CV Type				
Amps	120	120	130	160				
Volts	20-22	20-22	24	26				
Wire Feed Speed								
Travel Speed	160	160	160	180				
Maximum Heat Input	9.9 KJ/CM	11.7 KJ/CM	11.7 KJ/CM	13.8 KJ/CM				
Technique	---	---	---	---				
Stringer or Weave	Stringer	Stringer	Weave	Weave				
Multi or Single Pass (per side)	Multi							
Oscillation (Mechanized/Automatic)	NA							
Traverse Length								
Traverse Speed								
Dwell Time								
Number of Electrodes	One							
Contact Tube to Work Dist.	16 mm							
Peening	NA							
Interpass Cleaning	WIRE BRUSHING							
Other								

Form M-1 (Front)

(See <http://go.aws.org/D1forms>)

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PQR 01	R0
PQR No.	Rev. No.

✓	Type of Tests	Clause/Figure(s) Reference	Acceptance Criteria	Result	Remarks
	Visual Inspection	4.9.1	4.9.1	Satisfactory	
✓	Radiographic Examination	4.9.2.1	4.9.2.2	Acceptable	QNDT/24-25/8407, dt. 09/01/202
	Ultrasonic Testing	4.9.2.1	4.9.2.2	NA	
	2 Transverse Root Bends	4.9.3.1/Fig. 4.8	4.9.3.3	Accepted	SJ-25-7451-P, dt. 4/2/2025
	2 Transverse Face Bends	4.9.3.1/Fig. 4.8	4.9.3.3	Accepted	SJ-25-7451-P, dt 4/2/2025
	2 Longitudinal Root Bends	4.9.3.1/Fig. 4.8	4.9.3.3	NA	
	2 Longitudinal Face Bends	4.9.3.1/Fig. 4.8	4.9.3.3	NA	
	2 Side Bends	4.9.3.1/Fig. 4.9	4.9.3.3	NA	
	4 Side Bends	4.9.3.1/Fig. 4.9	4.9.3.3	NA	
	2 Tensile Tests	4.9.3.4/Fig. 4.10	4.9.3.5	Acceptable	SJ-25-7451,dt 4/2/2025
	All-Weld-Metal Tensions	4.9.3.6/Figs. 4.14 and 4.18	4.14.1.3(b)	NA	
	3 Macroetch	4.9.4	4.9.4.1	NA	
	4 Macroetch	4.9.4	4.9.4.1		
	CVN Tests	4 Part D/Fig. 4.28	4.30 and Table 4.14	NA	

Specimen Number	Width	Thickness	Area	Ultimate Tensile Load	Ultimate Unit Stress	Type of Failure and Location
1	19.31	9.60	185.38	89.60 KN	483.33 MPa	Ductile On P.M.
2	19.28	9.62	185.47	90.40	487.41	Ductile On P.M.

Specimen Number	Notch Location	Specimen Size	Test Temperature	Absorbed Energy	Percent Shear	Lateral Expansion	Average
NA							

Welder's Name	ID Number	Stamp Number	Tests Conducted by -	
Akhilesh Kumar	AK		Laboratory	Elca Quality Systems & Calibrations P. Ltd.
			Test Number	SJ-25-7451-P, dt. 4/2/2025
			File Number	

Title		
Name		
Date		
Signature		

Ashok Bezatwar

05-02-2025

Bezatwar

(See <http://go.aws.org/D1forms>)



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QC1 EXP. 8/1/2025

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Sample Welder Qualification Form (Single-Process)
WELDER, WELDING OPERATOR, OR TACK WELDER
PERFORMANCE QUALIFICATION TEST RECORD

Name	AKHILESH KUMAR	OPTIONAL PHOTO ID	Test Date	05-01-2025	Rev.
ID Number	AK		Record No.		
Stamp No.			Std. Test No.		
Company	Swarajya Tooling & Developments, Pune - 411026.		WPS No.	WPS 01, dt 05-02-2025	
Division			Qualified To	AWS D1.1	

BASE METALS	Specification	Type or Grade	AWS Group No.	Size (NPS)	Schedule	Thickness	Diameter
Base Material	IS 2062	E 250	W 1	NA	NA	10.0	
Welded To	IS 2062	E 250	W 1			10.0	

VARIABLES	Actual Values	RANGE QUALIFIED
Type of Weld Joint	Single V Butt joint	Butt & fillet joints of all sizes
Base Metal		

	Groove	Fillet	Groove	Fillet
Plate Thickness	10.0 mm		3.0-20.0 mm	All sizes.
Pipe/Tube Thickness				
Pipe Diameter				

Welding Process	GMAW	GMAW
Type (Manual, Semiautomatic, Mechanized, Automatic)	SEMI AUTO	SEMI AUTO
Backing	NA	NA
Filler Metal (AWS Spec.)	5.18	5.18
AWS Classification	ER70S-6	ER70S-6
F-Number	6	6
Position	1G	1G/1F
Groove – Plate & Pipe ≥ 24 in		
Groove – Pipe < 24 in		
Fillet – Plate & Pipe ≥ 24 in	YES	PLATE & PIPE < 24 IN
Fillet – Pipe < 24 in	NA	NA
Progression		
GMAW Transfer Mode	SPRAY TYPE	SPRAY TYPE
Single or Multiple Electrodes	SINGLE	SINGLE
Gas/Flux Type	Argon:CO ₂ , 80:20	Argon:CO ₂ , 80:20

TEST RESULTS

Type of Test	Acceptance Criteria	Results	Remarks
VISUAL	AWS D1.1	Acceptable	
Radiography Test	AWS D1.1	Acceptable	QNDT/24-25/8407, dt. 09/01/2025
Mech. Testing, 2 Tensile+2 Face bends, 2 Root bends	AWS D1.1	Accepted	SJ-25-7451-P, dt. 4/2/2025

CERTIFICATION

Test Conducted by	
Laboratory	Mechanical Testing by- Elca Quality Systems & Calibrations Pvt. Ltd. & RT by QUALITY NDT
Test Number	SJ-25-7451-P, dt. 4/2/2025 QNDT/24-25/8407, dt. 09/01/2025
File Number	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Clause 4 of AWS D1.1/D1.1M (2020) Structural Welding Code—Steel.

(year)

Manufacturer or Contractor Swarajya Tooling & Developments, PuneAuthorized by WELDCON SERVICESDate 05/02/2025

Form M-4

(See <http://go.aws.org/D1forms>)



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CWI 07081291
QC1 EXP. 8/1/2025

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American Welding Society®

Certifies that Welding Inspector

Ashok P. Bezalwar

*has complied with the requirements of AWS QC1,
Standard for AWS Certification of Welding Inspectors*

07081291

CERTIFICATE NUMBER

Aug/01/2025

EXPIRATION DATE



W. Richard Polowinski

AWS PRESIDENT

Richard L. ...

AWS QUALIFICATION & CERTIFICATION
COMMITTEE CHAIR