

	POBOYA 2000 TPD EXPANSION PROJECT	
(CPM Work No.) 11580	Project Document No.: E2502-000-PRC-006	Revision No. : C
(Vendor Work No.) E2502	Purchase Order No. : 11580	Page 1 of 105

WELDER LIST AND WELDER PERFORMANCE QUALIFICATION RECODRS

CLIENT : PT. CITRA PALU MINERALS (CPM)
PROJECT NAME : POBOYA 2000 TPD EXPANSION PROJECT
LOCATION : PALU, SULAWESI
CONSULTANT : PT. COMO ENGINEERS (PT. CE)
VENDOR : PT. HANAZONO ENGINEERING INDONESIA
DOCUMENT NO. : E2502-000-PRC-006

FOR APPROVAL

☐ AP	APPROVED
☐ AN	APPROVED AS NOTED
☐ RE	NOT APPROVED (Re-Submit)
☐ RV	REVIEWED
☐ RN	REVIEWED WITH NOTES
☐ NR	NOT BE RETURNED
RETURN DATE	
	

						
C	August 31, 2026	Issue For Approval	Afifah	Rusnandi	Murasato	
B	July 13, 2026	Issue For Approval	Benridho	Rusnandi	Murasato	
A	March 02, 2026	Issue For Approval	Benridho	Rusnandi	Murasato	
REV	DATE ISSUED	ISSUE PURPOSE	PREPARE	CHECKED	APPROVED	AUTHORIZED



PT. HANAZONO ENGINEERING INDONESIA

	POBOYA 2000 TPD EXPANSION PROJECT	
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1. GENERAL

1.1. Scope

This List of welder and Certificate covers Quality Control requirements for applied at welding process , for supporting fabrication of Steel structure CIL Tanks Area for Poboya 2000TPD Expansion Project and to be use for Tank Package for CIL Tank area, the owned by PT Citra Palu Minerals. The project is located at Palu, Sulawesi Tengah, Indonesia., made by PT. Hanazono Engineering Indonesia which has been compiled according to all the requirements of Purchase Order (PO) and Request for Quotation (RFQ) Steel Structure and Plate works Supply and Installation.

This is item to be fabrication as below :

No.	Equipment Tag No.	Equipment Name	Quantity (Units)
1.	4420-TK-001	Leach Tank	1
2.	4430-TK-002/003/004/005/006/007	Adsorption Tanks	6

1.2. Purpose

This Welder List is mentioned of qualification and capability of welder to done the welding process according requirement and Requisition for Equipment steel structure. This welder list qualification base Code or Standard ASME Section IX

1.3. Reference

This procedure prepared in accordance with following reference:

- JIS Standards
- ASTM Standards
- ANSI
- ASME Section IX
- Local Regulation Disnaker/Migas
- Request For Quotation (RFQ) Site Fabricated Tanks Package 3655.15-61.08-4400-M-RFQ-004 Revision 0

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2. LIST OF WELDER

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WELDER'S LIST (Poboyo 2000 TPD Expansion Project)

(According ASME SECTION IX)

Issued No. : WI/CPM/26/01

Issued Date : August 31, 2026

Rev No. 3

Effective Period : November 11, 2025 ~ November 10, 2028

No.	Welder LO No.	Welder Name	Process	Test of T (mm)	Test Position	Position Qualified 1) & 4	Weld THK Range		Material	Filler metal	DIA Range (≤ 24" OD)	Backing	Consumable Inserts	AC/DC (EN or EP)	Mode * 2	Up Down	Gas Backing	Certified	Certificate No	Expired Date	Remark
							Inch	mm	P. No	F. No.											
1	YD-1138	YODI	GTAW+ SMAW	8,75	6G	All & Uphill	0.34	8,74	1	6	OD ≥ 1"	With/Without	Without	DCEN	-	Up	Ar 99 / 99%	Disqualifier	HEIWPQR/QC/1138/26/01	November 10, 2028	at Shop
						All & Uphill	Unlimited			6 & 4	OD > 1"	With	-	DCEP	-	Up	Weld Metal		HEIWPQR/QC/1138/26/04	November 10, 2028	
			SMAW	12	3G	F.H.V	0 - 24 mm			1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up		Weld Metal		
2	SR-0804	SAHRUL	GTAW+ SMAW	8,75	6G	All & Uphill	0.34	8,74	1	6	OD ≥ 1"	With/Without	Without	DCEN	-	Up	Ar 99 / 99%	Disqualifier	HEIWPQR/QC/0804/26/02	November 10, 2028	at Shop
						All & Uphill	Unlimited			6 & 4	OD > 1"	With	-	DCEP	-	Up	Weld Metal		HEIWPQR/QC/0804/26/05	November 10, 2028	
			SMAW	12	3G	F.H.V	0 - 24 mm			1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up		Weld Metal		
3	RH-1402	ROHMI	GTAW+ SMAW	8,75	6G	All & Uphill	0.34	8,74	1	6	OD ≥ 1"	With/Without	Without	DCEN	-	Up	Ar 99 / 99%	Disqualifier	HEIWPQR/QC/1402/26/03	November 10, 2028	at Shop
						All & Uphill	Unlimited			6 & 4	OD > 1"	With	-	DCEP	-	Up	Weld Metal		HEIWPQR/QC/1402/26/06	November 10, 2028	
			SMAW	12	3G	F.H.V	0 - 24 mm			1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up		Weld Metal		
4	MM-0410	MAHMUDI	GTAW+ SMAW	8,75	6G	All & Uphill	0.34	8,74	1	6	OD ≥ 1"	With/Without	Without	DCEN	-	Up	Ar 99 / 99%	Disqualifier	HEIWPQR/QC/0410/26/07	December 31, 2028	Paku Site
						All & Uphill	Unlimited			6 & 4	OD > 1"	With	-	DCEP	-	Up	Weld Metal				
5	SP-2508	SUPARLAN	SMAW	12	3G	F.H.V	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disqualifier	HEIWPQR/QC/2508/26/08	December 31, 2028	Paku Site
6	KW-2412	KOSWARA	SMAW	18	3G	F.H.V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disqualifier	HEIWPQR/QC/2412/26/09	December 31, 2028	Paku Site
7	RM-2801	RAHMATULLAH	SMAW	12	2G	FIH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H	With/Without	Without	DCEP	-	Up	Weld Metal	Disqualifier	HEIWPQR/QC/2801/26/10	April 30, 2029	Paku Site
			SMAW	18	3G	FIH.V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Filet: F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal				

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WELDER'S LIST (Poboyo 2000 TPD Expansion Project)

Issued No. : WICPM/2501

Issued Date : August 31, 2025

Rev No. 3

(According ASME SECTION IX)

Effective Period : November 11, 2025 ~ November 10, 2028

No.	Welder I.D No.	Welder Name	Process	Test of T (mm)	Test Position	Position Qualified #1 & #4	Weld Thick Range		Material	Filler metal	D/A Range (≤ 24" OD)	Backing	Consumable Inserts	AC/DC (EN or EP)	Made #2	Up Down	Gas Backing	Certified	Certificate No	Expired Date	Remark
							Inch	mm	P. No	F. No.											
8	HD-2802	HIDAYATULLOH	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2502/25/11	April 30, 2029	Pala Site
			SMAW	18	3G	FH/V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
9	AF-1387	ARIFAN	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/1307/25/12	April 30, 2029	Pala Site
			SMAW	18	3G	FH/V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
10	SD-2808	SUDARMONO	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2508/25/13	April 30, 2029	Pala Site
			SMAW	18	4G	All & Uphill	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet All	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
			FCAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2508/25/13A	June 17, 2029	Pala Site
			FCAW	12	3G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
11	AP-2807	AGUS P	SMAW	12	3G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2507/25/14	April 30, 2029	Pala Site
			SMAW	12	4G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet All	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
			FCAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2507/25/14A	June 17, 2029	Pala Site
			FCAW	12	3G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
12	JF-2806	JEPRIYAN	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2506/25/15	April 30, 2029	Pala Site
			SMAW	18	3G	FH/V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker			
13	NR-2818	NIRMANUDDIN	SMAW	18	3G	FH/V	0 - 36 mm		1	4	Grove F.V : OD > 24" F.2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	OCEP	-	Up	Weld Metal	Disnoker	HEIWPR/OC/2510/25/16	April 10, 2029	Pala Site

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WELDER'S LIST (Poboyo 2000 TPD Expansion Project) (According ASME SECTION IX)												Issued No. : WICPM/26/01		Issued Date : August 31, 2026		Rev No. 3					
												Effective Period : November 11, 2025 ~ November 10, 2028									
No.	Welder I.D No.	Welder Name	Process	Test of T (mm)	Test Position	Position Qualified #1 & #4	Weld THK Range		Material	Filler metal	DIA Range (≤ 24" OD)	Backing	Consumable Inserts	AC/DC (EN or EP)	Mode #2	Up Down	Gas Backing	Certified	Certificate No.	Expired Date	Remark
14	SY-2811	SYUKUR	SMAW	12	2G	FH	Inch	mm	P. No	F. No.	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2611/26/17	June 17 2029	Palu Site
			SMAW	12	3G	FH/V	0 - 24 mm	1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker				
15	SY-2812	M. YUSUF	SMAW	12	3G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2612/26/17	June 17 2029	Palu Site
16	MA-2813	MARTIN	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2613/26/19	June 17 2029	Palu Site
			SMAW	12	3G	FH/V	0 - 24 mm	1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker				
17	LA-2814	LADDE	SMAW	12	3G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2614/26/20	June 17 2029	Palu Site
18	FR-2815	FERNANDO	SMAW	12	2G	FH	0 - 24 mm		1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2615/26/21	June 17 2029	Palu Site
			SMAW	12	3G	FH/V	0 - 24 mm	1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker				
19	AL-2816	ALFIN	SMAW	12	3G	FH/V	0 - 24 mm		1	4	Grove F.V : OD > 24" F. 2 7/8" < OD < 24" Fillet F.H.V	With/Without	Without	DCEP	-	Up	Weld Metal	Disnaker	HE/WPQR/QC/2616/26/22	June 17 2029	Palu Site
REMARKS * 1. F = Flat, H = Horizontal, V = Vertical, O = Overhead * 2. S = Spray, G = Globular, P = Pulsating * 3. Direct visual Control (No Automatic Joint Tracking) Single pass or Multiple passes * 4. Plate and Pipe (Over 24" OD) * 5. Overlay												Prepared by :  Atifah QC Inspector August 31, 2026 Date Approved by :  Rusnani QA/QC Manager August 31, 2026 Date									

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1. Attachment-1 Welder Performance Qualification Record Yodi/YD-1138

PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name <u>YODI</u>		Identification no. <u>YD-1138</u>		Certificate no. <u>HEI/WPQR/QC/1138/26/04</u>	
Test Description Identification of WPS followed <u>008/HEI/WPS/MIGAS/21</u> ☒ Test coupon ☐ Production weld Date welded <u>November 11, 2025</u> Specification and / grade or UNS Number of base metal(s) <u>SA-36</u> Thickness <u>12 mm</u>					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : <u>SMAW</u> 3 layers minimum ☒ yes ☐ No		t: 12 mm		t: 24 mm	
Process 2 : <u>-</u> 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G / Uphill		Groove: F.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) <u>Satisfactory</u>					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) <u>Accepted</u> RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) <u>-</u> Length and percent of defects <u>-</u>					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) <u>-</u> Fillet size (in.) <u>-</u> x <u>-</u> Concavity/convexity (in.) <u>-</u>					
Other tests <u>-</u>					
☒ or specimens evaluated by <u>Didid Sugandi (RT Level II)</u> Company <u>PT. TITIAN L.A (Report No. 002/TLA/RT-HEI/XI/2025)</u> Mechanical tests conducted by <u>-</u> Laboratory test no. <u>-</u> Welding supervised by <u>Variesy Husein</u>					
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.					
Organization <u>PT. Hanazono Engineering Indonesia</u>  Prepared By: <u>BENR-CHO</u> Date: <u>March 02, 2026</u> Inspected By: <u>Variesy</u> Date: <u>March 02, 2026</u> Approved By: <u>Variesy</u> Date: <u>March 02, 2026</u>  					

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14898

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2. Attachment-2 Welder Performance Qualification Record Yodi/YD-1138



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WELDER PERFORMANCE QUALIFICATIONS RECORD

Welder's name **YODI**
Identification of WPS followed **006/HEI/WPS/MIGAS/20**
Specification and / grade or UNS Number of base metal(s) **SA 106 GR B**

Identification no. **YD-1138**
Test Description ☒ Test coupon ☐ Production weld
Date welded **November 11, 2025**
8,74 mm

Certificate no. **HEI/WPQR/QC/1138/26/01**

Testing Conditions and Qualification Limits

Welding Variables (QW-350)	Actual Values		Range Qualified	
Welding process (es)	GTAW	SMAW	GTAW	SMAW
Type (i.e. manual, semi-automatic) used	Manual	Manual	Manual	Manual
Backing (with/without)	Without	With	With/Without	With
☐ Plate ☒ Pipe (enter diameter if pipe or tube)	Pipe NPS 2" (50.8mm)		OD ≥ 1"	OD ≥ 1"
Base metal P-Number to P-Number	1 to 1	1 to 1	1-15F, 34, 41-49	1-15F, 34, 41-49
Filler metal or electrode specification(s) (SFA) (info only)	5.18	5.1		
Filler metal or electrode classification(s) (info only)	ER 70S-G	E 7018-1H4R		
Filler metal F-Number(s)	5	4	6	4, 3, 2, 1 with backing
Consumable insert (GTAW or PAW)	Without	-	Without	-
Filler Metal Product Form (QW-404.23) (GTAW or PAW)	Solid	-	Solid	-
Deposit thickness for each process	2,5 mm		5 mm	
Process 1 : GTAW 3 layers minimum ☐ yes ☒ No	6,24 mm		12,48 mm	
Process 2 : SMAW 3 layers minimum ☒ yes ☐ No				
Position(s)	6 G	6 G	in accordance QW-461.9 (All Position)	
Vertical progression (uphill or downhill)	Uphill	Uphill	Uphill	Uphill
Type of fuel gas (OFW)	Argon 99,99%	-	Argon 99,99%	-
Use of backing gas (GTAW, PAW, GMAW)	Without	-	With/Without	-
Transfer mode (spray, globular, or pulse to short circuit-GMAW)	-	-	-	-
GTAW current type and polarity (AC, DCEP, DCEN)	DCEN	-	DCEN	-

RESULTS

Visual Examination of Completed Weld (QW-302.4) **Satisfactory**

☐ Transverse face and root bends [QW-462.3(a)]
☐ Pipe specimen, macro test for fusion [QW-462.5(b)]

☐ Longitudinal bends [QW-462.3(b)]
☐ Plate specimen, macro test for fusion [QW-462.5(d)]

☐ Side bends [QW-462.2]
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]

Type	Result	Type	Result	Type	Result
		Blank			

Alternative Volumetric examination results (QW-191) **Accepted** RT ☒ or UT ☐ (check one)

Fillet weld - fracture test (QW-181.2) - Length and percent of defects -

☐ Fillet welds in plate [QW-462.4(b)]
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -

☐ Fillet welds in pipe [QW-462.4(c)]

Other tests -

Film or specimens evaluated by Didid Sugandi (RT Level II) Company PT. TITAN L.A (Report No. 001/TLA/RT-HEI00/2025)

Mechanical tests conducted by - Laboratory test no. -

Welding supervised by Variesy Husein

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.



Prepared By: BEORONO Date: March 02, 2026

Inspected By: VARIESY Date: March 02, 2026

Approved By: [Signature] Date: March 03, 2026




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3. Attachment-3 Welder Performance Qualification Record Sahrul/SR-0904

 WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SAHRUL		Identification no. SR-0904		Certificate no. HEI/WPQR/QC/0904/26/05	
Test Description Identification of WPS followed 008/HEI/WPS/MIGAS/21 ☒ Test coupon ☐ Production weld Date welded November 11, 2025 Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm		t: 24 mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G / Uphill		Groove: F.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistance weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by <u>Didid Sugandi (RT Level II)</u> Company <u>PT. TITAN L.A (Report No. 002/TLA/RT-HEI/XI/2025)</u>					
Mechanical tests conducted by - Laboratory test no. -					
Welding supervised by <u>Variesy Husein</u>					
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.					
		Organization <u>PT. Hanazono Engineering Indonesia</u> Prepared By <u>BENEDICTO</u> Date <u>March 02, 2026</u> Inspected By <u>Variesy</u> Date <u>March 02, 2026</u> Approved By <u>Kuswanto</u> Date <u>March 02, 2026</u>			
		 			

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4. Attachment-4 Welder Performance Qualification Record Sahrul/SR-0904

PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SAHRUL		Identification no. SR-0904		Certificate no. HEI/WPQR/QC/0904/26/02	
Test Description					
Identification of WPS followed 006/HEI/WPS/MIGAS/20		☒ Test coupon ☐ Production weld		Date welded November 11, 2025	
Specification and / grade of UNS Number of base metal(s) SA 106 GR B				8,74 mm	
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		GTAW		GTAW	
Type (i.e. manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/Without	
☐ Plate ☒ Pipe (enter diameter if pipe or tube)		Pipe NPS 2" (60,3mm)		OD $\geq$ 1"	
Base metal P-Number to P-Number		1 to 1		1-15F,34,41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.18		5.1	
Filler metal or electrode classification(s) (info only)		ER 70S-G		E 7018-1H4R	
Filler metal F-Number(s)		6		4	
Consumable insert (GTAW or PAW)		Without		Without	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		Solid		Solid	
Deposit thickness for each process		2,5 mm		5 mm	
Process 1 : GTAW 3 layers minimum ☐ yes ☒ No		6,24 mm		12,48 mm	
Process 2 : SMAW 3 layers minimum ☒ yes ☐ No					
Position(s)		6 G		6 G	
Vertical progression (uphill or downhill)		Uphill		Uphill	
Type of fuel gas (OFW)		Argon 99,99%		Argon 99,99%	
Use of backing gas (GTAW, PAW, GMAW)		Without		With/Without	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		DCEN		DCEN	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]					
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]					
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]					
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Exam or specimens evaluated by Didi Sugandi (RT Level II) Company PT. TITIAN L.A (Report No. 001/TLA/RT-4 HEI/001/2025)					
Mechanical tests conducted by - Laboratory test no. -					
Welding supervised by Variesy Husein					
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.					
Organization PT. Hanazono Engineering Indonesia		Date March 02, 2026			
Prepared By BENKIDHO		Date March 02, 2026			
Inspected By VARIESY		Date March 02, 2026			
Approved By Handa		Date March 02, 2026			

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5. Attachment-5 Welder Performance Qualification Record Rohimi/RH-14

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name ROHIMI		Identification no. RH-1402		Certificate no. HEI/WPQR/QC/1402/26/06	
Test Description Identification of WPS followed <u>008/HEI/WPS/MIG/AS/21</u> ☒ Test coupon ☐ Production weld Date welded <u>November 11, 2025</u> Specification and / grade or UNS Number of base metal(s) <u>SA-36</u> Thickness <u>12 mm</u>					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4,3,2,1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : <u>SMAW</u> 3 layers minimum ☒ yes ☐ No		t: 12 mm		t: 24 mm	
Process 2 : <u>-</u> 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G / Uphill		Groove: F, V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F, H, V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) <u>Satisfactory</u>					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistance weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(a)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) <u>Accepted</u> RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) <u>-</u> Length and percent of defects <u>-</u>					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) <u>-</u> Fillet size (in.) <u>-</u> x <u>-</u> Concavity/convexity (in.) <u>-</u>					
Other tests <u>-</u>					
Film or specimens evaluated by <u>Didid Sugandi (RT Level II)</u> Company <u>PT. TITIAN L.A (Report No. 002/TLA/RT-HEI/X/2025)</u> Mechanical tests conducted by <u>-</u> Laboratory test no. <u>-</u> Welding supervised by <u>Variesy Husein</u>					
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.					
Organization <u>PT. Hanazono Engineering Indonesia</u> Prepared By: <u>BENRIDHO</u> Date: <u>March 02, 2026</u> Inspected By: <u>Variesy</u> Date: <u>March 03, 2026</u> Approved By: <u>Variesy</u> Date: <u>March 03, 2026</u>					
					
					

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6. Attachment-6 Welder Performance Qualification Record Rohimi/RH-1402



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WELDER PERFORMANCE QUALIFICATIONS RECORD

Welder's name **ROHIMI**
Identification of WPS followed **005/HEIWPS/MIGAS/20**
Specification and / grade of UNS Number of base metal(s) **SA 106 GR B**

Identification no. **RH-1402**
Test Description ☒ Test coupon ☐ Production weld
Date welded **November 11, 2025**

Certificate no. **HEI/WPQR/QC/1402/26/03**
8,74 mm

Testing Conditions and Qualification Limits

Welding Variables (QW-350)	Actual Values	Range Qualified
Welding process (es) Type (i.e., manual, semi-automatic) used	GTAW Manual	GTAW Manual
Backing (with/without)	Without	With/Without
☐ Plate ☒ Pipe (enter diameter if pipe or tube)	Pipe NPS 2" (60.3mm)	OD ≥ 1"
Base metal P-Number to P-Number	1 to 1	1 to 1
Filler metal or electrode specification(s) (SFA) (info only)	5.18	5.1
Filler metal or electrode classification(s) (info only)	ER 70S-G	E 7018-1H4R
Filler metal F-Number(s)	6	4
Consumable insert (GTAW or PAW)	Without	Without
Filler Metal Product Form (QW-404.23) (GTAW or PAW)	Solid	Solid
Deposit thickness for each process	2,5 mm	5 mm
Process 1 : ☒ GTAW 3 layers minimum ☐ yes ☒ No	6,24 mm	12,46 mm
Process 2 : ☐ SMAW 3 layers minimum ☒ yes ☐ No	5 G	6 G
Position(s)	Uphill	Uphill
Vertical progression (uphill or downhill)	Argon 99,99%	Argon 99,99%
Type of fuel gas (OFW)	Without	With/Without
Use of backing gas (GTAW, PAW, GMAW)	-	-
Transfer mode (spray, globular, or pulse to short circuit-GMAW)	DCEN	DCEN
GTAW current type and polarity (AC, DCEP, DCEN)	-	-

RESULTS

Visual Examination of Completed Weld (QW-302.4) ☒ Satisfactory
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]

Type	Result	Type	Result	Type	Result
			Blank		

Alternative Volumetric examination results (QW-191) ☒ Accepted ☐ RT ☐ or UT ☐ (check one)
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -
Other tests -
Form or specimens evaluated by Didid Sugandi (RT Level II) Company PT. TITAN L.A (Report No. 001/TLART-HB/XX/2025)
Mechanical tests conducted by - Laboratory test no. -
Welding supervised by VARIESY HUSEIN
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.
Organization PT. Hanazono Engineering Indonesia
Prepared By BENKIDHO Date March 02, 2026
Inspected By VARIESY Date March 02, 2026
Approved By [Signature] Date March 02, 2026







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7. Attachment-7 Welder Performance Qualification Record Mahmudi/MM-0410

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WELDER PERFORMANCE QUALIFICATIONS RECORD

Welder's name: **MAHMUDI** Identification no.: **MM-0410** Certificate no.: **HEI/WPQR/QC/0410/26/07**

Test Description: **SA 106 GR B** Date welded: **December 24, 2025**

Identification of WPS followed: **006/HEI/WPS/MIGAS/20** ☒ Test coupon ☐ Production weld

Specification and / grade or UNS Number of base metal(s): **SA 106 GR B** Thickness: **5,74 mm**

Testing Conditions and Qualification Limits

Welding Variables (QW-350)		Actual Values		Range Qualified	
		GTAW	SMAW	GTAW	SMAW
Welding process (es)		Manual	Manual	Manual	Manual
Type (i.e., manual, semi-automatic) used		Without	With	With/Without	With
Backing (with/without)		Pipe NPS 2" (50.3mm)		OD ≥ 1"	OD ≥ 1"
☐ Plate ☒ Pipe (enter diameter if pipe or tube)		1 to 1	1 to 1	1-15F, 34, 41-40	1-15F, 34, 41-40
Base metal P-Number to P-Number		5.18	5.1		
Filler metal or electrode specification(s) (SFA) (info only)		ER 70S-G	E 7018-1H4R		
Filler metal or electrode classification(s) (info only)		6	4	6	4, 3, 2, 1 with backing
Consumable insert (GTAW or PAW)		Without	-	Without	-
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		Solid	-	Solid	-
Deposit thickness for each process		2,5 mm		5 mm	
Process 1: GTAW 3 layers minimum ☐ yes ☒ No		6,24 mm		12,48 mm	
Process 2: SMAW 3 layers minimum ☒ yes ☐ No				in accordance QW-461.9 (All Position)	
Position(s)		6 G	6 G	Uphill	Uphill
Vertical progression (uphill or downhill)		Uphill	Uphill	Uphill	Uphill
Type of fuel gas (OPW)		Argon 99,99%	-	Argon 99,99%	-
Use of backing gas (GTAW, PAW, GMAW)		Without	-	With/Without	-
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-	-	-	-
GTAW current type and polarity (AC, DCEP, DCEN)		DCEN	-	DCEN	-

RESULTS

Visual Examination of Completed Weld (QW-302.4) **Satisfactory**

☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]

☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]

☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]

Type	Result	Type	Result	Type	Result
		Blank			

Alternative Volumetric examination results (QW-181) **Accepted** RT ☒ or UT ☐ (check one)

Fillet weld - fracture test (QW-181.2) - Length and percent of defects -

☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]

Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -

Other tests -

For specimens evaluated by **Rahmat Saputra (RT Level II)** Company **PT. TITIAN L.A. (Report No. 903/TLA/RT-HEV/2025)**

Mechanical tests conducted by - Laboratory test no. -

Welding supervised by **Variety Hussein**

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.

Organization **PT. Hanazono Engineering Indonesia**

Prepared By **BEURIONO** Date **March 01, 2016**

Inspected By **Variety** Date **11/01/02/2016**

Approved By **Variety** Date **11/01/02/2016**

Pemerintah Provinsi Banten

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8. Attachment-8 Welder Performance Qualification Record Suparlan/SP-2506

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SUPARLAN		Identification no. SP-2506		Certificate no. HEI/WPQR/QC/2506/26/08	
Identification of WPS followed 008/HEI/WPS/MIGAS/21		Test Description ☒ Test coupon ☐ Production weld		Date welded November 11, 2025	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 12 mm			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		E 7018-1H4R			
Filler metal or electrode classification(s) (info only)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process		t: 12 mm		t: 24 mm	
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		-		-	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G / Uphill		Groove: F.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)]		☐ Longitudinal bends [QW-462.3(b)]		☐ Side bends [QW-462.2]	
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]		☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]		☐ Plate specimen, macro test for fusion [QW-462.5(e)]	
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) -		Length and percent of defects -			
☐ Fillet welds in plate [QW-462.4(b)]		☐ Fillet welds in pipe [QW-462.4(c)]			
Macro examination (QW-184) -		Fillet size (in.) -		Concavity/convexity (in.) -	
Other tests -					
Film or specimens evaluated by Eko Sujadmono (RT Level II)		Company PT. TITIAN L.A (Report No. 004/TLA/RT-HEI/XI/2025)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Variesy Husein					
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.					
Organization PT. Hanazono Engineering Indonesia					
Prepared By: BENKIDHO		Date: March 02, 2016			
Inspected By: VARIESY		Date: March 02, 2016			
Approved By: Variesy Husein		Date: March 02, 2016			
					
					

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9. Attachment-9 Welder Performance Qualification Record Koswara/KW-2412

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you.</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name KOSWARA		Identification no. KW-2412		Certificate no. HEI/WPQR/QC/24121/25/09	
Identification of WPS followed 004/HEI/WPS/MIGAS/25		Test Description ☒ Test coupon ☐ Production weld		Date welded December 30, 2025	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 18 mm			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es) Type (i.e., manual, semi-automatic) used		SMAW Manual		SMAW Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 18 mm		t: 36 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 18mm		t: 36mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G		Groove: F, H, V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F, H, V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)]		☐ Longitudinal bends [QW-462.3(b)]		☐ Side bends [QW-462.2]	
☐ Pipe bend specimen, corrosion-resistance weld metal overlay [QW-462.5(c)]		☐ Plate bend specimen, corrosion-resistance weld metal overlay [QW-462.5(d)]		☐ Pipe specimen, macro test for fusion [QW-462.5(b)]	
☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) -		Length and percent of defects -			
☐ Fillet welds in plate [QW-462.4(b)]		☐ Fillet welds in pipe [QW-462.4(c)]			
Macro examination (QW-184) -		Fillet size (in.) -		Concavity/convexity (in.) -	
Other tests -					
Film or specimens evaluated by EKO SUDJATMONO (RT Level II)		Company PT. TITIAN LANCAR ABADI (Report No.004/TLA/RT-HEI/KW/2025)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Variesy Husein					
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.					
Organization PT. Hanazono Engineering Indonesia					
Prepared By 		Date : January 03, 2025			
Inspected By 		Date : January 03, 2025			
Approved By 		Date : January 03, 2025			
		 TIRTA PRAWITATEJA NIP. 19830916 201001 1 008			

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10. Attachment-10 Welder Performance Qualification Record Rahmatulloh/RM-2601

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name RAHMATULLAH		Identification no. RM-2601		Certificate no. HEI/WPQR/QC/2601/26/010	
Test Description Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded April 09, 2026 Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 and 18 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm/t: 36 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4,3,2,1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm/t: 18mm		t: 24 mm/t: 36mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove: F.H.V. : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (CFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends (QW-462.2) ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Firm or specimens evaluated by Sugeng (RT Level II)		Company PT. KOSTEC I.M. (Report No. KIM-RT-HEI-4-2026-001A022)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Vanesy Husein					
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.					
 Organization PT. Hanazono Engineering Indonesia		 Certified By YIRTA PRAWITAJA NIP. 19830916 201001 1 008			
Prepared By : Sugeng		Date : April 12, 2026			
Inspected By : Vanesy		Date : April 12, 2026			
Approved By : Bismandi		Date : April 12, 2026			

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11. Attachment-11 Welder Performance Qualification Record Hidayatulloh/RM-2602.

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name HIDAYATTULLOH		Identification no. RM-2602		Certificate no. HEI/WPQR/QC/2602/28/11	
Test Description Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded April 09, 2026 Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 and 18 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm/t:36 mm	
Base metal P-Number to P-Number		1 to 1		1~15F,34,41~49	
Filler metal or electrode specification(s) (SFA) (info only)		E 7018-1H4R			
Filler metal or electrode classification(s) (info only)		4		4,3,2,1 with backing	
Filler metal F-Number(s)		-		-	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process		t: 12 mm/t: 18mm		t: 24 mm/t:36mm	
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		-		-	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove: F.H.V : OD > 24" F: 2 7/8" < OD < 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends (QW-462.2) ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Filer or specimens evaluated by Sugeng (RT Level II)		Company PT. KOSTEC I.M. (Report No. KIM-RT-HEI-4-2026-003004)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Varlesy Husein					
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.					
Organization: PT. Hanazono Engineering Indonesia					
Prepared By : Bernardo		Date : April 12, 2026		Certified By 32	
Inspected By : Varlesy		Date : April 12, 2026			
Approved By : Ruslandi		Date : April 12, 2026		 NIRTA PRAWITATEJA NIP. 19630916 201001 1 008	

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12. Attachment-12 Welder Performance Qualification Record Arifan/AF-1307

PT. HANAZONO Engineering Indonesia We are always partner with you					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name ARIFAN		Identification no. AF-1307		Certificate no. HEI/WPQR/QC/1307/26/12	
Test Description					
Identification of WPS followed 004/HEI/WPS/MIGAS/26		☒ Test coupon ☐ Production weld		Date welded April 09, 2026	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 12 and 18 mm			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm/t: 18mm		t: 24 mm/t: 36mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Grove F.H.V : OD ≥ 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)]		☐ Longitudinal bends [QW-462.3(b)]		☐ Side bends [QW-462.2]	
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]					
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)]					
☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) -		Length and percent of defects -			
☐ Fillet welds in plate [QW-462.4(b)]		☐ Fillet welds in pipe [QW-462.4(c)]			
Macro examination (QW-184) -		Fillet size (in.) -		Concavity/convexity (in.) -	
Other tests -					
Film or specimens evaluated by Sugeng (RT Level II)		Company PT. KOSTEC I.M. (Report No. KIM-RT-HEI-4-2026-009/010)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Variesy Husein					
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.					
Organization PT. Hanazono Engineering Indonesia					
Prepared By : Bennidho		Date : April 12, 2026			
Inspected By : Variesy		Date : April 12, 2026			
Approved By : Rumandi		Date : April 12, 2026			
					
		HRTA PRAWITATEJA NIP. 19830916 201001 1 008			

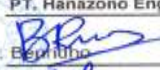
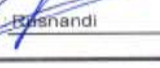
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13.Attachment-13 Welder Performance Qualification Record Sudarmono/SD-2606.

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SUDARMONO		Identification no. SD-2606		Certificate no. HEI/WPQR/QC/2606/26/13	
Test Description Identification of WPS followed <u>004/HEI/WPS/MIGAS/26</u> ☒ Test coupon ☐ Production weld Date welded <u>April 11, 2026</u> Specification and / grade or UNS Number of base metal(s) <u>SA-36</u> Thickness <u>12 and 18 mm</u>					
S					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm/t:36 mm	
Base metal P-Number to P-Number		1 to 1		1~15F,34,41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4,3,2,1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : <u>SMAW 3 layers minimum</u> ☒ yes ☐ No		t: 12 mm/t :18mm		t: 24 mm/t:36mm	
Process 2 : <u>- 3 layers minimum</u> ☐ yes ☐ No		-		-	
Position(s)		2G/4G		Grove:F,H,V,OH : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: ALL	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistance weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by <u>Sugeng (RT Level II)</u>		Company <u>PT. KOSTEC I.M. (Report No. KIM-RT-HEI-4-2026-013/014)</u>			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by <u>Variesy Husein</u>					
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.					
Organization <u>PT. Hanazono Engineering Indonesia</u>		Certified By			
Prepared By : <u>Baryleno</u>		Date : April 16, 2026			
Inspected By : <u>Variesy</u>		Date : April 16, 2026			
Approved By : <u>Rusnandi</u>		Date : April 16, 2026			
		 NIP. 19830916 201001 1 008			

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14. Attachment-14 Welder Performance Qualification Record Sudarmono/SD-260

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SUDARMONO		Identification no. SD-2606		Certificate no. HEI/WPQR/QC/2606/26/13A	
Identification of WPS followed HEI-WPS-AWS-FC-01		Test Description ☒ Test coupon ☐ Production weld		Date welded June 17, 2026	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 12 and 12 mm			
S					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		FCAW		FCAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm/t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		ER 71-T1			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm/t: 12mm		t: 24 mm/t: 24mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove: F, H, V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F, H, V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends (QW-462.2)					
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]					
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM. (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-002)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Andhika					
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.					
Organization PT. Hanazono Engineering Indonesia		Certified By			
Prepared By: 		Date : June 22, 2026			
Inspected By: 		Date : June 22, 2026			
Approved By: 		Date : June 22, 2026			
		 KIRTA PRAWITATEJA NIP. 19830916 201001 1 008			

	POBOYA 2000 TPD EXPANSION PROJECT	
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15 Attachment-15 Welder Performance Qualification Record Agus Priyanto/AP-2607

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>																																																																	
WELDER PERFORMANCE QUALIFICATIONS RECORD																																																																	
Welder's name AGUS PRIYANTO		Identification no. AP-2607		Certificate no. HEI/WPQR/QC/2607/26/14																																																													
Identification of WPS followed 004/HEI/WPS/MIGAS/26		Test Description ☒ Test coupon ☐ Production weld		Date welded April 11, 2026																																																													
Specification and / grade or UNS Number of base metal(s) S		SA-36		Thickness 12 and 18 mm																																																													
<table border="1"> <thead> <tr> <th>Welding Variables (QW-350)</th> <th>Actual Values</th> <th>Range Qualified</th> </tr> </thead> <tbody> <tr> <td>Welding process (es)</td> <td>SMAW</td> <td>SMAW</td> </tr> <tr> <td>Type (i.e.; manual, semi-automatic) used</td> <td>Manual</td> <td>Manual</td> </tr> <tr> <td>Backing (with/without)</td> <td>Without</td> <td>With/without</td> </tr> <tr> <td>☒ Plate ☐ Pipe (enter diameter if pipe or tube)</td> <td>t: 12 mm</td> <td>t: 24 mm/t:36 mm</td> </tr> <tr> <td>Base metal P-Number to P-Number</td> <td>1 to 1</td> <td>1~15F,34,41~49</td> </tr> <tr> <td>Filler metal or electrode specification(s) (SFA) (info only)</td> <td>5.1</td> <td></td> </tr> <tr> <td>Filler metal or electrode classification(s) (info only)</td> <td>E 7018-1H4R</td> <td></td> </tr> <tr> <td>Filler metal F-Number(s)</td> <td>4</td> <td>4,3,2,1 with backing</td> </tr> <tr> <td>Consumable insert (GTAW or PAW)</td> <td>-</td> <td>-</td> </tr> <tr> <td>Filler Metal Product Form (QW-404.23) (GTAW or PAW)</td> <td>-</td> <td>-</td> </tr> <tr> <td>Deposit thickness for each process</td> <td></td> <td></td> </tr> <tr> <td>Process 1 : <u>SMAW</u> 3 layers minimum ☒ yes ☐ No</td> <td>t: 12 mm/t :18mm</td> <td>t: 24 mm/t:36mm</td> </tr> <tr> <td>Process 2 : <u>-</u> 3 layers minimum ☐ yes ☐ No</td> <td>-</td> <td>-</td> </tr> <tr> <td>Position(s)</td> <td>3G/4G</td> <td>Grave: F,H,V,OH : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: ALL</td> </tr> <tr> <td>Vertical progression (uphill or downhill)</td> <td>-</td> <td>-</td> </tr> <tr> <td>Type of fuel gas (OFW)</td> <td>-</td> <td>-</td> </tr> <tr> <td>Use of backing gas (GTAW, PAW, GMAW)</td> <td>-</td> <td>-</td> </tr> <tr> <td>Transfer mode (spray, globular, or pulse to short circuit-GMAW)</td> <td>-</td> <td>-</td> </tr> <tr> <td>GTAW current type and polarity (AC, DCEP, DCEN)</td> <td>-</td> <td>-</td> </tr> </tbody> </table>						Welding Variables (QW-350)	Actual Values	Range Qualified	Welding process (es)	SMAW	SMAW	Type (i.e.; manual, semi-automatic) used	Manual	Manual	Backing (with/without)	Without	With/without	☒ Plate ☐ Pipe (enter diameter if pipe or tube)	t: 12 mm	t: 24 mm/t:36 mm	Base metal P-Number to P-Number	1 to 1	1~15F,34,41~49	Filler metal or electrode specification(s) (SFA) (info only)	5.1		Filler metal or electrode classification(s) (info only)	E 7018-1H4R		Filler metal F-Number(s)	4	4,3,2,1 with backing	Consumable insert (GTAW or PAW)	-	-	Filler Metal Product Form (QW-404.23) (GTAW or PAW)	-	-	Deposit thickness for each process			Process 1 : <u>SMAW</u> 3 layers minimum ☒ yes ☐ No	t: 12 mm/t :18mm	t: 24 mm/t:36mm	Process 2 : <u>-</u> 3 layers minimum ☐ yes ☐ No	-	-	Position(s)	3G/4G	Grave: F,H,V,OH : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: ALL	Vertical progression (uphill or downhill)	-	-	Type of fuel gas (OFW)	-	-	Use of backing gas (GTAW, PAW, GMAW)	-	-	Transfer mode (spray, globular, or pulse to short circuit-GMAW)	-	-	GTAW current type and polarity (AC, DCEP, DCEN)	-	-
Welding Variables (QW-350)	Actual Values	Range Qualified																																																															
Welding process (es)	SMAW	SMAW																																																															
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Filler Metal Product Form (QW-404.23) (GTAW or PAW)	-	-																																																															
Deposit thickness for each process																																																																	
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Position(s)	3G/4G	Grave: F,H,V,OH : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: ALL																																																															
Vertical progression (uphill or downhill)	-	-																																																															
Type of fuel gas (OFW)	-	-																																																															
Use of backing gas (GTAW, PAW, GMAW)	-	-																																																															
Transfer mode (spray, globular, or pulse to short circuit-GMAW)	-	-																																																															
GTAW current type and polarity (AC, DCEP, DCEN)	-	-																																																															
RESULTS Visual Examination of Completed Weld (QW-302.4) Satisfactory ☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistance weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)] <table border="1"> <thead> <tr> <th>Type</th> <th>Result</th> <th>Type</th> <th>Result</th> <th>Type</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>Blank</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one) Fillet weld - fracture test (QW-181.2) <u>-</u> Length and percent of defects <u>-</u> ☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) <u>-</u> Fillet size (in.) <u>-</u> x <u>-</u> Concavity/convexity (in.) <u>-</u> Other tests <u>-</u> Film or specimens evaluated by <u>Sugeng (RT Level II)</u> Company <u>PT. KOSTEC I.M (Report No. KIM-RT-HEI-4-2026-015/016)</u> Mechanical tests conducted by <u>-</u> Laboratory test no. <u>-</u> Welding supervised by <u>Variesy Husein</u> 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: Organization <u>PT. Hanazono Engineering Indonesia</u> Prepared By: <u>Berndie</u> Date : April 16, 2026 Inspected By: <u>Variesy</u> Date : April 16, 2026 Approved By: <u>Rusnandi</u> Date : April 16, 2026  MIRTA PRAWITATEJA NIP. 19830916 201001 1 008						Type	Result	Type	Result	Type	Result			Blank																																																			
Type	Result	Type	Result	Type	Result																																																												
		Blank																																																															

	POBOYA 2000 TPD EXPANSION PROJECT	
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17.Attachment-17 Welder Performance Qualification Record Jepriyan/JF-2606

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name <u>JEFRIYAN</u>		Identification no. <u>JF-2608</u>		Certificate no. <u>HEI/WPQR/QC/2608/26/15</u>	
Identification of WPS followed <u>004/HEI/WPS/MIGAS/26</u>		Test Description ☒ Test coupon ☐ Production weld		Date welded <u>April 10, 2026</u>	
Specification and / grade or UNS Number of base metal(s) <u>SA-36</u>		Thickness <u>12 and 18 mm</u>			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es) Type (i.e.: manual, semi-automatic) used		SMAW Manual		SMAW Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm/t: 36 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4,3,2,1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : <u>SMAW</u> 3 layers minimum ☒ yes ☐ No		t: 12 mm/t: 18mm		t: 24 mm/t: 36mm	
Process 2 : <u>-</u> 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove: F, H, V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F, H, V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) <u>Satisfactory</u>					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]					
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]					
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
			Blank		
Alternative Volumetric examination results (QW-191) <u>Accepted</u> RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]					
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Firm or specimens evaluated by <u>Sugeng (RT Level II)</u>		Company <u>PT. KOSTEC I.M. (Report No. KIM-RT-HEI-4-2026-017/018)</u>			
Mechanical tests conducted by <u>-</u>		Laboratory test no. <u>-</u>			
Welding supervised by <u>Variesy Husein</u>					
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.					
Organization <u>PT. Hanazono Engineering Indonesia</u>					
		Prepared By : <u>Beripriyanti</u> Date : <u>April 16, 2026</u>			
		Inspected By : <u>Variesy</u> Date : <u>April 16, 2026</u>			
		Approved By : <u>Rusdandi</u> Date : <u>April 16, 2026</u>			
 TIRTA PRAWITATEJA NIP. 19830916 201001 1 008					

	POBOYA 2000 TPD EXPANSION PROJECT	
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18.Attachment-18 Welder Performance Qualification Record Nirmanudin/NR-2610

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name NIRMANUDIN		Identification no. NR-2610		Certificate no. HEI/WPQR/QC/2610/26/16	
Test Description Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded April 11, 2026 Specification and / grade of UNS Number of base metal(s) SA-36 Thickness 18 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 18 mm		t: 36 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		-		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 18mm		t: 36mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G		Groove F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (QFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by Sugeng (RT Level II)				Company PT. KOSTEG I.M. (Report No. KIM-RT-HEI-4-2026-021)	
Mechanical tests conducted by -				Laboratory test no. -	
Welding supervised by Variesy Husein					
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.					
Organization PT. Hanazono Engineering Indonesia Prepared By:  Date: April 16, 2026 Inspected By:  Date: April 16, 2026 Approved By:  Date: April 16, 2026					
		 Certified By  NIRTA PRAWITATEJA NIP. 19830916 201001 1 008			

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19.Attachment-19 Welder Performance Qualification Record Syukur/SY-2611

PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name SYUKUR		Identification no. SY-2611		Certificate no. HEI/WPQR/QC/2611/26/17	
Identification of WPS followed 004/HEI/WPS/MIGAS/26		Test Description ☒ Test coupon ☐ Production weld		Date welded June 17, 2026	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 12 and 12 mm			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4,3,2,1 with backing	
Consumable insert (GTAW or PAW)		SMAW		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm/t :12mm		t: 24 mm/t:24mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Grove F.H.V : OD > 24" F. 2 7/8" ≤ OD ≤ 24" Fillet F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)]		☐ Longitudinal bends [QW-462.3(b)]		☐ Side bends (QW-462.2)	
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]					
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)]		☐ Plate specimen, macro test for fusion [QW-462.5(e)]			
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) -		Length and percent of defects -			
☐ Fillet welds in plate [QW-462.4(b)]		☐ Fillet welds in pipe [QW-462.4(c)]			
Macro examination (QW-184) -		Fillet size (in.) - x -		Concavity/convexity (in.) -	
Other tests -					
Firm or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-001)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Andhika					
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.					
Organization PT. Hanazono Engineering Indonesia		Certified By			
Prepared By: Benardo		Date : June 22, 2026			
Inspected By: Andhika		Date : June 22, 2026			
Approved By: Rusandi		Date : June 22, 2026			

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20.Attachment-20 Welder Performance Qualification Record M. Yusuf/SY-2612

PT. HANAZONO Engineering Indonesia We are always partner with you					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name M. YUSUF		Identification no. SY-2612		Certificate no. HEI/WPQR/QC/2612/26/18	
Test Description					
Identification of WPS followed 004/HEI/WPS/MIGAS/26		☒ Test coupon ☐ Production weld		Date welded June 17, 2026	
Specification and / grade or UNS Number of base metal(s) SA-36		Thickness 12 mm			
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		SMAW		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12mm		t: 24mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G		Groove: F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]					
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]					
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]					
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]					
Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Fam or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM. (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-001)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Andhika					
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.					
Organization PT. Hanazono Engineering Indonesia		Certified By			
Prepared By Bernando		Date : June 22, 2026			
Inspected By Andhika		Date : June 22, 2026			
Approved By Rumandi		Date : June 22, 2026			
					
					
					
					
					
					
					
					
					

	POBOYA 2000 TPD EXPANSION PROJECT	
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21.Attachment-21 Welder Performance Qualification Record Martin/MA-2613

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name MARTIN		Identification no. MA-2613		Certificate no. HEI/WPQR/QC/2613/26/19	
Test Description Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded June 17, 2026 Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 and 12 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e., manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		SMAW		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm/t: 12mm		t: 24 mm/t: 24mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove: F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2] ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM (Repon No. ACM-RT-WQT-HEI-CPM-VI-2025-002)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Andhika					
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.					
		Organization PT. Hanazono Engineering Indonesia Prepared By Benihana Date : June 22, 2026 Inspected By Andhika Date : June 22, 2026 Approved By Rupandi Date : June 22, 2026			
		 RTA DRAWITATEJA NIP. 19830916 201001 1 008			

	POBOYA 2000 TPD EXPANSION PROJECT	
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22. Attachment-22 Welder Performance Qualification Record Laode/LA-2614

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name LAODE		Identification no. LA-2614		Certificate no. HEI/WPQR/QC/2614/26/20	
Test Description Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded June 17, 2026 Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 mm					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1~15F, 34, 41~49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		SMAW		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process					
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		t: 12 mm		t: 24 mm	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		3G		Groove: F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OFW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends (QW-462.2) ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-001)			
Mechanical tests conducted by -		Laboratory test no. -			
Welding supervised by Andhika					
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.					
Organization PT. Hanazono Engineering Indonesia		Certified By			
Prepared By : Benidito		Date : June 22, 2026			
Inspected By : Andhika		Date : June 22, 2026			
Approved By : Ruhandi		Date : June 22, 2026			
		 TIKTA PRAWITATEJA NIP. 19830916 201001 1 008			

	POBOYA 2000 TPD EXPANSION PROJECT	
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23.Attachment-23 Welder Performance Qualification Record Fernando/FR-2615

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>					
WELDER PERFORMANCE QUALIFICATIONS RECORD					
Welder's name FERNANDO		Identification no. FR-2615		Certificate no. HEI/WPQR/QC/2615/26/21	
Test Description Identification of WPS followed <u>004/HEI/WPS/MIGAS/25</u> ☒ Test coupon ☐ Production weld Date welded <u>June 17, 2026</u> Specification and / grade or UNS Number of base metal(s) <u>SA-36</u> Thickness <u>12 and 12 mm</u>					
Testing Conditions and Qualification Limits					
Welding Variables (QW-350)		Actual Values		Range Qualified	
Welding process (es)		SMAW		SMAW	
Type (i.e.; manual, semi-automatic) used		Manual		Manual	
Backing (with/without)		Without		With/without	
☒ Plate ☐ Pipe (enter diameter if pipe or tube)		t: 12 mm		t: 24 mm	
Base metal P-Number to P-Number		1 to 1		1-15F, 34, 41-49	
Filler metal or electrode specification(s) (SFA) (info only)		5.1			
Filler metal or electrode classification(s) (info only)		E 7018-1H4R			
Filler metal F-Number(s)		4		4, 3, 2, 1 with backing	
Consumable insert (GTAW or PAW)		SMAW		-	
Filler Metal Product Form (QW-404.23) (GTAW or PAW)		-		-	
Deposit thickness for each process		t: 12 mm/t: 12mm		t: 24 mm/t: 24mm	
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No		-		-	
Process 2 : - 3 layers minimum ☐ yes ☐ No		-		-	
Position(s)		2G/3G		Groove F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet F.H.V	
Vertical progression (uphill or downhill)		-		-	
Type of fuel gas (OPW)		-		-	
Use of backing gas (GTAW, PAW, GMAW)		-		-	
Transfer mode (spray, globular, or pulse to short circuit-GMAW)		-		-	
GTAW current type and polarity (AC, DCEP, DCEN)		-		-	
RESULTS					
Visual Examination of Completed Weld (QW-302.4) Satisfactory					
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends (QW-462.2) ☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)] ☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)] ☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]					
Type	Result	Type	Result	Type	Result
		Blank			
Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)					
Fillet weld - fracture test (QW-181.2) - Length and percent of defects -					
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)] Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -					
Other tests -					
Film or specimens evaluated by SINARHAN (RT Level II)		Company PT. ACM (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-002)			
Mechanical tests conducted by Andhika		Laboratory test no. -			
Welding supervised by Andhika					
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.					
Organization PT. Hanazono Engineering Indonesia					
Prepared By: Bernardo		Date : June 22, 2026			
Inspected By: Andhika		Date : June 22, 2026			
Approved By: Bernardi		Date : June 22, 2026			
		 ERTAPRAWITATEJA NIP. 19830916 201001 1 008			

	POBOYA 2000 TPD EXPANSION PROJECT	
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24. Attachment-24 Welder Performance Qualification Record Alfin/AL-2616

 **PT. HANAZONO Engineering Indonesia**
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WELDER PERFORMANCE QUALIFICATIONS RECORD

Welder's name ALFIN Identification no. AL-2616 Certificate no. HEI/WPQR/QC/2616/26/26

Test Description
Identification of WPS followed 004/HEI/WPS/MIGAS/26 ☒ Test coupon ☐ Production weld Date welded June 17, 2026
Specification and / grade or UNS Number of base metal(s) SA-36 Thickness 12 mm

Testing Conditions and Qualification Limits

Welding Variables (QW-350)	Actual Values	Range Qualified
Welding process (es)	SMAW	SMAW
Type (i.e. manual, semi-automatic) used	Manual	Manual
Backing (with/without)	Without	With/without
☒ Plate ☐ Pipe (enter diameter if pipe or tube)	t: 12 mm	t: 24 mm
Base metal P-Number to P-Number	1 to 1	1-15F, 34, 41-49
Filler metal or electrode specification(s) (SFA) (info only)	5.1	
Filler metal or electrode classification(s) (info only)	E 7018-1H4R	
Filler metal F-Number(s)	4	4, 3, 2, 1 with backing
Consumable insert (GTAW or PAW)	SMAW	-
Filler Metal Product Form (QW-404.23) (GTAW or PAW)	-	-
Deposit thickness for each process		
Process 1 : SMAW 3 layers minimum ☒ yes ☐ No	t: 12mm	t: 24mm
Process 2 : - 3 layers minimum ☐ yes ☐ No	-	-
Position(s)	3G	Grove F.H.V : OD > 24" F: 2 7/8" ≤ OD ≤ 24" Fillet: F.H.V
Vertical progression (uphill or downhill)	-	-
Type of fuel gas (OFW)	-	-
Use of backing gas (GTAW, PAW, GMAW)	-	-
Transfer mode (spray, globular, or pulse to short circuit-GMAW)	-	-
GTAW current type and polarity (AC, DCEP, DCEN)	-	-

RESULTS

Visual Examination of Completed Weld (QW-302.4) Satisfactory
☐ Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bends [QW-462.2]
☐ Pipe bend specimen, corrosion-resistant weld metal overlay [QW-462.5(c)]
☐ Plate bend specimen, corrosion-resistant weld metal overlay [QW-462.5(d)]
☐ Pipe specimen, macro test for fusion [QW-462.5(b)] ☐ Plate specimen, macro test for fusion [QW-462.5(e)]

Type	Result	Type	Result	Type	Result
		Blank			

Alternative Volumetric examination results (QW-191) Accepted RT ☒ or UT ☐ (check one)
 Fillet weld - fracture test (QW-181.2) - Length and percent of defects -
☐ Fillet welds in plate [QW-462.4(b)] ☐ Fillet welds in pipe [QW-462.4(c)]
 Macro examination (QW-184) - Fillet size (in.) - x - Concavity/convexity (in.) -
 Other tests -

Firm or specimens evaluated by SINARHAN (RT Level II) Company PT. ACM (Report No. ACM-RT-WQT-HEI-CPM-VI-2026-001)
 Mechanical tests conducted by - Laboratory test no. -
 Welding supervised by Andhika

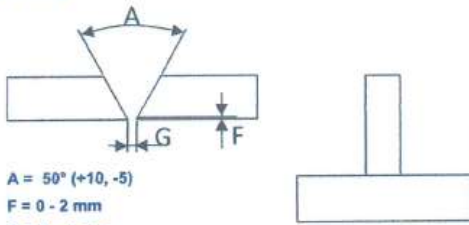
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME BOILER AND PRESSURE VESSEL CODE.

Organization PT. Hanazono Engineering Indonesia Certified By TIRTA PRAWITATEJA
 Prepared By Bengilio Date : June 22, 2026
 Inspected By Andhika Date : June 22, 2026
 Approved By Buendandi Date : June 22, 2026 **NIP. 19830916 201001 1 008**



COMO ENGINEERS	POBOYA 2000 TPD EXPANSION PROJECT	 PT Citra Paha Minerals
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4.1 WPS And PQR Reference

 PT. HANAZONO Engineering Indonesia <i>We are always partner with you</i>		Welding Procedure Specification (Section IX, ASME Boiler and Pressure Vessel Code, Edition 2025)	
WPS NO. :	04-WPS-HEI-MIGAS-26	Rev. :	0
Supporting PQR No.(s) :	04-PQR-HEI-MIGAS-26	Date :	February 27, 2026
Welding Process(es) :	SMAW	Type(s) :	MANUAL
Applicable Code :	ASME BPVC IX 2025		
JOINTS (QW-402) Joint Design : See Joint Detail Root Spacing : See Joint Detail Backing : ☒ Yes ☐ No Backing Material : Weldmetal Other : N/A		Joint Detail  A = 50° (+10, -5) F = 0 - 2 mm G = 0 - 4 mm	
BASE METAL (QW-403) P. No. : 1 Group No. : 1&2 to P. No. : 1 Group No. : 1&2 Specification Type & Grade : A 36 or Equivalent to A36 or Equivalent Thickness Range : 5 mm - 40 mm Groove : Unlimited Maximum Pass Thickness ≤ 1/2 in. (13mm) : ☒ Yes ☐ No Other : N/A			
FILLER METALS (QW-404) Process : SMAW Spec No. (SFA) : 5.1 AWS. No. (Class) : E7018 F. No. : 4 A. No. : 1 Size of Filler Metals : See Below Table Weld Metal Thickness Range : Groove : Max. 40 mm Fillet : Unlimited Manufacturer : Bohler or Equivalent Brand : Other : N/A			
Approvals	Prepared By	Checked By	Approved By: MIGAS
Name	ANDI ISKANDAR	RUSNANDI	
Signature			 Nomor Registrasi Migas : AIG-B-569/0231/2026
Date	February 27, 2026	February 27, 2026	

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Welding Procedure Specification (Section IX, ASME Boiler and Pressure Vessel Code, Edition 2025)

POSITION (QW-405)

Position of Groove : ALL
Welding Progression : ☒ Up ☐ Down
Position of Fillet : All
Other : N/A

POST WELD HEAT TREATMENT (QW-407)

Temperature Range : N/A
Time Range : N/A
Other : N/A

PREHEAT (QW-406)

Preheat
Preheat Temp. Min. : 10 °C
Interpass Temp. Max : 250 °C
Preheat Maintenance : N/A
Other : N/A

GAS (QW-408)

	Gas(es)	(Mixture)	Flowrate
Shielding	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Trailing	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Backing	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

ELECTRICAL CHARACTERISTICS (QW-409)

Process : SMAW
Current & Polarity : See Below Table
Amps (Range) : See Below Table
Volts (Range) : See Below Table
Tungsten Electrode Size and Type : N/A
Electrode Wire Feed Speed Range : N/A
Other : N/A

TECHNIQUE (QW-410)

String or Weave Bead : Both
Orifice, Nozzle, or Gas Cup Size : N/A
Initial & Interpass Cleaning : Wire Brush & Grinding
Method of Back Gouging : Air Arc Gouging or Grinding if required
Oscillation : N/A
Contact Tube to Work Distance : N/A
Multiple or single Pass : ☒ MULTI ☐ SINGLE
Multiple or single Electrodes : ☐ MULTI ☒ SINGLE
Peening : N/A
Other : N/A

Weld Pass(es)	Process	Filler Metal		Current Type and Polarity	Amps (Range)	Wire Feed Speed (Range)	Volts (Range)	Travel Speed (Range) cm/min	Remarks
		Classification	Dia. (mm)						
As Req'd	SMAW	E7018	2,5, 3,2, 4,0	DCEP	80-150	N/A	20 - 30	3 - 8	

Remarks :

Approvals	Prepared By	Checked By	Approved By
Name	Andi Iskandar	Rusnandi	
Signature			
Date	February 27, 2026	February 27, 2026	

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Head Office : Jl. Raya Bojonegara-Serdang No. 44 RT. 001/RW.001
Desa Kertasana, Kecamatan Bojonegara, Kabupaten Serang
Banten, Indonesia (42414)
Telp : +62-254-7850344/45/46/47
e-mail : project@hanazono.co.id

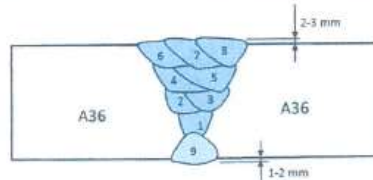
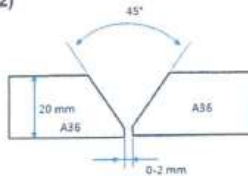
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PROCEDURE QUALIFICATION RECORDS (PQR)

(See QW-200.1 Section IX, ASME Boiler and Pressure Vessel Code, Edition 2025)

Company Name PT. HANAZONO ENGINEERING INDONESIA Sub Contractor Name _____
Procedure Qualification Record No. 04-PQR-HEI-MIGAS-26 Date February 27, 2026
WPS No. 04-WPS-HEI-MIGAS-26 Date February 27, 2026
Welding Process (es) SMAW
Types (Manual, Automatic, Semi-Auto) Manual

JOINTS (QW-402)



(For combination qualifications, the deposited weld metal thickness shall be recorded for each filler metal and process used)

BASE METALS (QW-403)

Material Spec. A 36
Type/Grade, or UNS Number -
P. No. 1 Group No. 1 to P-No. 1 Group No. 1
Thickness of Test Coupon 20 mm
Diameter of Test Coupon None
Maximum Pass Thickness 2 mm
Other _____

POSTWELD HEAT TREATMENT (QW-407)

Temperature NA
Time NA
Other NA

FILLER METALS (QW-404)

SMAW
SFA Specification 5.1
AWS Classification E7018
Filler Metal F- No. 4
Weld Metal Analysis A-No. 1
Size of Filler Metal See Table
Filler Metal Product Form N/A
Supplemental Filler Metal NA
Electrode Flux Classification NA
Flux Type NA
Flux Trade Name NA
Weld Metal Thickness 20 mm
Other _____

GAS (QW-408)

	Percent Composition		
	Gas (es)	(Mixture)	Flow Rate
Shielding	<u>NA</u>		
Trailing	<u>NA</u>		
Backing	<u>NA</u>		
Other	<u>NA</u>		

ELECTRICAL CHARACTERISTICS (QW-409)

Current DC
Polarity EP
Amps. See table Volts See Table
Tungsten Electrode Size N/A
Mode of Metal Transfer for GMAW (FCAW) NA
Heat Input NA
Other NA

POSITION (QW-405)

Position of Groove 3G
Weld Progression (Uphill, Downhill) Uphill
Other NA

TECHNIQUE (QW-410)

Travel Speed See Table
String or Weave Bead Weave
Oscillation NA
Multipass or Single Pass (per side) Multiple
Single or Multiple Electrodes Single
Other NA

PREHEAT (QW-406)

Preheat Temp. 33 °C
Interpass Temp. 202 °C
Other NA

Nomor Registrasi Migas

AIG - B - 569 / 02.51 / 2016

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Welding Parameter

Weld Layers	Process	Filler Metal		Current		Voltage (V)	Travel Speed (mm/min)	Heat input (KJ/mm)
		Class	Dia. (mm)	Polarity	Ampere (A)			
1	SMAW	E7018	3.2	DCEP	100	20	37,36	3,21
2	SMAW	E7018	3.2	DCEP	120	22	52,36	3,03
2	SMAW	E7018	3.2	DCEP	120	22	43,60	3,63
2	SMAW	E7018	3.2	DCEP	124	25	55,05	3,38
2	SMAW	E7018	3.2	DCEP	124	25	64,10	2,90
3	SMAW	E7018	3.2	DCEP	122	24	58,82	2,99
4	SMAW	E7018	3.2	DCEP	122	24	68,97	2,55
5	SMAW	E7018	3.2	DCEP	122	24	65,22	2,69
6	SMAW	E7018	3.2	DCEP	120	24	69,44	2,49

Tensile Test (QW-150)

Specimen No.	Width (mm)	Thickness (mm)	Area (mm ²)	Ultimate Total Load (kN)	Ultimate Unit Stress (N/mm ²)	Type of Failure and Location
T1	19,49	19,54	380,83	193,77	509	Ductile (Base Metal)
T2	19,45	19,56	380,46	192,54	506	Ductile (Base Metal)

Guided - Bend Test (QW-160)

Type and Figure No.	Result
Side Bend (SB1)	No Open Discontinuity was observed
Side Bend (SB2)	No Open Discontinuity was observed
Side Bend (SB3)	No Open Discontinuity was observed
Side Bend (SB4)	No Open Discontinuity was observed

Toughness Tests (QW-170)

Specimen No.	Notch Location	Specimen Size	Test Temperature	Impact Values			Drop Weight Break (Y/N)
				ft-lb or J	% Shear	Mils (in.) or mm	

Comments : NA

Fillet - Weld Test (QW-180)

Result - Satisfactory : Yes NA No. NA Penetration into parent metal : Yes NA No. NA

Macro - Result NA

Other Tests

Type of test NA

Deposit Analysis NA

Radiographic Result Accepted Report No. 01/RT/RPD/II/26

Other NA

Welder's Name : SAHRUL

Clock No. -

Stamp No. SR-0904

Test conducted by : PT. Hi-Test

Laboratory Test No. HT/JKT/0226/0245

Date February 23, 2026

We 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 Section IX of the ASME Boiler and Pressure Vessel Code.

Prepared By,

Reviewed By,

Approved By,
MIGAS


Andi Iskandar
Date : February 27, 2026

Date : February 27, 2026

Nomor Registrasi Migas

AYG - B. 569/0231/2026

Date :

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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Office & Work Shop Address: Jl. Raya Bojonegara - Gedung RTIRVV 001/001 No.44
Desa Kertasana, Kec. Bojonegara, Kab. Serang, Banten - Indonesia 42464
Phone : +62-254-7850344/5/6, Fax : +62-254-785037

WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with
Section IX, ASME Boiler and Pressure Vessel Code

Organization Name PT. HANAZONO ENGINEERING INDONESIA By Quality Department
Welding Procedure Specification No. 006/HEI/MIGAS/20 Date 01/10/2020 Supporting PQR No. (s) 006/HEI/MIGAS/20
Revision No. 0 Date 01/10/2020

Welding Process (es) GTAW & SMAW Type (s) Manual
(Automatic, Manual, Machine or Semi-Auto)

JOINT (QW - 402)

Details

Joint Design Single Vee or Any
Root Spacing 0 ~ 3 mm
Backing With / Without
Backing Material (Type) As per (GTAW) / Base for Joint Metal (GTAW & SMAW)

See Joint Details

Sketches, production Drawings, Weld Symbols or Written Description
Should show the general arrangement of the parts to be welded. Where
applicable, the root spacing and the details of weld groove may be
specified.

Sketches may be attached to illustrate joint design, weld layers, and
bead sequence (e.g. for toughness procedures, for multiple process
procedures, etc.)

*BASE METALS (QW - 403)

P. No. 1 Group No. 1 to P. No. 1 Group No. -
OR
Specification type, grade, or UNS -
to Specification type, grade, or UNS -
OR
Chem. Analysis and Mech. Prop -
to Chem. Analysis and Mech. Prop -
Thickness Range:
Base Metal : Groove 1.5 ~ 19.29 mm Fillet All
Maximum Pass Thickness $\leq \frac{1}{8}$ in. (13mm) (Yes) All (No) -
Other -

*FILLER METALS (QW - 404)

	1 GTAW	2 SMAW
Spec. No. (SFA)	5.18	5.1
AWS No. (Class)	ER70S-6	E7018
F - No.	6	4
A - No.	1	1
Size of Filler Metals	ϕ 1.6 mm ~ 2.4 mm	ϕ 3.2 ~ 4.0 mm
Weld Metal		
Deposit Thickness:		
Groove	Max. 6 mm	Max. 13.29 mm
Fillet	All	All
Electrode Flux (Class)	N/A	N/A
Flux Type	N/A	Low Hydrogen
Flux Trade Name	N/A	N/A
Consumable Insert	N/A	N/A
Other	Manufacturer : ESAB Electrode Name : OK Tigrod 12.64 & OK 48.04	

*Each base metal-filler metal combination should be specified individually.

Handwritten signature: AYU - 07081 / 0844 / 2020
Stamp: Nomor Registrasi 1 OF 6

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

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E2502

Purchase Order No. : 11580

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PT. HANAZONO Engineering Indonesia

Office & Work Shop Address: Jl. Raya Boyonegara - Serang RT/RW. 001/001 No.44
Desa Mertasana, Kec. Boyonegara, Kab. Serang, Banten - Indonesia 42454
Phone : +62-254-7850344/5/6, Fax : +62-254-785037

WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with
Section IX, ASME Boiler and Pressure Vessel Code

Welding Procedure Specification No. : 006/HEI/MIGAS/20

Rev. 0

POSITIONS (QW - 405)

Position(s) of Groove All
Welding Progression All
Position(s) of Fillet All

POSTWELD HEAT TREATMENT (QW - 407)

Temperature Range N / A
Time Range N / A

PREHEAT (QW - 406)

Preheat Temp. Min. 34 °C
Interpass Temp. Max. 260 °C
Preheat Maintenance N/A *)
Other _____
(Continuous or special heating, where applicable, should be specified)

GAS (QW - 408)

	Percent Composition	
	Gas (es)	Mixture
Shielding	Argon	99.99%
Trailing	-	-
Backing	-	-
Other	-	-

ELECTRICAL CHARACTERISTIC (QW - 409)

Weld Pass(es)	Process	Filler Metal		Current Type & Polarity	Amps (Range)	Wire Feed Speed (Range)	Energy or Power (Range)	Volts (Range)	Travel Speed (Range)	Other (e.g. Remarks, Comments, Not Weld, Spatter, Spillage, etc.)
		Class	Dia.							
Root & Hot	GTAW	ER70S-6	1.6 - 2.4	DCEN	80 - 160	-	-	9 - 18	18 - 72	-
Fill & Capping	SMAW	E7018	3/2 / 4.0	DCEP	80 - 190	-	-	19 - 24	38 - 112	-

Amps and volts, or power or energy range, should be specified for each electrode size, position, and thickness, etc.

Pulsing Current N/A Heat Input (max.) 2.5J
Tungsten Electrode Size and Type 1.6 ~ 2.4mm & 2% Thoriated (EWTh-2)
(Pure Tungsten, 2% Thoriated, etc.)

Mode of Metal Transfer for GMAW (FCAW) N/A
(Spray Arc, Shield-Covering Arc, etc.)

Other N/A

TECHNIQUE (QW - 410)

String or Weave Bead Max. stringer or weaver within 2.5 time diameter of electrodes
Orifice, Nozzle, or Gas Cup Size 5, 6, or 7
Initial and Interpass Cleaning (Brushing, Grinding, etc.) Brushing & Grinding
Method of Back Gouging Back Grinding / Back Gouging
Oscillation N/A
Contact Tube to Work Distance 12 ~ 19 mm (GTAW)
Multiple or Single Pass (Per Side) Multiple
Multiple or Single electrode Single
Electrode Spacing N/A
Peening N/A
Other Welds shall be cleaned between each pass. When completed, remove all slag & projection with grinding & Brushing

Nomor Registrasi Migas

AYG - 07901 / 0044 / 2020

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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Office & Work Shop Address: Jl. Raya Bojonegara - Serang RT/RW 001/001 No 44
Desa Kartasana, Kec. Bojonegara, Kab. Serang, Banten - Indonesia 42454
Phone : +62-254-7850344/5/6 Fax : +62-254-785037

WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with
Section IX, ASME Boiler and Pressure Vessel Code

Welding Procedure Specification No. : 005/HEI/MIGAS/20

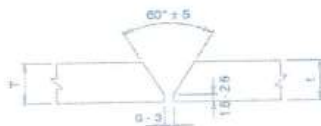
Rev. 0

JOINT DETAILS

SINGLE VEE GROOVE

$T = t$

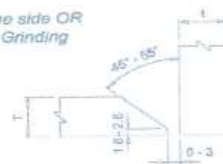
Welded from one side



SINGLE BEVEL - CORNER JOINT

$T = t$

Welded from one side OR
both side Back Grinding



SQUARE BUTT

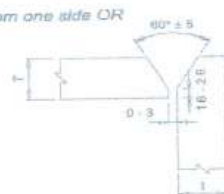
Welded from BOTH SIDES, $T = 6$ mm Max
Root gap, $0 - t/2$



SINGLE VEE GROOVE

$T = t$

Welded from one side OR
both side



SINGLE OR DOUBLE FILLET

UNLIMITED



For Non-Impact tested applications only, the following AWS/SFA classification can be used with this procedure :
GTAW : ER70S-6 / 5.18 & SMAW : E7018 / 5.1

Weld Joint description shown are not inclusive of all of those found on job site. Weld joint design references in an engineering specification or design shall take precedence over weld joint shown in this WPS.

Organization Prepared by
PT. HANAZONO ENG. INDONESIA

Verified by
MINISTRY OF ENERGY AND MINERAL RESOURCES
DIRJEN MIGAS

Nomor Registrasi Migas

AYG - 07981 / 0844 / 2020

Date : October 1, 2020

Date : October 1, 2020

3 OF 6

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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Office & Work Shop Address: Jl. Raya Bojonegara - Serdang RT/RW. 001/001 No.44
Desa Kartasana, Kec. Bojonegara, Kab. Serang, Banten - Indonesia 42454
Phone : +62 254 7850344/5/6, Fax : +62 254 785037

PROCEDURE QUALIFICATION RECORD (PQR)

Record Actual Conditions Used to Weld Test Coupon

Organization Name **PT. HANAZONO ENGINEERING INDONESIA**

Procedure Qualification Record No. 006/HEI/MIGAS/20 Date 29/09/2020

WPS No. 006/HEI/MIGAS/20

Welding Process (es) GTAW & SMAW

Types (Manual, Automatic, Semi-Automatic) Manual

JOINTS (QW - 402)



Groove Design of Test Coupon

(For combination qualifications, the deposited weld metal thickness shall be recorded for each filler metal and process used.)

BASE METAL (QW - 403)

Material Spec. A36 to A36
Type or Grade, or UNS Number A36 to A36
P-No. 1 Group No. 1 to P-No. 1 Group No. 1
Thickness of Test Coupon 9.645 mm
Diameter of Test Coupon N/A
Maximum Pass Thickness ≤ 1/4 in. (13mm)
Other

POSTWELD HEAT TREATMENT (QW - 407)

Temperature Range N/A
Time N/A
Others N/A

GAS (QW - 408)

	Percent Composition		
	Gas (es)	Mixture	Flow Rate
Shielding	Argon	99.99%	12 LPM
Trailing	-	-	-
Backing	-	-	-

FILLER METAL (QW - 404)

SFA Specification	5.18	5.1
AWS Specification	ER70S-6	E7018
Filler Metal F-No.	6	4
Weld Metal Analysis A-No.	1	1
Size of Filler Metal	Ø2.4 mm	Ø3.2 mm
Filler Metal Product Form	Solid Bare	Flux Coated
Supplemental Filler Metal	N/A	N/A
Electrode Flux Classification	N/A	N/A
Flux Type	N/A	Low Hydrogen
Flux Trade Name	N/A	N/A
Weld Metal Thickness	3 mm	6.645 mm
Other	OK Tigrod 12.64	OK 48.04

ELECTRICAL CHARACTERISTIC (QW - 409)

Current DCEN (GTAW) & DCEP (SMAW)
Polarity See Table Welding Parameter
Amps See Table Welding Parameter
Waveform Control N/A
Power or Energy See Table Welding Parameter
Arc Time 5 - 10 Minutes / Pass
Weld Bead Length 4 mm (GTAW) & 5 mm (SMAW)
Tungsten Electrode Size 2.4mm & 2% Thoriated (EWTh-2)
Mode of Metal Transfer for GMAW (FCAW) N/A
Heat Input See Table Welding Parameter
Other N/A

POSITION (QW - 405)

Position(s) of Groove 1G
Weld Progression (Uphill, Downhill) N/A
Other N/A

PREHEAT (QW - 406)

Preheat Temperature 34°C
Interpass Temperature 280°C
Other N/A

TECHNIQUE (QW - 410)

Travel Speed See Table Welding Parameter
String or Weave Bead String & Weave Bead
Oscillation N/A
Multipass or Single Pass (Per Side) Single & Multipass
Single or Multiple Electrodes Single
Other N/A

Monor Registrasi No. 4 OF 6

Ara - 07081 / 0804 / 2020

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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PROCEDURE QUALIFICATION RECORD (PQR)

Record Actual Conditions Used to Weld Test Coupon

Procedure Qualification Record No. : 006/HEI/MIGAS/20

Rev. 0

WELDING PARAMETER

Weld No.	Welding Process	Filer Metal		Type Polarity	Ampere	Volt	Travel Speed Range (mm/min)	Heat Input (J/mm)
		Class	Dia					
1	GTAW	ER70S-6	2.4 mm	DCEN	110	9	35	1.7
2					110	10	30	2.2
3					92	20	47	2.3
4	SMAW	E7018	3.2 mm	DCEP	87	20	53	2.0
5					95	20	52	2.2
6					85	19	50	1.9
7					85	19	55	1.8

TENSILE TEST (QW - 160)

Specimen No.	Width (mm)	Thickness (mm)	Area (mm ²)	Ultimate Total Load (kN)	Ultimate Unit Stress (N/mm ²)	Type Failure & Location
T1	19.51	9.63	187.88	108.22	576	Fracture on base metal
T2	19.57	9.66	189.05	109.84	581	Fracture on base metal

GUIDE BEND TESTS (QW - 160)

Type and Figure No.	Result
SB1 - QW 462.2	No Open Discontinuity
SB2 - QW 462.2	No Open Discontinuity
SB3 - QW 462.2	No Open Discontinuity
SB4 - QW 462.2	No Open Discontinuity

TOUGHNESS TESTS (QW - 170)

Specimen No.	Notch Location	Specimen Size	Test Temp. (°C)	Toughness Values		Drop Weight Break (Y/N)
				% Shear	Mils (in) or mm	
--Blank--						

Comments

Nomor Registrasi Migas

AYG - 070801 10044 / 2020

PROCEDURE QUALIFICATION RECORD (PQR)

Record Actual Conditions Used to Weld Test Coupon

Procedure Qualification Record No. : 006/HEI/MIGAS/20

Rev. 0

FILLET-WELD TEST (QW - 180)

Result - Satisfactory : Yes ☒ No ☐ Penetration into Parent Metal : Yes ☐ No ☒

Macro - Result None

HARDNESS TESTS

[illegible]

Other Tests

Type of Test	None
--------------	------

Deposit Analysis	None
------------------	------

Other Radiography examination, Result ACC, Report No. 001/RT/HE/IX/20 by PT. Rire Sanjaya Sekti

Welder's Name	ASMURI	Clock No.	-	Stamp No.	W - 01
---------------	--------	-----------	---	-----------	--------

Tests conducted by : PT. HI-TEST Laboratory Test No. : HT/JKT/0920/0332

We 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 Section IX of the ASME Boiler and Pressure Vessel Code.

Organization Prepared by,
PT. HANAZONO ENG. INDONESIA

Verified by

MINISTRY OF ENERGY AND MINERAL RESOURCES

DIRJEN MIGAS

Nomor Registrasi Migas

AYG - ୦୮୦୦୧ / ୦୦୪୫ / ୨୦୨୦

Date: September 29, 2020

Date : September 29, 2020

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with
ASME Section IX:2021 Boiler and Pressure Vessel Code

Page No : 1 of 3

Organization Name PT. HANAZONO ENGINEERING INDONESIA By Quality Departement
Welding Procedure Specification No. 008/HEI/WPS/MIGAS/21 Date 23/08/2021 Supporting PQR No.(s) 008/HEI/WPS/MIGAS/21
Revision No. 0 Date 19/08/2021

Welding Process (es) SMAW Type (s) Manual
(Automatic, Manual, Machine or Semi-Auto)

JOINT (QW - 402)

Details

Joint Design See joint Detail
Root Spacing See joint Detail
Backing With / Without
Backing Material (Type) as per joint details

See Joint Details

sketches, production Drawings, Weld Symbols or Written Description
Should show the general arrangement of the parts to be welded. Where
applicable, the root spacing and the details of weld groove maybe
specified

Sketches may be attached to illustrate joint design, weld layers, and
bead sequence (e.g., for toughness procedures, for multiple process
procedures, etc.)

*BASE METALS (QW - 403)

P. No. 1 Group No. 1 to P. No. 1 Group No. 1
OR

Specification type, grade, or UNS SA 516
to Specification type, grade, or UNS Gr.70
OR

Chem. Analysis and Mech. Prop -
to Chem. Analysis and Mech. Prop -
Thickness Range :

Base Metal : Groove 5 mm ~ 50 mm Fillet All
Maximum Pass Thickness $\leq \frac{1}{8}$ in. (13mm) (Yes) ☒ (No) -
Other -

*FILLER METALS (QW - 404)

1
SMAW
Spec. No. (SFA) A 5.1
AWS No. (Class) E 7018-1
F - No. 4
A - No. 1
Size of Filler Metals Φ 3.2 ~ 4.0 mm
Weld Metal
Deposit Thickness
Groove Max 50mm
Fillet All
Electrode Flux (Class) N/A
Flux Type Low Hydrogen
Flux Trade Name N/A
Consumable Insert N/A
Other Manufacturer : BOHLER
Electrode Name : Bohler S EMK 6 & Fox S EV 50-1

*Each base metal-filler metal combination should be specified individually.

AYG-07901/0055/2021

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

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WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with

ASME Section IX:2021 Boiler and Pressure Vessel Code

Page No : 2 of 3

Welding Procedure Specification No. : 008/HEI/WPS/MIGAS/21

REV. 0

POSITIONS (QW - 405)

Position(s) of Groove	All
Welding Progression	Uphill
Position(s) of Fillet	All

POSTWELD HEAT TREATMENT (QW - 407)

Temperature Range	N/A
Time Range	N/A
t = up to 2" - 1 Hour / inch, 15 minute minimum	
t = over 2" to 5" - 2 Hour + 15 minute for each additional inch, over 2"	

PREHEAT (QW - 406)

Preheat Temp. Min	55 °C
Interpass Temp. Max.	230 °C
Preheat Maintenance	55 °C of minimum
Temperature shall be applied for thickness 1 1/4" and over	
(Continuous or special heating, where applicable, should specified)	

GAS (QW - 408)

	Percent Composition		
	Gas (es)	Mixture	Flow Rate
Shielding	None	None	None
Trailing	None	None	None
Backing	None	None	None
Other	None	None	None

ELECTRICAL CHARACTERISTIC (QW - 409)

Weld Pass(es)	Process	Filler Metal		Current Type & Polarity	Amps (Range)	Wire Feed Speed (Range)	Energy or Power (Range)	Volts (Range)	Travel Speed (Range)	Other (e.g., Remarks, Hot Wire Addition, Technique, Process Torch Angle, etc.)
		Class	Dia							
Root	SMAW	E 7018-1H4R	3.2, 4.0	DCEP	85 ~ 100	-	-	23 ~ 25	60 ~ 75	-
Fill	SMAW	E 7018-1H4R	3.2 / 4.0	DCEP	100 ~ 115	-	-	24 ~ 26	65 ~ 87	
Cap	SMAW	E 7018-1H4R	3.2 / 4.0	DCEP	110 ~ 125	-	-	24 ~ 27	70 ~ 90	

Amps and Volts, or power or energy range, should be specified for each electrode size, position, and thickness, etc.

Pulsing current N/A Heat Input (max.) 2.9 KJ

Tungsten Electrode Size and Type N/A
(Pure Tungsten, 2% Thoriated, etc.)

Mode of Metal transfer for GMAW (FCAW) N/A
(Spray Arc, Short-Circuiting Arc, etc.)

Other N/A

TECHNIQUE (QW - 410)

String or Weave Bead	String and or weave
Orifice, Nozzle, or Gas Cup Size	N/A
Initial and Interpass Cleaning (Brushing, Grinding, etc.)	Brushing and Grinding
Method of Back Gouging	Back Grinding / Back Gouging
Oscillation	N/A
Contact Tube to Work Distance	N/A
Multiple or Single Pass (Per Side)	Single or Multi
Multiple or Single electrode	Single
Electrode Spacing	N/A
Peening	N/A
Other	Welds shall be cleaned between each pass. When completed, remove all slag & projection with grinding and brushing

AYG 03981 (0815/2021)

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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WELDING PROCEDURE SPECIFICATION (WPS)

In accordance with
ASME Section IX:2021 Boiler and Pressure Vessel Code

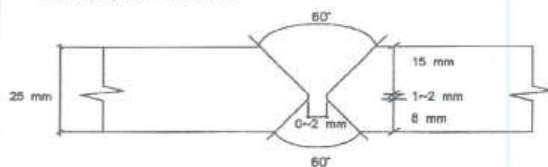
Page No : 3 of 3

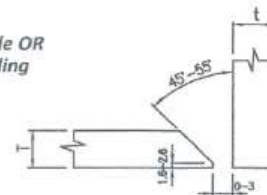
Welding Procedure Specification No. : 008/HEI/WPS/MIGAS/21

REV. 0

JOINT DETAILS
DOUBLE VEE GROOVE
 $T = t$

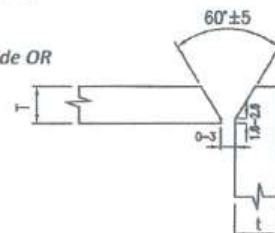
Welded from two side


SINGLE BEVEL-CORNER JOINT
 $T = t$

Welded from one side OR
both side Back Grinding

SQUARE BUTT

Welded from BOTH SIDES, $T = 6 \text{ mm}$ Max
Root gap. $0 - t/2$

SINGLE VEE GROOVE
 $T = t$

Welded from one side OR
both side

FILLET

UNLIMITED


For Non-Impact tested applications only, the following AWS/SFA classification can be used with this procedure :
SMAW : E7018-1H4R / 5.1

Weld Joint description shown are not inclusive of all of those found on job site. Weld joint design reference in an engineering specification or design shall take precedence over weld joint shown in this WPS.

Prepared By,

Reviewed By,

Reviewed By,

Verified by,

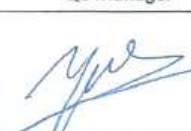
PT Hanazono Engineering Indonesia

MIGAS

QC

WE

QC Manager

Bayu Satrio Utomo

Andri Iskandar

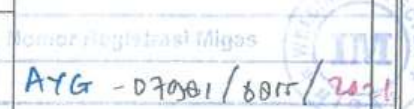
Rusnandi

Date : Nov 03, 2021

Date : Nov 03, 2021

Date : Nov 03, 2021

Date :



(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

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(Vendor Work No.)
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PROCEDURE QUALIFICATION RECORD (PQR)

Record Actual Conditions Used to Weld test Coupon

Page No : 1 of 3

Organization Name **PT. HANAZONO ENGINEERING INDONESIA**

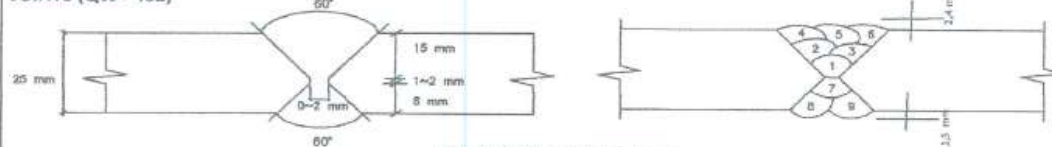
Procedure Qualification Record No. **008/HEI/PQR/MIGAS/21** Date **October 11, 2021**

WPS No. **008/HEI/WPS/MIGAS/21**

Welding Process (es) **SMAW**

Types (Manual, Automatic, Semi-Automatic) **Manual**

JOINTS (QW - 402)



Groove Design of Test Coupon

(For combination qualifications, the deposited weld metal thickness shall be recorder for each filler metal and process used.)

BASE METAL (QW - 403)

Material Spec. **SA 516**

Type or Grade, or UNS Number **Grade 70N**

P-No.1 - Group No. 1 to P-No.1 - Group No. 1

Thickness of Test Coupon **25mm**

Diameter of test Coupon **N/A**

Maximum Pass Thickness **≤ 1/2 in. (13mm)**

Other **N/A**

POST WELD HEAT TREATMENT (QW - 407)

Temperature Range **N/A**

Time **N/A**

t = up to 2" - 1 Hour / inch, 15 minute minimum

t = over 2" to 5" - 2 Hour + 15 minute for each additional inch, over 2"

GAS (QW - 408)

	Percent Composition		
	Gas (es)	Mixture	Flow Rate
Shielding	None	None	None
Trailing	None	None	None
Backing	None	None	None

FILLER METAL (QW - 404)

SFA Specification **A 5.1**

SWA Specification **E 7018-1H4R**

Filler Metal F-No. **4**

Weld Metal Analysis A-No. **1**

Size of Filler Metal **Φ 3.2mm & Φ 4.0mm**

Filler Metal Product Form **N/A**

Supplemental Filler Metal **N/A**

Electrode Flux Classification **N/A**

Flux Type **N/A**

Flux Trade Name **N/A**

Weld Metal Thickness **N/A**

Other **N/A**

ELECTRICAL CHARACTERISTIC (QW - 409)

Current **DCEP**

Polarity **See Table Welding Parameter**

Amps **See Table Welding Parameter**

Waveform Control **N/A**

Power or Energy **N/A**

Arc Time **N/A**

Weld Bead Length **N/A**

Tungsten Electrode Size **N/A**

Mode of Metal Transfer for GMAW (FCAW) **N/A**

Heat Input **See Table Welding Parameter**

Other **N/A**

POSITION (QW - 405)

Position(s) of Groove **3G**

Weld Progression (Uphill, Downhill) **Uphill**

Other **N/A**

PREHEAT (QW - 406)

Preheat Temperature **55 °C**

Interpass Temperature **230 °C**

Other **N/A**

TECHNIQUE (QW - 410)

Travel Speed **See Table Welding Parameter**

String or Weave Bead **Weave**

Oscillation **N/A**

Multipass or Single Pass (Per Side) **Multipass**

Single or Multiple Electrodes **Single**

Other **N/A**

AUG - 07901 / 001 / 2021

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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PROCEDURE QUALIFICATION RECORD (PQR)

Record Actual Conditions Used to Weld test Coupon

Page No : 2 of 3

Procedure Qualification Record No. : 008/HEI/PQR/MIGAS/21

Rev. 0

WELDING PARAMETER

Weld No.	Welding Process	Filer Metal		Type Polarity	Ampere	Volt	Travel Speed Range (mm/min)	Heat Input (Kj)
		Class	Dia.					
Front Side								
1	SMAW	E 7018-1H4R	3.2 mm	DCEP	96	24	67	2,06
2					102	26	68	2,34
3					110	25	74	2,23
4					114	24	71	2,31
5					118	25	74	2,39
6					122	27	82	2,41
Back Side								
7	SMAW	E 7018-1H4R	4.0 mm	DCEP	110	26	82	2,09
8					122	27	84	2,35
9					124	26	85	2,28

TENSILE TEST (QW - 160)

Specimen No.	Width (mm)	Thickness (mm)	Area (mm ²)	Ultimate Total Load (kN)	Ultimate Unit Strength (N/mm ²)	Type Failure & Location
T1	19,57	24,6	481,42	261,4	543	Ductile (base metal)
T2	19,53	24,55	479,46	262,47	547	Ductile (base metal)

GUIDE BENT TESTS (QW - 160)

Type and Figure No.	Result
Side Bend (SB1)	No open discontinuity was observed
Side Bend (SB2)	No open discontinuity was observed
Side Bend (SB3)	No open discontinuity was observed
Side Bend (SB4)	No open discontinuity was observed

TOUGHNESS TESTS (QW - 170)

Specimen No.	Notch Location	Specimen Size	Test temp. (°C)	Toughness Values		Drop Weight Break (Y/N)
				% Shear	Mils (in.) or mm	
N/A	N/A	N/A	N/A	N/A		N/A

Comments

Nonor Registrasi Migas

AyG - 07001 / 0005 / 2021

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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WELDING PROCEDURE SPECIFICATION

In accordance with
AWS D1.1 Structure Welding Code Steel, 2020 Edition

PT. Hanazono Engineering Indonesia

HEI-WPS-AWS-FC-01

0

April 15, 2023

Company Name

WPS No.

Rev. No.

Date

Rusnandi

April 15, 2023

HEI-PQR-AWS-FC-01

Authorized by

Date

Supporting PQR(s)

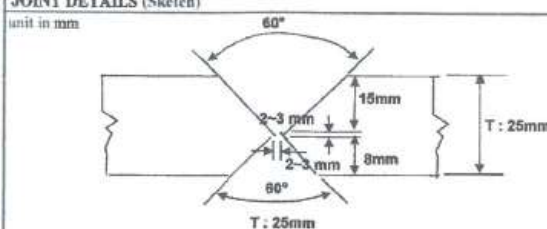
BASE Metals	Specification	Type or Grade	AWS Group No.
Base Material	ASTM	A36	II
Welded To	ASTM	A36	II
Backing Material	-	-	-
Applicable Code	AWS D1.1 (2015)	AWS D1.1 (2015)	AWS D1.1 (2015)
Other	-	-	-

BASE METAL THICKNESS RANGE	As-Welded	With PWHT
CJP Groove Welds (mm)	3.2 - 50 mm	-
CJP Groove w/CVN	-	-
PJP Groove Welds	ALL (V)	-
Fillet Welds	ALL (V)	-
DIAMETER	≥ 24" (600 mm)	-

JOINT DETAILS

Groove Type	Double V-Groove
Groove Angle	60°±5°
Root Opening (mm)	2 - 3 mm
Root Face (mm)	2 - 3 mm
Backgouging	Yes
Method	Arc Air Gouging and Grinding

JOINT DETAILS (Sketch)



POSTWELD HEAT TREATMENT

Temperature	None
Time at Temperature	None
Other	None

PROCEDURE

	1	2	3 & 6	4, 5 & 7
Weld Layer(s)	Root	Hot	Fill	Cap
Weld Pass(es)				
Process	FCAW	FCAW	FCAW	FCAW
Type (Manual, Semiautomatic, etc.)	Semiautomatic	Semiautomatic	Semiautomatic	Semiautomatic
Position	3G	3G	3G	3G
Vertical Progression	Uphill	Uphill	Uphill	Uphill
Filler Metal (AWS Spec.)	A 5.20	A 5.20	A 5.20	A 5.20
AWS Classification	E 71T-1C	E 71T-1C	E 71T-1C	E 71T-1C
Wire size (Dia)	1.2 mm	1.2 mm	1.2 mm	1.2 mm
Manufacturer/ Trade Name	KISWEL or Equivalent	KISWEL or Equivalent	KISWEL or Equivalent	KISWEL or Equivalent
Shielding Gas (Composition)	CO2	CO2	CO2	CO2
Flow Rate	20 L/Min.	20 L/Min.	20 L/Min.	20 L/Min.
Nozzle Size (mm)	-	-	-	-
Preheat Temperature	None for T : 3mm to 19mm incl. Min. 66 °C for T : 19mm-Unlimited	None for T : 3mm to 19mm incl. Min. 66 °C for T : 19mm-Unlimited	None for T : 3mm to 19mm incl. Min. 66 °C for T : 19mm-Unlimited	None for T : 3mm to 19mm incl. Min. 66 °C for T : 19mm-Unlimited
Interpass Temperature	250°C Max.	250°C Max.	250°C Max.	250°C Max.
Electrical Characteristics				
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP
Transfer Mode	-	-	-	-
Power Source Type (cc, cv, etc.)	cc	cc	cc	cc
Current In Amps	120 - 180	145 - 215	154 - 231	155 - 235
Arc Voltage	15 - 22	19 - 29	21 - 31	20 - 30
Wire Feed Speed	-	-	-	-
Travel Speed (mm/min)	82 - 123	96 - 147	97 - 149	96 - 148
Maximum Heat Input (Kj/mm)	1.31 - 1.93	1.72 - 2.51	2.00 - 2.88	1.93 - 2.85
Technique	-	-	-	-
Stringer or Weave	Stringer & Weave	Stringer & Weave	Stringer & Weave	Stringer & Weave
Multi or Single Pass (per side)	Multi	Multi	Multi	Multi
Oscillation (Mechanized/Automatic)	-	-	-	-
Number of Electrodes	Single	Single	Single	Single
Contact Tube to Work Dist.	15 - 25 mm	15 - 25 mm	15 - 25 mm	15 - 25 mm
Pecing	-	-	-	-
Interpass Cleaning	Chipping, Brushing & Grinding	Chipping, Brushing & Grinding	Chipping, Brushing & Grinding	Chipping, Brushing & Grinding
Other	-	-	-	-

Prepared By

Reviewed By

Reviewed By

Reviewed By

PT. HANAZONO ENGINEERING INDONESIA PT. HANAZONO ENGINEERING INDONESIA

Yusuf Husein

YUSUF HUSEIN
WELDING INSP.



RUSNANDI
QA/QC MANAGER



(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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Doc. No	: HEL-PQR-FC-AWS-01
Date	: 0
Rev. No.	: April 15. 2023
Page No	: 1 of 2

PROCEDURE QUALIFICATION RECORD (PQR)

In accordance with
AWS D1. 1 Structure Welding Code Steel, 2015 Edition

PT. Hanazono Engineering Indonesia

Company Name

Rusnandi

Authorized by

HEL-PQR-AWS-FC-01

PQR No.

0

Rev. No.

April 15. 2023

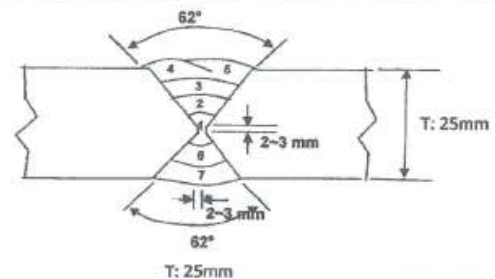
Date

BASE Metals	Specification	Type or Grade	AWS Group No.	Thickness (mm)	Size (NPS)	Schedule	Diameter
Base Material	ASTM	A36	II	25 mm	—	—	—
Welded To	ASTM	A36	II	25 mm	—	—	—
Backing Material	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—

JOINT DETAILS

Groove Type	Double V-Groove
Groove Angle	62°
Root Opening (mm)	2 - 3 mm
Root Face (mm)	2 - 3 mm
Backgouging	Yes
Method	Arc Air Gouging and Grinding

JOINT DETAILS (Sketch)



POSTWELD HEAT TREATMENT

Temperature	None
Time at Temperature	None
Other	None

PROCEDURE

	1	2	3	4	5	6	7
Weld Layer(s)	Root	Hot	Fill	Cap.	Cap.	Fill.	Cap.
Weld Pas(es)	FCAW	FCAW	FCAW	FCAW	FCAW	FCAW	FCAW
Process	FCAW	FCAW	FCAW	FCAW	FCAW	FCAW	FCAW
Type (Manual, Semiautomatic, etc.)	Semiautomatic	Semiautomatic	Semiautomatic	Semiautomatic	Semiautomatic	Semiautomatic	Semiautomatic
Position	3G	3G	3G	3G	3G	3G	3G
Vertical Progression	Uphill	Uphill	Uphill	Uphill	Uphill	Uphill	Uphill
Filler Metal (AWS Spec.)	A 5.20	A 5.20	A 5.20	A 5.20	A 5.20	A 5.20	A 5.20
AWS Classification	E 71T-1C	E 71T-1C	E 71T-1C	E 71T-1C	E 71T-1C	E 71T-1C	E 71T-1C
Wire size (Dia)	1.2 mm	1.2 mm	1.2 mm	1.2 mm	1.2 mm	1.2 mm	1.2 mm
Manufacturer/Trade Name	KISWEL	KISWEL	KISWEL	KISWEL	KISWEL	KISWEL	KISWEL
Shielding Gas (Composition)	CO2	CO2	CO2	CO2	CO2	CO2	CO2
Flow Rate	20 L/Min.	20 L/Min.	20 L/Min.	20 L/Min.	20 L/Min.	20 L/Min.	20 L/Min.
Nozzle Size (mm)	-	-	-	-	-	-	-
Preheat Temperature	-	-	-	-	-	-	-
Interpass Temperature	45°C	105°C	120°C	112°C	134°C	150°C	165°C
Electrical Characteristics							
Current Type & Polarity	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP	DCEP
Transfer Mode	-	-	-	-	-	-	-
Power Source Type (cc, cv, etc.)	cc	cc	cc	cc	cc	cc	cc
Current In Amps	150	180	192	194	194	192	194
Arc Voltage	18	24	27	27	24	24	27
Wire Feed Speed	-	-	-	-	-	-	-
Travel Speed (mm/min)	102	120	128	128	104	106	128
Maximum Heat Input (Kj/mm)	1.59	2.16	2.46	2.46	2.69	2.61	2.46
Technique							
Stringer or Weave	Weave	Weave	Weave	Weave	Weave	Weave	Weave
Multi or Single Pass (per side)	Multi	Multi	Multi	Multi	Multi	Multi	Multi
Oscillation (Mechanized/Automatic)	-	-	-	-	-	-	-
Number of Electrodes	Single	Single	Single	Single	Single	Single	Single
Contact Tube to Work Dist.	19 - 20 mm	19 - 20 mm	19 - 20 mm	19 - 20 mm	19 - 20 mm	19 - 20 mm	19 - 20 mm
Peening	-	-	-	-	-	-	-
Interpass Cleaning	Chipping, Brushing & Grinding						
Other	-	-	-	-	-	-	-

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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PROCEDURE QUALIFICATION RECORD (PQR)

In accordance with
AWS D1. 1 Structure Welding Code Steel, 2020 Edition

TENSILE TEST

Specimen Number	Width (mm)	Thickness (mm)	Area (mm ²)	Ultimate Tensile Load (N)	Ultimate Unit Stress (N/mm ²)	Character of Failure and Location
TS-1	20.12	25.63	515.67	258565	501	Ductile, Base Metal
TS-2	20.08	25.05	503.00	253270	629	Ductile, Base Metal

GUIDE BEND TEST

Specimen Number	Type of Bend	Observation	Result
SB 1	Side Bend 1	No Open Discontinuity was Observed	Accepted
SB 2	Side Bend 2	No Open Discontinuity was Observed	Accepted
SB 3	Side Bend 3	No Open Discontinuity was Observed	Accepted
SB 4	Side Bend 4	No Open Discontinuity was Observed	Accepted

TOUGHNESS TEST DETAILS

Specimen Number	Notch Location	Specimen Size	Test Temperature (°C)	Absorbed Energy	Percent Shear (%)	Lateral Expansion	Average
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

VISUAL INSPECTION

Appearance	Acceptable
Undercut	None
Piping porosity	None
Convexity	None
Test Date	April 10, 2023

Radiographic -Ultrasonic examination

RT report no. :	001/RT/IV/2003	Result :	Accepted
UT report no. :	-	Result :	-

FILLET TEST RESULT

Minimum size multi pass	Maximum size single pass
Macroetch	Macroetch
1. - 3. -	1. - 3. -
2. -	2. -

All weld metal tension test

Tension strength, N/mm2	501 & 629 N/mm2
Yield point/strength, psi	-
Elongation in 2 in, %	-
Laboratory test no.	LP-1462-IDN

Clock no.	-	Stamp No.	SR-0904
		Laboratory	

Test number	DE.1/0423/1389, 1 of 2 & 2 of 2
Per	-

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 AWS D1.1 2020, Structural Welding Code-Steel

Prepared By	Reviewed By	Reviewed By
PT. HANAZONO ENGINEERING INDONESIA  VARIESY HUSEIN WELDING INSP.	PT. HANAZONO ENGINEERING INDONESIA  RUSNANDI QA/QC MANAGER	PT. HANAZONO ENGINEERING INDONESIA  MUSTAHAL, SKM NIP. 19680409 199103 1 006



WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-05

TEST DATE : November 11, 2025

WELDER NAME : YODI
(I.D. NO.) : YD-1138

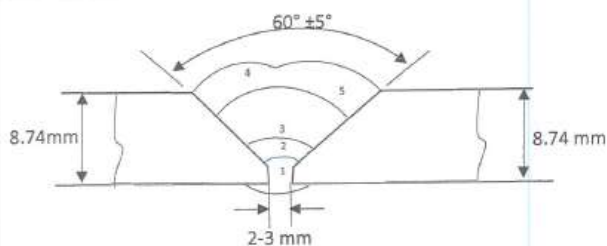
WPS NO. : 006/HEI/WPS/MIGAS/20

PREPARED BY: 18th
12/20/20

REVIEWED BY: *Kim Soriety H*

APPROVED BY : 

SKETCH (Pass Sequence)



MATERIAL	: SA-106 GRB
THICKNESS	: Pipe 2" t : 8.7 mm
SHIELDING GAS	: ARGON
GAS FLOW RATE	: ARGON 12 L/Min
TUNGSEN ELECTRODE	: 1.2~2.4 MM
WELDING POSITION	: 6G/UPHILL
ELECTRICAL CHARACTERISTIC	: DCEN
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : GTAW ER70S-6+E7018
CODE or STANDARD	: ASME IX

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-02

PREPARED BY

BENRIDHO

TEST DATE : November 11, 2025

REVIEWED BY

Variesty H

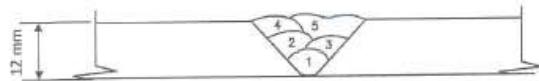
WELDER NAME SAHRUL
(I.D. NO.) SR-0904

APPROVED BY

RUSNANDI

WPS NO. : 008/HEI/WPS/MIGAS/21

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (VERTICAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW E7018-1H4R BOHLER

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-06

TEST DATE : November 11, 2025

WELDER NAME : SAHRUL
(I.D. NO.) : SR-0904

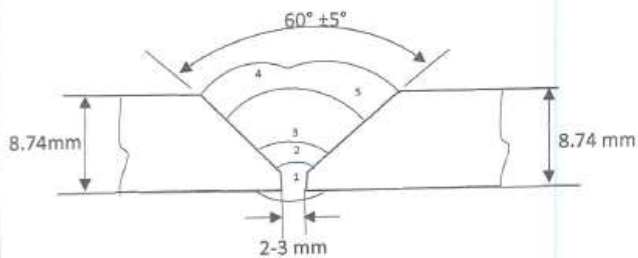
WPS NO. : 006/HEI/WPS/MIGAS/20

PREPARED BY:

REVIEWED BY:

APPROVED BY :

SKETCH (Pass Sequence)



MATERIAL	: SA-106 GRB
THICKNESS	: Pipe 2" I : 8.7 mm
SHIELDING GAS	: ARGON
GAS FLOW RATE	: ARGON 12 L/Min
TUNGSEN ELECTRODE	: 1.2~2.4 MM
WELDING POSITION	: 6G/UPHILL
ELECTRICAL CHARACTERISTIC	: DCEN
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : GTAW ER70S-6+E7018
CODE or STANDARD	: ASME IX

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-03

PREPARED BY

BENRIDHO

TEST DATE : November 11, 2025

REVIEWED BY

variety H

WELDER NAME ROHIMI
(I.D. NO.) RH-1402

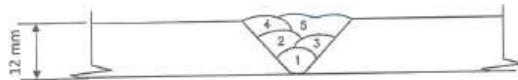
APPROVED BY

RUSNANDI

WPS NO. : 008/HEI/WPS/MIGAS/21

SKETCH (Pass Sequence)

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (VERTICAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW E7018-1H4R BOHLER

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-07

TEST DATE : November 11, 2025

WELDER NAME : ROHIMI

(I.D. NO.) : RH-1402

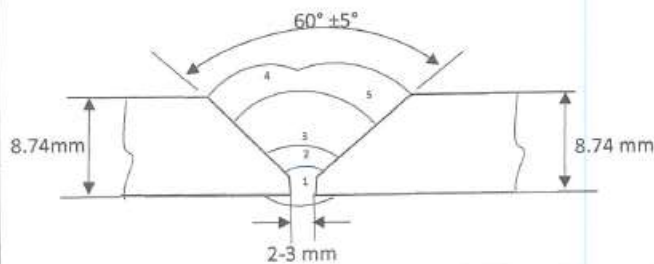
WPS NO. : 006/HEI/WPS/MIGAS/20

PREPARED BY :

REVIEWED BY :

APPROVED BY :

SKETCH (Pass Sequence)



MATERIAL	: SA-106 GRB
THICKNESS	: Pipe 2" t: 8.7 mm
SHIELDING GAS	: ARGON
GAS FLOW RATE	: ARGON 12 L/Min
TUNGSEN ELECTRODE	: 1.2~2.4 MM
WELDING POSITION	: 6G/UPHILL
ELECTRICAL CHARACTERISTIC	: DCEN
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : GTAW ER70S-6+E7018
CODE or STANDARD	: ASME IX

[illegible]



PT. HANAZONO Engineering Indonesia
We are always partner with you

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-08

TEST DATE : November 11, 2025

WELDER NAME : MAHMUDI
(I.D. NO.) : MM-0410

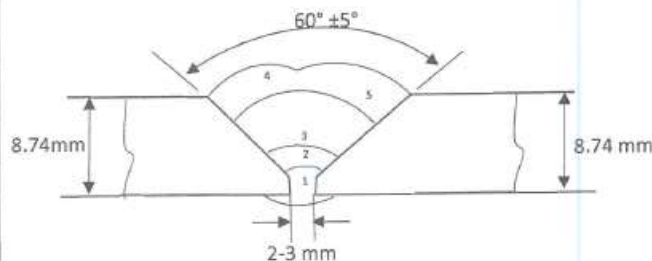
WPS NO. : 006/HEI/WPS/MIGAS/20

PREPARED BY :

REVIEWED BY:

APPROVED BY :

SKETCH (Pass Sequence)



MATERIAL	: SA-106 GRB
THICKNESS	: Pipe 2" t : 8.7 mm
SHIELDING GAS	: ARGON
GAS FLOW RATE	: ARGON 12 L/Min
TUNGSEN ELECTRODE	: 1.2~2.4 MM
WELDING POSITION	: 6G/UPHILL
ELECTRICAL CHARACTERISTIC	: DCEN
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : GTAW ER70S-6+E7018
CODE or STANDARD	: ASME IX

[illegible]



WELDING RECORD OF QUALIFICATION TEST

TEST NO. : QC-WT-2502-04

PREPARED BY

BENRIDHO

TEST DATE : November 11, 2025

REVIEWED BY

Vanesty H

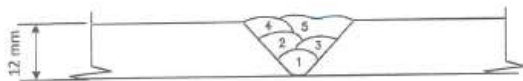
WELDER NAME	SUPARLAN
(I.D. NO.)	SP-2506

APPROVED BY

RISNANDI

WPS NO. : 008/HEI/WPS/MIGAS/21

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (VERTICAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW E7018-1H4R BOHLER

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 4

TEST DATE : December 30, 2025

WELDER NAME : KOSWARA
(I.D. NO.) : KW-2412

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

BENRIDHO

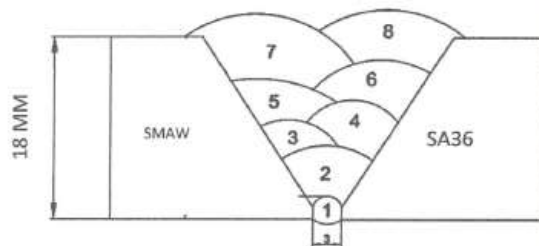
REVIEWED BY

VARIETY

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (Uphill)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 10A

PREPARED BY

BENRIDHO

TEST DATE : April 09, 2026

REVIEWED BY

VARIETY

WELDER NAME : RAHMATULLAH
(I.D. NO.) : RM-2601

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 10

PREPARED BY

BENRIDHO

TEST DATE : April 09, 2026

REVIEWED BY

VARIETY

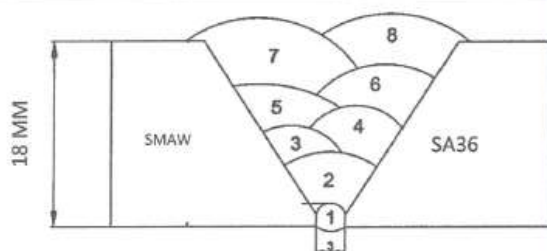
WELDER NAME : RAHMATULLAH
(I.D. NO.) : RM-2601

APPROVED BY _____

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (Uphill)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR



WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 11

TEST DATE : April 09, 2026

WELDER NAME : HIDAYATULLAH
(I.D. NO.) : RM-2602

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

BENRIDHO

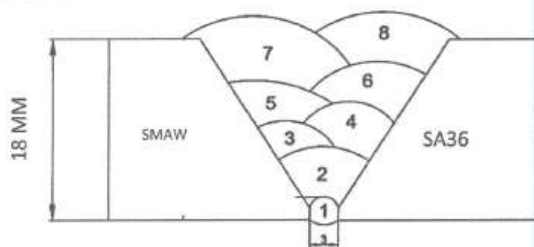
REVIEWED BY

VARIETY

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (Uphill)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

PREPARED BY BENRIDHO

REVIEWED BY VARIETY

APPROVED BY RUSNANDIAPPROVED BY RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 12

PREPARED BY BENRIDHO

TEST DATE : April 09, 2026

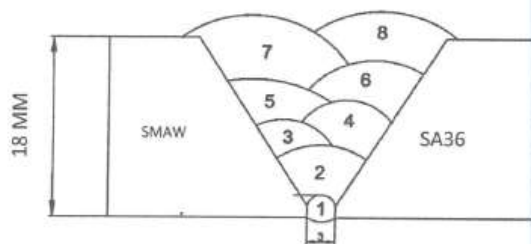
REVIEWED BY VARIETY

WELDER NAME : ARIFAN
(I.D. NO.) : AF-1307

APPROVED BY RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (Uphill)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 12A

PREPARED BY

TEST DATE : April 09, 2026

REVIEWED BY

WELDER NAME : ARIFAN
(I.D. NO.) : HD-2602

APPROVED BY

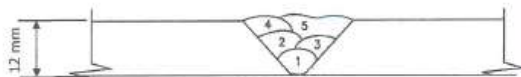
WPS NO. : 04/HEI/WPS/MIGAS/26

BENRIDHO

VARIETY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 13

TEST DATE : April 09, 2026

WELDER NAME : SDARMONO
(I.D. NO.) : SD-2606

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

BENRIDHO

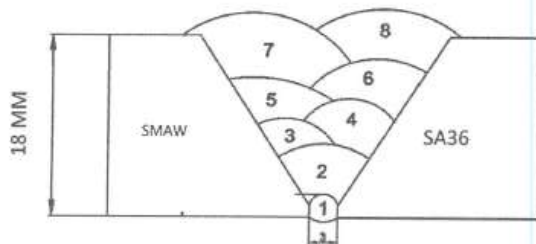
REVIEWED BY

VARIETY

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 4G (Overhead)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 13A

PREPARED BY

BENRIDHO

TEST DATE : April 09, 2026

REVIEWED BY

VARIETY

WELDER NAME : SUDARMONO
(I.D. NO.) : HD-2602

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

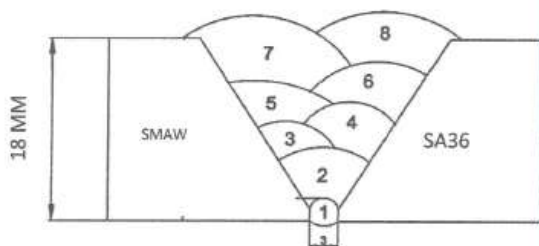
BENRIDHO

VARIETY

RUSNANDI

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 4G (OVERHEAD)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 14A

PREPARED BY

BENRIDHO

TEST DATE : April 09, 2026

REVIEWED BY

VARIETY

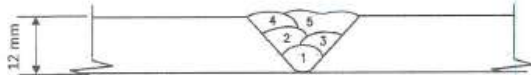
WELDER NAME : AGUS P
(I.D. NO.) : AP-2607

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UPHILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 15A

TEST DATE : April 09, 2026

WELDER NAME : JEFRIYAN
(I.D. NO.) : JF-2608

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

BENRIDHO

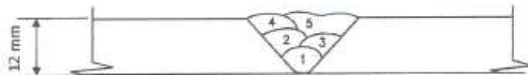
REVIEWED BY

VARIETY

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

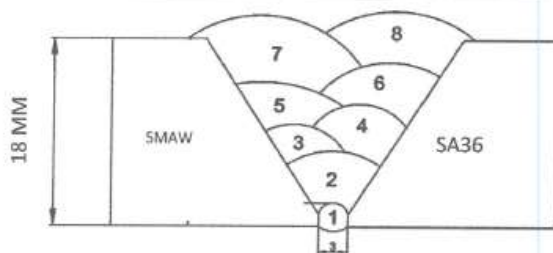
PREPARED BY BENRIDHO

REVIEWED BY VARIETY

APPROVED BY: RUSNANDI

APPROVED BY RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 16

TEST DATE : April 11, 2026

WELDER NAME : NIRMANUDIN
(I.D. NO.) : NR-2610

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

BENRIDHO

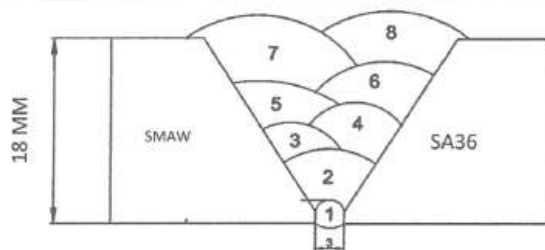
REVIEWED BY

VARIETY

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 18 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

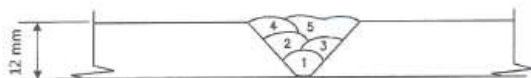
PREPARED BY: TERRY

REVIEWED BY ANDHIKA

APPROVED BY: RUSNANDI

APPROVED BY: RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (HORIZONTAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : FCAW : E71T-1C-H8

[illegible]



WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 7

PREPARED BY

THE
TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

WELDER NAME :SUDARMONO
(I.D. NO.) : SD-2606

APPROVED BY _____

RUSNANDI

WPS NO. : HEI-WPS-AWS-FC-01

SKETCH (Pass Sequence)

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : FCAW : E71T-1C-H8

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. 1

TEST DATE : June 16, 2026

WELDER NAME : SYUKUR
(I.D. NO.) : SY-2611

WPS NO. : 04/HEI/WPS/MIGAS/26

PREPARED BY

TERRY

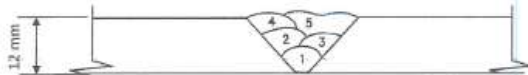
REVIEWED BY

ANDHIKA

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 2G (Horizontal)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

APPROVED BY _____

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. 3

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

WELDER NAME : MARTIN
(I.D. NO.) : MA-2613

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-T 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO.	: 3A
TEST DATE	: June 16, 2026
WELDER NAME (I.D. NO.)	: MARTIN : MA-2613
WPS NO.	: 04/HEI/WPS/MIGAS/26

PREPARED BY

TERRY

REVIEWED BY

ANDHIKA

APPROVED BY

RUSNANDI

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 2G (HORIZONTAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 4

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

WELDER NAME : LAODE
(I.D. NO.) : LA-2614

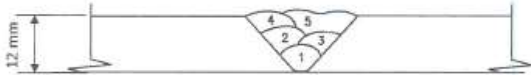
APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)

MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 2G (HORIZONTAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 5

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

WELDER NAME : FERNANDO
(I.D. NO.) : FR-2615

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (HORIZONTAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 5A

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

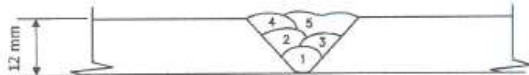
WELDER NAME : FERNANDO
(I.D. NO.) : FR-2615

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 6

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

WELDER NAME :ALFIN
(I.D. NO.) : AL-2616

APPROVED BY

RUSNANDI

WPS NO. : 04/HEI/WPS/MIGAS/26

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : SMAW : E7018-1 4HR

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 8A

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

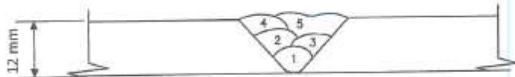
WELDER NAME : AGUS P
(I.D. NO.) : AP-2607

APPROVED BY _____

RUSNANDI

WPS NO. : HEI-WPS-AWS-FC-01

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSTEN ELECTRODE	: N/A
WELDING POSITION	: 2G (HORIZONTAL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : FCAW : E71T-1C-H8

[illegible]

WELDING RECORD OF QUALIFICATION TEST

TEST NO. : 8

PREPARED BY

TERRY

TEST DATE : June 16, 2026

REVIEWED BY

ANDHIKA

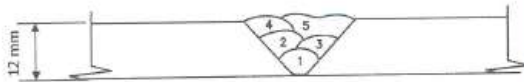
WELDER NAME : AGUS P
(I.D. NO.) : AP-2607

APPROVED BY

RUSNANDI

WPS NO. : HEI-WPS-AWS-FC-01

SKETCH (Pass Sequence)



MATERIAL	: SA 36
THICKNESS	: T 12 mm
SHIELDING GAS	: N/A
GAS FLOW RATE	: N/A
TUNGSEN ELECTRODE	: N/A
WELDING POSITION	: 3G (UP HILL)
ELECTRICAL CHARACTERISTIC	: DCEP
TECHNIQUE	: String & Weave Bead
OTHERS	: Brand Name Filler Metal : FCAW : E71T-1C-H8

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REPORT RT

COMO ENGINEERS	POBOYA 2000 TPD EXPANSION PROJECT	 PT Citra Paha Minerals
(CPM Work No.) 14898	Project Document. No.: E2502-000-PRC-006	Revision No. : C
(Vendor Work No.) E2502	Purchase Order No. : 11580	Page 88 of 105

 PT. TITIAN LANCAR ABADI NDT INSPECTION & CERTIFICATION SPECIALIST : NON DESTRUCTIVE (NDT - POST WELD HEAT TREATMENT (PWHT) - PRESSURE TESTING (PST) INSPECTION AND CERTIFICATION - TECHNICAL - NDT EQUIPMENT SUPPLIER Head Office : Kp. Gunung Buntu, RT. 005/ RW. 003, Ds. Banyuwangi, Kec. Pulo Ampel, Kab. Serang, Prov. Banten - INDONESIA 42455 Branch Office : Perumahan Taman Cilegon Cluster Catalonia Blok G7 No. 16 Kota Cilegon, Prov. Banten - INDONESIA 42413 Phone. (0254) 781-8985 E-mail. ptitian889@gmail.com		  																	
RADIOGRAPHY TESTING REPORT																			
CLIENT : PT. HANAZONO ENGINEERING INDONESIA CONTRACTORS : - PROJECT : WELDER TEST POBOYA 2000 EXPANSION LOCATION : CILEGON-BANTEN	REPORT NO. : 004/TLA/RT-HEI/XII/2025 DATE : 30 Desember 2025 CONTRACT NO. :	PROCEDURE : ASME SEC IX ACC. CRITERION : ASME SEC IX SOP. NO. : TLA-RT-ASME-003																	
PERSONNEL RT Lev 2 / Interpr. : EKO SUBJATMONO RT Lev 1 : DENNIS PPR : SALSABILLA NUUR RADESTYA PUTRI	ESSENTIAL EQUIPMENT ☒ GAMMA RAY MERK : Sentinel TYPE : Delta 880 SERIAL No. : D12788 ☐ X-RAY MERK : - TYPE : - SERIAL No. : -																		
ESSENTIAL SOURCE & SURVEY METER ISOTOP : IRIIDIUM 192 SERIAL No. : AS-708 CURIE ACT. : 20 CURIE Ci SOURCE SIZE : 3 x 2 mm F.SPOT SIZE : 3.6 mm SURVEY METER : ND 2000 A S/N : 96785	FILM DATA FILM BRAND : Fuji FILM TYPE : D7 SIZE 4" x 10" : - SHEET SIZE 4" x 15" : 7 SHEET SIZE 7" x 17" : - SHEET Process : SMAW	ACCESSORIES IQI TYPE : ☐ ASTM 1A ☒ ASTM 1B PLACE of IQIs : ☐ FILM SIDE ☒ SOURCE SIDE SCREEN TYPE : ☒ LEAD ☐ RADAC SCREEN THICK. : FRONT & REAR : 1.25 mm																	
NO.	IDENTIFICATION	JOINT NO.	LOCATION (INCH)	MATERIAL SPECIFICATION	MATERIAL THICKNESS (mm)	PIPE DIA (INCH) / PLATE	WELDER STAMP	DENSITY	SENSITIVITY (WIRE VISIBLE)	INCOMPLETE PENETRATION	INCOMPLETE FUSION	CRACKS	BAND & SLAG INCLUSION	GAS POROSITY	EXCESSIVE PENETRATION	ROOT CONCAVITY	UNDERCUT	RESULT	REMARKS
1	AMAK HUSNI / 3G / A36 30-12-2025		A-B	C/S	12 mm	PLATE	AH-2501	2~4	6					✓				✓	Por 1 mm
2	MISROJI / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	MR-2509	2~4	6				✓	✓				✓	Por 2 mm, Si 4 mm
3	SUPARLAN / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	SP-2506	2~4	6									✓	
4	MARHANI / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	MH-2505	2~4	6				✓	✓				✓	Si 1,5 mm, Por 0,5 mm
5	KOSWARA / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	KW-2412	2~4	6									✓	
6	HAMSINUDIN / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	HS-1988	2~4	6					✓				✓	Por 1,5 mm
7	APRIYANTO / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	AR-2504	2~4	6		✓			✓				✓	IF, Por / CP
RT Lev 2 / INTERPRETER		QC INSPECTOR		REVIEW BY		CLIENT / OWNER REP.													
 EKO SUBJATMONO DATE : 31-Dec-25 th		 DATE : Jan 03. 2026		DATE :		DATE :													



PT. TITIAN LANCAR ABADI

NDT INSPECTION & CERTIFICATION

SPECIALIST :

NON DESTRUCTIVE (NDT - POST WELD HEAT TREATMENT (PWHT) - PRESSURE TESTING (PST) INSPECTION AND CERTIFICATION - TECHNICAL - NDT EQUIPMENT SUPPLIER

Head Office : Kp. Gunung Buntu, RT. 005/ RW. 003, Ds. Banyuwangi, Kec. Pulo Ampel, Kab. Serang, Prov. Banten - INDONESIA 42455

Branch Office : Perumahan Taman Clegon Cluster Catalonia Blok G7 No. 16 Kota Clegon, Prov. Banten - INDONESIA 42413

Phone (0254) 781-8965
E-mail: ptitlan889@gmail.com




ISO 9001:2015
ISO 14001:2015
ISO 45001:2018

RADIOGRAPHY TESTING REPORT

CLIENT : PT. HANAZONO ENGINEERING INDONESIA

CONTRACTORS : -

PROJECT : WELDER TEST POBOYA 2000 EXPANSION

LOCATION : CILEGON-BANTEN

REPORT NO. : 003/TLA/RT-HEI/XII/2025

DATE : 24 Desember 2025

CONTRACT NO. : -

PROCEDURE : ASME SEC IX

ACC. CRITERION : ASME SEC IX

SOP. NO. : TLA-RT-ASME-003

PERSONNEL

RT Lev 2 / Interpr. : RAHMAT SAPUTRA

RT Lev 1 : DENNIS

PPR : SALSABILLA NUUR RADESTYA PUTRI

ESSENTIAL EQUIPMENT

☒ GAMMA RAY MERK : Sentinel TYPE : Delta 880 SERIAL No. : D12788

☐ X-RAY MERK : - TYPE : - SERIAL No. : -

ESSENTIAL SOURCE & SURVEY METER

ISOTOP : Iridium 192

SERIAL No. : AS-708

CURIE ACT. : 12 CURIE Ci

SOURCE SIZE : 3 x 2 mm

F.SPOT SIZE : 3.6 mm

SURVEY METER : ND 2000 A S/N : 96785

FILM DATA

FILM BRAND : Fuji

FILM TYPE : D7

SIZE 4" x 10" : 8 SHEET

SIZE 4" x 15" : - SHEET

SIZE 7" x 17" : - SHEET

Process : GTAW/ SMAW

ACESSORIES

IQI TYPE : ☐ ASTM 1A ☒ ASTM 1B

PLACE of IQIs : ☐ FILM SIDE ☒ SOURCE SIDE

SCREEN TYPE : ☒ LEAD ☐ RADAC

SCREEN THICK. : FRONT & REAR : 1.25 mm

NO.	IDENTIFICATION	JOINT NO.	LOCATION (INCH)	MATERIAL SPECIFICATION	MATERIAL THICKNESS (mm)	PIPE DIA / (INCH) / PLATE	WELDER STAMP	DENSITY	SENSITIVITY (WIRE VISIBLE)	INCOMPLETE PENETRATION	INCOMPLETE FUSION	CRACKS	SAND & SLAG INCLUSION	GAS POROSITY	EXCESSIVE PENETRATION	ROOT CONCAVITY	UNDERCUT	RESULT		REMARKS	
																		ACC	REJECT		
1	DIDI MUSMULYADI / 6G / A-106B / 24-12-2025	0	90	A-106 GR B	5,5 mm	ø 2"	DM-2512	2~4	6										✓		
							DM-2512	2~4	6											✓	
2	SAMAD / 6G / A-106B / 24-12-2025	0	90	A-106 GR B	5,5 mm	ø 2"	SM-2402	2~4	6				✓						✓		SL L : 2 mm
							SM-2402	2~4	6				✓					✓			Por ø 1 mm
3	MAHMUDI / 6G / A-106B / 24-12-2025	0	90	A-106 GR B	5,5 mm	ø 2"	MM-0410	2~4	6										✓		F/Scrotch
							MM-0410	2~4	6									✓			
4	ROJI'IN / 6G / A-106B / 24-12-2025	0	90	A-106 GR B	5,5 mm	ø 2"	RJ-2403	2~4	6										✓		
							RJ-2403	2~4	6				✓				✓			Por ø 1 mm	

RT Lev 2 / INTERPRETER



RAHMAT SAPUTRA

DATE: 25-Dec-25 th

QC INSPECTOR



Rusman

DATE: 20c 26. 2025

REVIEW BY

DATE:

CLIENT / OWNER REP.

DATE:

RADIOGRAPHIC EXAMINATION REPORT																			
PT. KOSTEC INDONESIA MANDIRI Kp. Buah Jangkung, Kel. Waringinkurung, Office : Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765				Report No.		KIM-RT-HKI-4-2026-010													
				Examination Date		09 April 2026													
				Report Date		10 April 2026													
				Page No.		1 OF 1													
Project Name, No. POBOYA 2000 TPD EXPANSION				Customer PT. HANAZONO ENGINEERING INDONESIA															
Applied Spec. ASME IX 2025 Edition				Procedure No. KIM-NDE-ASME-RTP-02		Rev. No. 0													
Item Name, No. WELDER TEST				RFI No. QC-AFI-RT-CPM-001															
Base Material Type : CS to CS Plate ☒ PIPE ☐				Diameter (DN) : - to - ☐ mm															
Weld Reinforcement Thickness : 2 ☐ mm																			
Base Material Thickness : 12 to 12 ☐ mm ☐ inch				Weld Thickness : 14 ☒ mm ☐ inch															
Item Type ☒ Welding ☐ Casting				Welding Process : ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW															
V-Ray	Type : Sentinel ☒ Ir-192 ☐ Co-60	X-Ray		Manufacturer :															
	Serial No. : D17428			Serial No. :															
	Curie : 17 Ci			kV mA															
	Source Size : 3 x 2 mm			Focal Size : x ☐ mm															
Film Brand ☒ FUJI TYPE ☐ XD50 ☒ XD100 FILM SIZE ☒ 4x15 Inch ☐ 4x10 Inch	Screen ☒ Lead Front 0,125 ☒ mm ☐ Fluorescent Back 0,125 ☒ mm																		
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. ☐ 1A ☐ 1C ☒ 1B ☐ 1D	IQI Placement ☒ Source Side ☐ Film Side																		
Source to Object Distance : 342 ☒ mm ☐ inch		Exposure Time : 2 Minutes 30 Second																	
Source to Film Distance : 356 ☒ mm ☐ inch																			
Set up Exposure ☒ Single-wall exposure ☐ Double-wall exposure Sensitivity : 2 %																			
Viewing ☒ Single-wall viewing ☐ Double-wall viewing Ug : 0,51 mm																			
Development Temperature : 20° C Developing Time : 5 Minutes Film Density : 2 ~ 4																			
Sketch																			
A  B  C  D  E  F 																			
Name of Welder	ID Welder	Position	LIMIT	Type of Indication												RESULT		Remarks	
				(1) P	(2) S	(3) IP	(4) LF	(5) TI	(6) UC	(7) SD	(8) RC	(9) BT	(10) C	(11) SI	(12) OT	PASS	FAIL		
ARIFAN	AF-1307	3G	A - B																
TOTAL FILMS																			
Inspected By H. Level II Sugeng				Reviewed By				Reviewed By											
Designation																			
Name																			
Signature																			
Date 10 April 2026																			
NOTE : (1) P : Porosity (6) UC : Undercut (7) SD : Surface Defect (10) C : Crack (2) S : Slag Inclusion (8) TI : Tungsten Inclusion (8) RC : Root Concavity (11) SI : Surface Indicator (3) IP : Incomplete Penetrat (9) BT : Burn Through (12) OT : Others																			

RADIOGRAPHIC EXAMINATION REPORT					
			Report No.		
PT. KOSTEC INDONESIA MANDIRI Kp. Buah Jangkung, Kel. Waringinkurung, Office : Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765			KIM-RT-HKI-4-2026-009		
			Examination Date		
			09 April 2026		
			Report Date		
			10 April 2026		
			Page No.		
			1 OF 1		
Project Name, No.			Customer		
POBOYA Z000 TPD EXPANSION			PT. HANAZONO ENGINEERING INDONESIA		
Applied Spec.			Procedure No.		
ASME IX 2025 Edition			KIM-NDE-ASME-RTP-02		
Item Name, No.			Rev. No.		
WELDER TEST			0		
RFI No.			QC-AFI-RT-CPM-001		
Base Material Type			Diameter (DN)		
CS to CS			mm		
Plate ☒ PIPE ☐			Weld Reinforcement Thickness		
			2 mm		
Base Material Thickness			Weld Thickness		
18 to 18 mm			20 mm		
			inch		
Item Type			Welding Process		
☒ Welding ☐ Casting			☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW ☐ GMAW		
Y-Ray			X-Ray		
Type : Sentinel ☒ Ir-192 ☐ Co-60			Manufacturer :		
Serial No. : D17428			Serial No. :		
Curie : 17 Ci			kV mA		
Source Size : 3 x 2 mm			Focal Size x mm		
Film Brand			Screen		
☒ FUJI TYPE ☐ XD50 ☒ XD100 FILM SIZE ☒ 4x15 Inch			☒ Lead Front 0,125 mm		
☐ AGFA ☐ D4 ☐ D7 ☐ 4x10 Inch			☐ Fluorescent Back 0,125 mm		
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. ☐ IA ☐ IC			IQI Placement		
☒ 1B ☐ 1D			☒ Source Side ☐ Film Side		
Source to Object Distance			Exposure Time		
336 mm inch			3 Minutes 10 Second		
Source to Film Distance					
356 mm inch					
Set up			Sensitivity : 2 %		
Exposure ☒ Single-wall exposure ☐ Double-wall exposure			Ug : 0,51 mm		
Viewing ☒ Single-wall viewing ☐ Double-wall viewing			Development Temperature : 20° C		
Temperature : 20° C			Developing Time : 5 Minutes		
Film Density : 2 ~ 4					
Sketch					
A B C D E F					
Name of Welder	ID Welder	Position	LIMIT	Type of Indication	RESULT
ARIFAN	AF-1307	2G	A - B	(1) P (2) S (3) IP (4) LF (5) TI (6) UC (7) SD (8) RC (9) BT (10) C (11) SI (12) OT	PASS FAIL
TOTAL FILMS			1		
Inspected By	Reviewed By		Reviewed By		
Designation					
Name					
Signature					
Date					
NOTE : (1) P : Porosity (4) LF : Lack of Fusion (7) SD : Surface Defect (10) C : Crack (2) S : Slag Inclusion (5) TI : Tungsten Inclusion (8) RC : Root Concavity (11) SI : Surface Indicator (3) IP : Incomplete Penetration (6) UC : Undercut (9) BT : Burn-Through (12) OT : Others					

RADIOGRAPHIC EXAMINATION REPORT									
 PT. KOSTEC INDONESIA MANDIRI Kp. Buah Jangkung, Kel. Waringinkurung, Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765 Report No. KIM-RT-HEI-4-2026-003 Examination Date 09 April 2026 Report Date 10 April 2026 Page No. 1 OF 1									
Project Name, No. POBOYA 2000 TPD EXPANSION				Customer PT. HANAZONO ENGINEERING INDONESIA					
Applied Spec. ASME IX 2025 Edition				Procedure No. KIM-NDE-ASME-RTP-02				Rev. No. 0	
Item Name, No. WELDER TEST				RFI No. QC-AFI-RT-CPM-001					
Base Material Type CS to CS Plate ☒ PIPE ☐				Diameter (DN) - to - mm					
Base Material Thickness 12 to 12 mm inch				Weld Reinforcement Thickness 2 mm					
Item Type ☒ Welding ☐ Casting				Weld Thickness 14 mm inch					
Welding Process ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW				GMAW					
Y-Ray Type : Sentinel ☒ Ir-192 ☐ Co-60 Serial No. : D17428 Curie : 17 Ci Source Size : 3 x 2 mm				X-Ray Manufacturer : Serial No. : kV : mA : Focal Size : x mm					
Film Brand ☒ FUJI ☐ AGFA TYPE ☐ XD50 ☒ XD100 ☐ D4 ☐ D7				FILM SIZE ☒ 4x15 Inch ☐ 4x10 Inch					
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL				Screen ☒ Lead ☐ Fluorescent Front 0,125 mm Back 0,125 mm					
ID No. ☐ 1A ☐ 1C ☒ 1B ☐ 1D				IQI Placement ☒ Source Side ☐ Film Side					
Source to Object Distance 342 mm				Exposure Time 2 Minutes 30 Second					
Source to Film Distance 356 mm				Sensitivity 2 %					
Set up Exposure ☒ Single-wall exposure ☐ Double-wall exposure Viewing ☒ Single-wall viewing ☐ Double-wall viewing				Ug 0,51 mm					
Development Temperature : 20° C				Developing Time 5 Minutes					
Film Density 2 ~ 4									
Sketch ☒ A  ☐ B  ☐ C  ☐ D  ☐ E  ☐ F 									
Type of Indication									
Name of Welder HIDAYATTULLOH									
ID Welder HD-2602									
Position 2G									
LIMIT A - B									
RESULT PASS									
Remarks Por = 1 mm									
TOTAL FILMS 1									
Inspected By RT Level II									
Reviewed By									
Signature IRFAV									
Date 10 April 2026									
NOTE : ① P : Porosity ② S : Slag Inclusion ③ IP : Incomplete Penetration ④ LF : Lack of Fusion ⑤ TI : Tungsten Inclusion ⑥ UI : Undercut ⑦ SD : Surface Defect ⑧ RC : Root Concavity ⑨ BT : Burn-Through ⑩ C : Crack ⑪ SI : Surface Indicator ⑫ OT : Others									

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[illegible]

RADIOGRAPHIC EXAMINATION REPORT

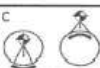
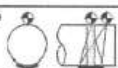
PT. KOSTEC INDONESIA MANDIRI						Report No.		KIM-RT-HEI-4-2026-021											
Kp. Buah Jangkung, Kel. Waringinkurung, Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765						Examination Date		10 April 2026											
Office :						Report Date		11 April 2026											
						Page No.		1 OF 1											
Project Name, No.						Customer													
POBOYA 2000 TPD EXPANSION						PT. HANAZONO ENGINEERING INDONESIA													
Applied Spec.						Procedure No.		Rev. No.											
ASME IX 2025 Edition						KIM-NDE-ASME-RTP-02		0											
Item Name, No.						RFI No.													
WELDER TEST						QC-AFI-RT-CPM-002													
Base Material Type : CS to CS						Diameter (DN) : to mm													
Plate ☒ PIPE ☐						Weld Reinforcement Thickness : 2 mm ☒													
Base Material Thickness : 18 to 18 mm ☐ inch ☐						Weld Thickness : 20 mm ☒ inch ☐													
Item Type ☒ Welding ☐ Casting						Welding Process : ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW ☐ GMAW													
Y-Ray						X-Ray													
Type : Sentinel ☒ Ir-192 ☐ Co-60						Manufacturer :													
Serial No. : D17428						Serial No. :													
Curie : 17 Ci						kV mA													
Source Size : 3 x 2 mm						Focal Size x mm													
Film Brand ☒ FUJI ☐ AGFA TYPE ☐ XD50 ☒ XD100 FILM SIZE ☒ 4x15 Inch ☐ 4x10 Inch						Screen													
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. ☐ 1A ☐ 1C ☒ 1B ☐ 1D						IQI Placement ☒ Source Side ☐ Film Side													
Source to Object Distance : 336 mm ☒ inch						Exposure Time : 3 Minutes 10 Second													
Source to Film Distance : 356 mm ☒ inch																			
Set up Exposure ☒ Single-wall exposure ☐ Double-wall exposure Sensitivity : 2 %																			
Viewing ☒ Single-wall viewing ☐ Double-wall viewing Ug : 0,51 mm																			
Development Temperature : 20° C Developing Time : 5 Minutes Film Density : 2 ~ 4																			
Sketch																			
☒ A  ☐ B  ☐ C  ☐ D  ☐ E  ☐ F 																			
Name of Welder	ID Welder	Position	LIMIT	Type of Indication												RESULT		Remarks	
				(1) P	(2) S	(3) IP	(4) LF	(5) TI	(6) UC	(7) SD	(8) RC	(9) BT	(10) C	(11) SI	(12) OT	PASS	FAIL		
NIRMANUDIN	NR-2610	3G	A - B	✓												✓		Por = 1 mm	
TOTAL FILMS			1																
Inspected By				Reviewed By				Reviewed By											
Designation																			
Name																			
Signature																			
Date																			
NOTE : ① P: Porosity ② S: Slag Inclusion ③ IP: Incomplete Penetration ④ LF: Lack of Fusion ⑤ TI: Tungsten Inclusion ⑥ UC: Undercut ⑦ SD: Surface Defect ⑧ RC: Root Concavity ⑨ BT: Burn-Through ⑩ C: Crack ⑪ SI: Surface Indicator ⑫ OT: Others																			

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RADIOGRAPHIC EXAMINATION REPORT

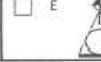
 PT. KOSTEC INDONESIA MANDIRI Kp. Buah Jangkung, Kel. Waringinkurung, Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765		Report No. : KIM-RT-HEI-4-2026-014 Examination Date : 10 April 2026 Report Date : 11 April 2026 Page No. : 1 OF 1	
Project Name, No. : POBOYA 2000 TPD EXPANSION		Customer : PT. HANAZONO ENGINEERING INDONESIA	
Applied Spec. : ASME IX 2025 Edition		Procedure No. : KIM-NDE-ASME-RTP-02 Rev. No. : 0	
Item Name, No. : WELDER TEST		R/T No. : QC-AFI-RT-CPM-002	
Base Material Type : CS to CS Plate ☒ PIPE ☐		Diameter (DN) : - to - ☐ mm Weld Reinforcement Thickness : 2 ☒ mm	
Base Material Thickness : 18 to 18 ☐ mm ☐ inch		Weld Thickness : 20 ☒ mm ☐ inch	
Item Type : ☒ Welding ☐ Casting		Welding Process : ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW	
Y-Ray Type : Sentinel ☒ Ir-192 ☐ Co-60 Serial No. : D17428 Curie : 17 Ci Source Size : 3 x 2 mm		X-Ray Manufacturer : Serial No. : kV : mA : Focal Size : x : mm ☒ Lead Front 0,125 ☒ mm ☐ Fluorescent Back 0,125 ☒ mm	
Film Brand : ☒ FUJI ☐ AGFA TYPE : ☐ XD50 ☒ XD100 FILM SIZE : ☒ 4x15 Inch ☐ 4x10 Inch		Screen : ☒ Source Side ☐ Film Side	
IQI Type : ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. : ☐ 1A ☐ 1C ☒ 1B ☐ 1D		Exposure Time : 3 Minutes 10 Second	
Source to Object Distance : 336 ☒ mm ☐ inch		Exposure : ☒ Single-wall exposure ☐ Double-wall exposure Sensitivity : 2 %	
Source to Film Distance : 356 ☒ mm ☐ inch		Viewing : ☒ Single-wall viewing ☐ Double-wall viewing Ug : 0,51 mm	
Development : Temperature : 20° C		Developing Time : 5 Minutes Film Density : 2 ~ 4	
Sketch : ☒ A ☐ B ☐ C ☐ D ☐ E ☐ F			
Name of Welder : SUDARMONO ID Welder : SD-2606 Position : 4G LIMIT : A - B		Type of Indication : ① P ② S ③ IP ④ LF ⑤ TI ⑥ UC ⑦ SD ⑧ RC ⑨ BT ⑩ C ⑪ SI ⑫ OT RESULT : PASS FAIL	
TOTAL FILMS : 1		Remarks : Film Mark	
Inspected By : RT Level 1 Sugeng		Reviewed By : [Signature]	
Designation : [Signature]		Reviewed By : [Signature]	
Name : [Signature]		Reviewed By : [Signature]	
Signature : [Signature]		Reviewed By : [Signature]	
Date : 11 April 2026		Date : 13 April 2026	
NOTE : ① P : Porosity ② S : Slag Inclusion ③ IP : Incomplete Penetration ④ LF : Lack of Fusion ⑤ TI : Tungsten Inclusion ⑥ UC : Undercut ⑦ SD : Surface Defect ⑧ RC : Root Concavity ⑨ BT : Burn-Through ⑩ C : Crack ⑪ SI : Surface Indicator ⑫ OT : Others			

RADIOGRAPHIC EXAMINATION REPORT

PT. KOSTEC INDONESIA MANDIRI						KIM-RT-HEI-4-2026-018												
Office : Kp. Buah Jangkung, Kel. Waringinkurung, Kab. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765						Report No.												
						Examination Date												
						Report Date												
						Page No.												
						1 OF 1												
Project Name, No. POBOYA 2000 TPD EXPANSION						Customer PT. HANAZONO ENGINEERING INDONESIA												
Applied Spec. ASME IX 2025 Edition						Procedure No. KIM-NDE-ASME-RTP-02												
Item Name, No. WELDER TEST						Rev. No. 0												
Base Material Type : CS to CS Plate ☒ PIPE ☐						RFI No. QC-AFI-RT-CPM-002												
Diameter (DN) : - to - ☐ mm						Weld Reinforcement Thickness : 2 ☒ mm												
Base Material Thickness : 18 to 18 ☐ mm ☐ Inch						Weld Thickness : 20 ☒ mm ☐ Inch												
Item Type ☒ Welding ☐ Casting						Welding Process : ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW												
Y-Ray Type : Sentinel ☒ Ir-192 ☐ Co-60 Serial No. : D17428 Curie : 17 ☐ Source Size : 3 x 2 mm						X-Ray Manufacturer : Serial No. : kV : mA Focal Size : x ☐ mm												
Film Brand ☒ FUJI TYPE ☐ XD50 ☒ XD100 FILM SIZE ☒ 4x15 Inch ☐ 4x10 Inch						Screen ☒ Lead Front 0,125 ☒ mm ☐ AGFA TYPE ☐ D4 ☐ D7 ☐ Fluorescent Back 0,125 ☒ mm												
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. ☐ 1A ☐ 1C ☒ 1B ☐ 1D						IQI Placement ☒ Source Side ☐ Film Side												
Source to Object Distance 336 ☒ mm ☐ inch						Exposure Time 3 Minutes 10 Second												
Source to Film Distance 356 ☒ mm ☐ inch																		
Set up Exposure ☒ Single-wall exposure ☐ Double-wall exposure Sensitivity : 2 %						Viewing ☒ Single-wall viewing ☐ Double-wall viewing Ug : 0,51 mm												
Development Temperature : 20° C Developing Time : 5 Minutes Film Density : 2 ~ 4																		
Sketch																		
☒ A  ☐ B  ☐ C  ☐ D  ☐ E  ☐ F 																		
Name of Welder	ID Welder	Position	LIMIT	Type of Indication												RESULT		Remarks
JEFRIAN	JF-2608	3G	A - B	(1) P	(2) S	(3) IP	(4) LF	(5) TI	(6) UC	(7) SD	(8) RC	(9) BT	(10) C	(11) SI	(12) OT	PASS	FAIL	
TOTAL FILMS			1															
Inspected By BT Level II Sugeng				Reviewed By				Reviewed By										
Designation																		
Name																		
Signature																		
Date 11 April 2026																		
NOTE : (1) P : Porosity (4) LF : Lack of Fusion (7) SD : Surface Defect (10) C : Crack (2) S : Slag Inclusion (5) TI : Tungsten Inclusion (8) RC : Root Concavity (11) SI : Surface Indicator (3) IP : Incomplete Penetration (6) UC : Undercut (9) BT : Burn-Through (12) OT : Others																		

RADIOGRAPHIC EXAMINATION REPORT

 PT. KOSTEC INDONESIA MANDIRI		Report No. : KIM-RT-HEI-4-2026-017	
Kp. Buah Jangkung, Kel. Waringinkuring, Kec. Waringinkuring, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765		Examination Date : 10 April 2026	
Office :		Report Date : 11 April 2026	
		Page No. : 1 OF 1	
Project Name, No. : POBOYA 2000 TPD EXPANSION		Customer : PT. HANAZONO ENGINEERING INDONESIA	
Applied Spec. : ASME IX 2025 Edition		Procedure No. : KIM-NDE-ASME-RTP-02 Rev. No. : 0	
Item Name, No. : WELDER TEST		RTI No. : QC-AFI-RT-CPM-002	
Base Material Type : CS to CS Plate ☒ PIPE ☐		Diameter (DN) : - to - ☐ mm Weld Reinforcement Thickness : 2 ☒ mm	
Base Material Thickness : 12 to 12 ☐ mm ☐ inch		Weld Thickness : 14 ☒ mm ☐ inch	
Item Type : ☒ Welding ☐ Casting		Welding Process : ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW	
Y-Ray Type : Sentinel ☒ Ir-192 ☐ Co-60 Serial No. : D17428 Curie : 17 ☐ Source Size : 3 x 2 mm		X-Ray Manufacturer : Serial No. : kV : mA Focal Size : x mm ☒ Lead Front 0,125 ☒ mm ☐ Fluorescent Back 0,125 ☒ mm	
Film Brand : ☒ FUJI ☐ AGFA TYPE : ☐ XD50 ☐ XD100 ☐ D4 ☐ D7 FILM SIZE : ☒ 4x15 Inch ☐ 4x10 Inch		Screen : ☐ 1A ☐ 1C ☒ 1B ☐ 1D	
IQI Type : ☒ ASTM ☐ KS/JIS ☐ MIL ID No. : ☐ 1A ☐ 1C ☒ 1B ☐ 1D		IQI Placement : ☒ Source Side ☐ Film Side	
Source to Object Distance : 342 ☒ mm ☐ inch		Exposure Time : 2 Minutes 30 Second	
Source to Film Distance : 356 ☒ mm ☐ inch		Sensitivity : 2 % Ug : 0,51 mm Film Density : 2 ~ 4	
Set up : Exposure ☒ Single-wall exposure ☐ Double-wall exposure Viewing ☒ Single-wall viewing ☐ Double-wall viewing		Development : Temperature : 20° C Developing Time : 5 Minutes	
Sketch : ☒ A  ☐ B  ☐ C  ☐ D  ☐ E  ☐ F 			
Name of Welder : JEFRYAN ID Welder : JF-2608 Position : 2G LIMIT : A - B		Type of Indication : ① P ② S ③ IP ④ LF ⑤ TI ⑥ UC ⑦ SD ⑧ RC ⑨ BT ⑩ C ⑪ SI ⑫ OT RESULT : PASS FAIL	
TOTAL FILMS : 1		Inspected By : RT Level II Sugeng Reviewed By : Reviewed By	
Designation : Name : Signature : Date : 11 April 2026		Remarks :	
NOTE : ① P : Porosity ② S : Slag Inclusion ③ IP : Incomplete Penetration ④ LF : Lack of Fusion ⑤ TI : Tungsten Inclusion ⑥ UC : Undercut ⑦ SD : Surface Defect ⑧ RC : Root Concavity ⑨ BT : Burn-Through ⑩ C : Crack ⑪ SI : Surface Indicator ⑫ OT : Others			

RADIOGRAPHIC EXAMINATION REPORT																			
 PT. KOSTEC INDONESIA MANDIRI Kp. Buah Jangkung, Kel. Waringinkurung, Office : Kec. Waringinkurung, Kab. Serang, Banten, 42153 Phone : (0254) 781 - 3765 Report No. KIM-RT-HEI-4-2026-016 Examination Date 10 April 2026 Report Date 11 April 2026 Page No. 1 OF 1																			
Project Name, No. POBOYA 2000 TPD EXPANSION						Customer PT. HANAZONO ENGINEERING INDONESIA													
Applied Spec. ASME IX 2025 Edition						Procedure No. KIM-NDE-ASME-RTP-02 Rev. No. 0													
Item Name, No. WELDER TEST						RT No. QC-AFI-RT-CPM-002													
Base Material Type CS to CS Plate ☒ PIPE ☐						Diameter (DN) to mm													
Base Material Thickness 18 to 18 mm inch						Weld Reinforcement Thickness 2 mm inch													
Item Type ☒ Welding ☐ Casting						Weld Thickness 20 mm inch													
Welding Process ☒ SMAW ☐ SAW ☐ GTAW ☐ FCAW						GMAW													
Y-Ray Type Sentinel ☒ Ir-192 ☐ Co-60 Serial No. 017428 Curie 17 Ci Source Size 3 x 2 mm						X-Ray Manufacturer Serial No. kV mA Focal Size x mm ☒ Lead Front 0,125 mm ☐ Fluorescent Back 0,125 mm ☒ Source Side ☐ Film Side													
Film Brand ☒ FUJI ☐ AGFA TYPE ☐ XD50 ☒ XD100 ☐ D4 ☐ D7 FILM SIZE ☒ 4x15 Inch ☐ 4x10 Inch						Screen													
IQI Type ☒ ASTM ☐ KS(JIS) ☐ MIL ID No. ☐ 1A ☐ 1C ☒ 1B ☐ 1D						IQI Placement													
Source to Object Distance 336 mm ☒ inch						Exposure Time 3 Minutes 10 Second													
Source to Film Distance 356 mm ☒ inch						Sensitivity 2 %													
Set up Exposure ☒ Single-wall exposure ☐ Double-wall exposure Viewing ☒ Single-wall viewing ☐ Double-wall viewing						Ug 0,51 mm													
Development Temperature 20° C						Developing Time 5 Minutes													
Film Density 2 ~ 4																			
Sketch ☒ A  ☐ B  ☐ C  ☐ D  ☐ E  ☐ F 																			
Type of Indication ① P Porosity ② S Slag Inclusion ③ IP Incomplete Penetration ④ LF Lack of Fusion ⑤ TI Tungsten Inclusion ⑥ UC Undercut ⑦ SD Surface Defect ⑧ RC Root Concavity ⑨ BT Burn-Through ⑩ C Crack ⑪ SI Surface Indicator ⑫ OT Others										RESULT PASS FAIL		Remarks							
Name of Welder AGUS P										ID Welder AP-2607		Position 4G		LIMIT A - B		RESULT PASS		Remarks	
TOTAL FILMS 1										Inspected By RT Level 1 Sugeng		Reviewed By		Reviewed By					
Designation										Signature									
Date 11 April 2026																			
NOTE : ① P : Porosity ② S : Slag Inclusion ③ IP : Incomplete Penetration ④ LF : Lack of Fusion ⑤ TI : Tungsten Inclusion ⑥ UC : Undercut ⑦ SD : Surface Defect ⑧ RC : Root Concavity ⑨ BT : Burn-Through ⑩ C : Crack ⑪ SI : Surface Indicator ⑫ OT : Others																			

Report No.	KIM-RT-HEI-4-2026-015
Examination Date	10 April 2026
Report Date	11 April 2026
Page No.	1 OF 1

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OC-AFI-RT-CPM-002

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	POBOYA 2000 TPD EXPANSION PROJECT	
(CPM Work No.) 14898	Project Document. No.: E2502-000-PRC-006	Revision No. : C
(Vendor Work No.) E2502	Purchase Order No. : 11580	Page 103 of 105

 PT. TITIAN LANCAR ABADI NDT INSPECTION & CERTIFICATION SPECIALIST : NON DESTRUCTIVE (NDT - POST WELD HEAT TREATMENT (PWHT) - PRESSURE TESTING (PST) INSPECTION AND CERTIFICATION - TECHNICAL - NDT EQUIPMENT SUPPLIER Head Office : Kp. Gunung Buntur, RT. 005/ RW. 003, Ds. Banyuwangi, Kec. Pulo Ampel, Kab. Serang, Prov. Banten - INDONESIA 42455 Branch Office : Perumahan Taman Cilegon Cluster Catalonia Blok G7 No. 16 Kota Cilegon, Prov. Banten - INDONESIA 42413 Phone (0254) 781-8985 E-mail: pttitan889@gmail.com		  																	
RADIOGRAPHY TESTING REPORT																			
CLIENT : PT. HANAZONO ENGINEERING INDONESIA CONTRACTORS : - PROJECT : WELDER TEST POBOYA 2000 EXPANSION LOCATION : CILEGON-BANTEN				REPORT NO. : 004/TLA/RT-HEI/XII/2025 DATE : 30 Desember 2025 CONTRACT NO. :				PROCEDURE : ASME SEC IX ACC. CRITERION : ASME SEC IX SOP. NO. : TLA-RT-ASME-003											
PERSONNEL RT Lev 2 / Intepre. : EKO SUBJATMONO RT Lev 1 : DENNIS PPR : SALSABILLA NUUR RADESTYA PUTRI				ESSENTIAL EQUIPMENT ☒ GAMMA RAY MERK : Sentinel TYPE : Delta 880 SERIAL No. : D12788 ☐ X-RAY MERK : - TYPE : - SERIAL No. : -															
ESSENTIAL SOURCE & SURVEY METER ISOTOP : IRIIDIUM 192 SERIAL No. : AS-708 CURIE ACT. : 20 CURIE Ci SOURCE SIZE : 3 x 2 mm F.SPOT SIZE : 3.6 mm SURVEY METER : ND 2000 A S/N : 96785				FILM DATA FILM BRAND : Fuji FILM TYPE : D7 SIZE 4" x 10" : - SHEET SIZE 4" x 15" : 7 SHEET SIZE 7" x 17" : - SHEET Process : SMAW				ACESSORIES IQI TYPE : ☐ ASTM 1A ☒ ASTM 1B PLACE of IQIs : ☐ FILM SIDE ☒ SOURCE SIDE SCREEN TYPE : ☒ LEAD ☐ RADAC SCREEN THICK. : FRONT & REAR : 1.25 mm											
NO.	IDENTIFICATION	JOINT NO.	LOCATION (INCH)	MATERIAL SPECIFICATION	MATERIAL THICKNESS (mm)	PIPE DIA (INCH) / PLATE	WELDER STAMP	DENSITY	SENSITIVITY (WIRE VISIBLE)	INCOMPLETE PENETRATION	INCOMPLETE FUSION	CRACKS	SAND & SLAG INCLUSION	GAS POROSITY	EXCESSIVE PENETRATION	ROOT CONCAVITY	UNDERCUT	RESULT	REMARKS
1	AMAK HUSNI / 3G / A36 30-12-2025		A-B	C/S	12 mm	PLATE	AH-2501	2~4	6					✓				✓	Por 1 mm
2	MISROJI / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	MR-2509	2~4	6				✓	✓				✓	Por 2 mm, SI 4 mm
3	SUPARLAN / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	SP-2506	2~4	6									✓	
4	MARHANI / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	MH-2505	2~4	6				✓	✓				✓	SI 1,5 mm, Por 0,5 mm
5	KOSWARA / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	KW-2412	2~4	6									✓	
6	HAMSINUDIN / 3G / A36 / 30-12-2025		A-B	C/S	18 mm	PLATE	HS-1988	2~4	6					✓				✓	Por 1,5 mm
7	APRIYANTO / 3G / A36 / 30-12-2025		A-B	C/S	12 mm	PLATE	AR-2504	2~4	6		✓			✓				✓	IF, Por / CP
RT Lev 2 / INTERPRETER				QC INSPECTOR				REVIEW BY				CLIENT / OWNER REP.							
 EKO SUBJATMONO DATE: 31-Dec-25				 DATE: 31 Dec 2025				DATE:				DATE:							

INSPECTION REPORT
RADIOGRAPHY TESTING

RADIOGRAPHIC TEST REPORT

RADIOGRAPHIC TEST REPORT																																		
RFI No. : RFN-HEI-ACM-CPM-RT-003					REPORT No. : ACM-RT-WQT-HEI-CPM-VI-2026-001					RT DATE : 17-Jun-26																								
RFI DATE : 17-Jun-26					Client / Principal : PT. CITRA PALU MINERALS					Millie Amperes : -																								
Cont. / Service : PT. HANAZONO ENGINEERING INDONESIA					Material : PIPE					Screens : PB 0.125 mm																								
Project Name : POBOYO 2000 TPD EXPANSION PROJECT					Technic Radiography : DWSI					Density : 2-4																								
Project Location : SITE POBOYA (EAST PALU)					Film To Source : OD					Penetrometer : ASTM 1B																								
Tank No. : -					Radiation Source : 2 X 3 mm					Sensitivity : 2%																								
Applicable Code : ASME IX					KYP / Curies : 25 Ci					FILM TYPE : D7																								
No.	Line No. / ISO No. / Drawing No.	Rev.	Sheet	Joint No.	Material	Schedule	Length (mm)	Thickness (mm)	Welder Stamp	WPS	Welding Process	Tungsten	Root Concavity	Cluster	Porosity	Stage Inclusions	Cracks	Incomplete Fusion	Penetration	Worm Hole	Undercut	Burn Through	Internal Corrosion	Film Location	Result ACC / REP	Remarks								
1	WQT		- of -	2G	CS	-	177	12	M. YUSUF	04-WPS-HEI-MIGAS-26	SMAW										Y			A - B	FAIL	WH								
2	WQT		- of -	3G	CS	-	177	12	M. YUSUF	04-WPS-HEI-MIGAS-26	SMAW													A - B	PASS									
3	WQT		- of -	2G	CS	-	177	12	LAODE	04-WPS-HEI-MIGAS-26	SMAW										Y			A - B	FAIL	WH								
4	WQT		- of -	3G	CS	-	177	12	LAODE	04-WPS-HEI-MIGAS-26	SMAW													A - B	PASS									
5	WQT		- of -	2G	CS	-	177	12	ALPIN	04-WPS-HEI-MIGAS-26	SMAW										Y			A - B	FAIL	WH								
6	WQT		- of -	3G	CS	-	177	12	ALPIN	04-WPS-HEI-MIGAS-26	SMAW													A - B	PASS									
7	WQT		- of -	2G	CS	-	177	12	SYUKUR	04-WPS-HEI-MIGAS-26	SMAW													A - B	PASS									
8	WQT		- of -	3G	CS	-	177	12	SYUKUR	04-WPS-HEI-MIGAS-26	SMAW													A - B	PASS									
TOTAL BY JOINT :			8	JOINT		TOTAL BY FILM :			8	SHEET	4 X 10 :	8	SHEET	4 X 15 :	SHEET		7 X 17 :	SHEET																
Reviewed by RI INDELEVEL II															PT Hanazono Engineering Indonesia										PT Cipta Palu Minerals									
Name : Sinahan					Name : TETRAT															Name : IRFAN														
Date : 17 - JUN - 2026					Date : 17 - JUN - 2026					Date : 17 - JUN - 2026					Date : 17 - JUN - 2026					Date : 17 - JUN - 2026														

POBOYA 2000 TPD EXPANSION PROJECT

(CPM Work No.)
14898

Project Document. No.: E2502-000-PRC-006

Revision No. : C

(Vendor Work No.)
E2502

Purchase Order No. : 11580

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RADIOGRAPHIC TEST REPORT

RFI No. : RFN-HEL-ACM-CPM-RT-003		REPORT No. : ACM-RT-WQT-HEL-CPM-VI-2026-002																							
RFI DATE : 17-Jun-26		RT DATE : 17-Jun-26																							
Client / Principal : PT. CITRA PALU MINERALS		Millie Amperes : -																							
Cont. / Service : PT. HANANZONO ENGINEERING INDONESIA		Screens : PB 0.125 mm																							
Project Name : POBOYO 2000 TPD EXPANSION PROJECT		Density : 2 - 4																							
Project Location : SITE POBOYA (EAST PALU)		Penetrometer : ASTM 1B																							
Tank No. : -		Sensitivity : 2%																							
Applicable Code : ASME IX		FILM TYPE : D7																							
Source Of Radiation : IR 192		PIPE																							
Material : -		PLATE																							
Technique Radiography : -		DWSI																							
Film To Source : -		DWDI																							
Radiation Source : 2 X 3 mm		12 Inch																							
KVP / Curries : 25 Ci		-																							
No.	Line No. / ISO No. / Drawing No.	Rev.	Sheet	Joint No.	Material	Schedule	Length (mm)	Thickness (mm)	Welder Stamp	WPS	Welding Process	Tungsten	Root Concentricity	Porosity	Slag Inclusions	Cracks	Incomplete Fusion	Penetration	Worm Hole	Undercut	Burn Through	Internal Concavity	Film Location	Result ACC / REP	Remarks
1	WQT		- of -	2G	CS	-	177	12	FERNANDO	04-WPS-HEI-MIGAS-26	SAW												A-B	PASS	
2	WQT		- of -	3G	CS	-	177	12	FERNANDO	04-WPS-HEI-MIGAS-26	SAW				✓								A-B	PASS	2mm
3	WQT		- of -	2G	CS	-	177	12	MARTIN	04-WPS-HEI-MIGAS-26	SAW												A-B	PASS	
4	WQT		- of -	3G	CS	-	177	12	MARTIN	04-WPS-HEI-MIGAS-26	SAW												A-B	PASS	
5	WQT		- of -	2G	CS	-	177	12	SD-2608	04-WPS-HEI-MIGAS-26	FCAW												A-B	PASS	
6	WQT		- of -	3G	CS	-	177	12	SD-2608	04-WPS-HEI-MIGAS-26	FCAW												A-B	PASS	
7	WQT		- of -	2G	CS	-	177	12	AP-2607	04-WPS-HEI-MIGAS-26	FCAW												A-B	PASS	
8	WQT		- of -	3G	CS	-	177	12	AP-2607	04-WPS-HEI-MIGAS-26	FCAW												A-B	PASS	
TOTAL BY JOINT : 8		JOINT		TOTAL BY FILM : 8		SHEET		4 X 10 : 8		SHEET		4 X 15 : 8		SHEET		7 X 17 : 8		SHEET		SHEET		SHEET		SHEET	
Reviewed by RINDE LEVEL II																									
PT Hanazono Engineering Indonesia																									
PT Cipta Palu Minerals																									
Name : Sinarhan		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU		Name : TEGU	
Date : -		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026		Date : 17-JUNE-2026	