TECNIMONT Tecnimont S.p.A.	REPSOL REPSOL POLIMEROS SA	4274_CONST ALBA PROJECT–PP AND PEL PLANTS	

MOD-ITP-XL_220 Rev.1	RELEASE OF SPOOLS FROM WORKSHOP	Report n° IP-WSR-P-310-000456_RFI6283_MOD-ITP-XL_220	
		RFI Nr.:	Date :

Unit	-
Plant Area	-
Isometric Number	
Inspection Package Number	**IP-WSR-P-310-000456_RFI6283 - IP Spool Release From Workshop**

The Present Inspection Package contains the following Elements:

2121-VG40E01-1-SP01-01096;1121-PR24032-4-SP08-01128;1121-PR24032-4-SP06-01127;1121-PR21011-4-SP02-01123

Spool No.	Ready for destination to: P: Painting (1) W: Wrapping F: Field	NDE Class	Check List					
			Visual Inspect	Traceability OK (2)	Pending NDE / PMI (Yes/No/NA)	PWHT / HARDNESS (Yes/No/NA)	Inside Cleaning (3) (Yes/No/NA)	Spool Identified (Yes/No/NA)

SGS NoBo 1155 ☐ reviewed by ☐ witnessed by
18/12/2024

GABRIEL BOTEZATU
IWT&IWI-s RO/00011
ISO EN 9712 certification Level 2
VT/PT/MT/RT/UT-TOFD - PA
18/12/24

LEGEND OF CHECK RESULT	☒ Checked & NOT Accepted	☑ Checked & Accepted	N.A. Not Applicable	Y / N Punch List Produced

	Date [DD-MMM-YYYY]	Name	Signature
SUBCONTRACTOR	18-12-2024	Sergio Morales Collado	
CONTRACTOR			
COMPANY	18-12-24	RICCARDO MAURINO	
(Free)			

TECNIMONT Tecnimont S.p.A.	REPSOL REPSOL POLIMEROS SA	4274_CONST ALBA PROJECT–PP AND PEL PLANTS	

MOD-ITP-XL_220 Rev.1	**RELEASE OF SPOOLS FROM WORKSHOP**	Report n° **IP-WSR-P-310-000456_RFI6283_MOD-ITP-XL_220**	
		RFI Nr.:	Date :

Unit	-
Plant Area	-
Isometric Number	
Inspection Package Number	**IP-WSR-P-310-000456_RFI6283 - IP Spool Release From Workshop**

The Present Inspection Package contains the following Elements:

2121-VG40E01-1-SP01-01096;1121-PR24032-4-SP08-01128;1121-PR24032-4-SP06-01127;1121-PR21011-4-SP02-01123

NOTES (*) : 4274-XH-PQ-00000001

1) Painting cycle to be indicated.

2) Refer to: **4274-LZ-PC-00000214** (*COMPANY 4001008GEN-PC-214*) "*Management of Site Metallic Welding Activities*" and **4274-LZ-PC-00000215** (*COMPANY 4001008GEN-PC-215*) "*Procedure for Traceability of Piping Material*"

3) Refer to: **4274-XH-SG-00000003** (*COMPANY 45-L-45-000-2-00-80005*) "*Specification for Piping Fabrication & Erection Activities*" and "*EC L 51.02*" and **4274-XH-PQ-00000001** (*COMPANY 45-L-45-000-2-00-80081*) "*Inspection and Test Plan for Steel Piping Works*"

GABRIEL BOTEZATU
IWT&IWI-s RO/00011
ISO EN 9712 certification Level 2
VT/PT/MT/RT/UT-TOFD - PA

LEGEND OF CHECK RESULT ☒ Checked & NOT Accepted ☑ Checked & Accepted **N.A.** Not Applicable **Y / N** Punch List Produced

	Date [DD-MMM-YYYY]	Name	Signature
SUBCONTRACTOR	18-12-2024	Sergio Morales Collantes	
CONTRACTOR			
COMPANY			
(Free)	18-12-2024	RICCARDO MANCINO	

Tecnimont	Punch List **PUNCH LIST**	IDENTIFICATION CODE SHEET 1 / 1 | DOC.CLASS 1 | ISSUE 01
MECWIDE	**ISO ID:** 2121-VG40E01-1	

No.	Field	Descripton	Date	Completed
		NO COMMENTS		

NOTES AND REMARKS

On behalf of Tecnimont/R
Piping Supervisor
R. Mancino
09.Dec.24

	DATE (dd-Mmm-YYYY)	NAME	SIGNATURE
SUBCONTRACTOR			
CONTRACTOR			
COMPANY			
(Free)			

0

REV	DATE	REVISION DESCRIPTION	DRAWN UP	CHKD UP	APP'D
00A	16-05-2024	ISSUED FOR CONSTRUCTION-SITE REVISION	MW	MW	TM
00	23-12-2022	ISSUED FOR CONSTRUCTION			

LINE DATA

FLUID CODE: VG — LINE NO. 2"-VG-40E01-2E63

PIPING MATERIAL CLASS	INSULATION	WELD CLASS	HEAT TREATMENT	PAINTING CODE	P&ID No.
2E63	N / 0	M	N	NR	19-A-19-000-1-01-00001 sheet 34

Tecnimont — PIPING ISOMETRIC

PLANT: SINES INDUSTRIAL COMPLEX — CLIENT REF: REPSOL POLYMEROS

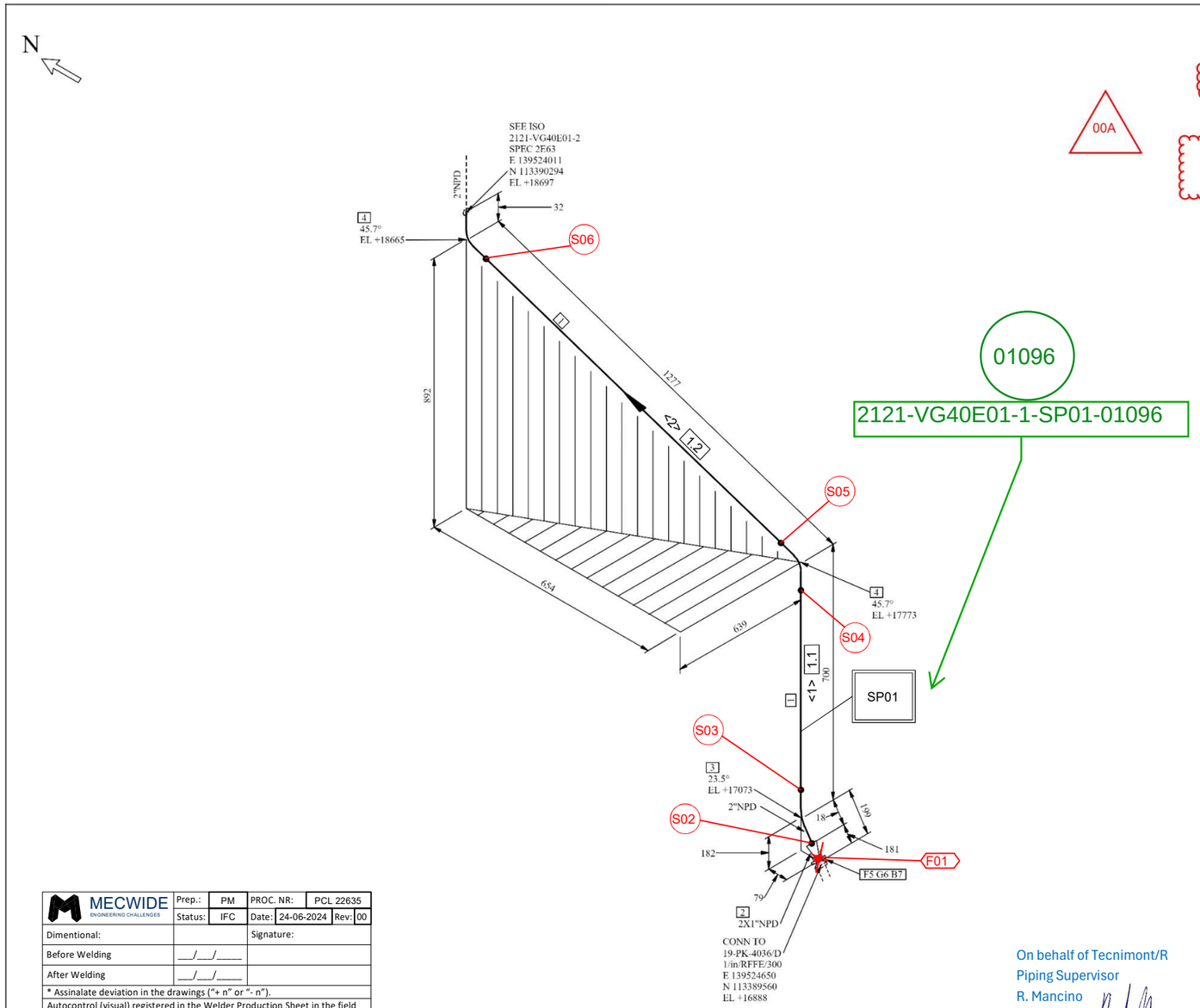
IDENTIFICATION CODE

Job	ECT	Area	N
4274	XHDL	2121	VG40E01

UNIT 19 — SHEET 1 — REV 00A

REFERENCES

PIPING ASSEMBLY DRAWING: 19-L-19-000-2-00-86197 sheet 5	PIPING SUPPORT SPECIFICATION	PIPING STANDARD SUPPORT SUMMARY	
PIPING ISOMETRIC LIST	PIPING TYPICAL INSTALLATIONS	WELDING SPECIFICATION	



On behalf of Tecnimont/R
Piping Supervisor
R. Mancino
09.Dec.24

BILL OF MATERIAL

PT NO	COMPONENT DESCRIPTION	N.S. (IN)	ITEM CODE	QTY	HOLD STATUS
PIPE					
1	PIPE - A312-TP304/304L DUAL GR BUTTWELDED SMLS INTERNAL SURFACE ROUGHNESS < OR = 125 RMS	2	I3364292 ~~I146219~~	1.9 M	
FITTINGS					
2	CONCENTRIC SWAGE MSS SP-95 - A403-WP304/304L DG BE PE SMLS SCH1-STD SCH2-40S R21FQL2FVZPN <CSWB04DGR14151201> (L-CSW21).	2X1	I64580315	1	
3	45 LR ELBOW A403-WP304/304L DG BE SMLS ASME B16.9	2	~~I213655~~ I2259141	1	
4	90 LR ELBOW A403-WP304/304L DG BE SMLS ASME B16.9	2	I2259137 ~~I213640~~	2	
FLANGES					
5	SW FLANGE ASME B16.5 300# A182-F316/316L DUAL GR RFFE SWE 125 - 250 AARH F02CFL1MB105 S-40S <SWFB34DR35140S> (L-SWF37).	1	I2500941	1	
GASKETS					
6	SPIRAL WOUND GASKET ASME B16.20 300# RFTBE 304/PTFE SS 304 SS 304 ASME B16.5 G03GFP1IG04 <N/A> (N/A)	1	I219568	1	
BOLTS					
7	STUD BOLTS&NUTS ASME B18.31.2/ B18.2.2 A320-L7/A194-7 INCH SIZE I01OB5301 <SB2R55G5/831/4> - 2 NUTS PER BOLT - 80 mm Length	5/8	I55705037	4	

CUT LIST

PIECE NO	LENGTH (MM)	SIZE (IN)
<1>	646	2"
<2>	1209	2"

WELD LIST

WELD NO	WELD CAT.	SIZE (IN)	WELD TYPE
F01	F	1"	SW
S02	S	2"	BW
S03	S	2"	BW
S04	S	2"	BW
S05	S	2"	BW
S06	S	2"	BW

BOLT LIST

BOLT NO	FLANGE SIZE(IN)	SIZE (IN)	LENGTH (MM)
BJ01	1"	5/8"	80

INCH METER

PIPE NS (IN)	CL LENGTH (M)
2	2.0
1	0.2

ISOMETRIC NO. 4274-XH-DL-2121-VG40E01-1-IS00A

Sergio Morales

Date: 03-12-24

Authorized for Construction
Autorizado para la Construcción

Date / Fecha	Signature / Firma
16-06-24	M. PECILE, TCM Field Engineering Manager

MECWIDE ENGINEERING CHALLENGES	Prep.:	PM	PROC. NR:	PCL 22635	
	Status:	IFC	Date:	24-06-2024	Rev: 00
Dimentional:			Signature:		
Before Welding	___/___/____				
After Welding	___/___/____				
* Assinalate deviation in the drawings ("+ n" or "- n").					
Autocontrol (visual) registered in the Welder Production Sheet in the field of observations (Autocontrolo OK)					

REMARKS FOR MECHANICAL SUBCONTRACTOR:

1) LINES 1.1/2" AND SMALLER SHALL BE SUPPORTED IN FIELD IF NOT OTHERWISE INDICATED.
2) ALL DIMENSION AND PROPER CONFIGURATION FOR LINES NPS 1.1/2" AND SMALLER SHALL BE CHECKED IN FIELD BEFORE CONSTRUCTION.
3) FOR THE COMPONENTS MARKED AS FIELD WELDED WITH THIS SYMBOL ✕ , ONE WELD FOR ADJUSTMENT OF IN LINE COMPONENT MUST BE LEFT
4) FOR EXTRA PIPE LENGTH REFER TO 4274-LZ-PC-00000603.
5) GUSSETING TO BE IMPLEMENTED BY MECHANICAL SUBCONTRACTOR AS PER 45-L-45-000-2-00-80004 / 4274-XH-SG-00000002.
6) CROSSING BETWEEN WELDS ON PIPELINE SHALL NOT BE ADMITTED.
7) IN CASE OF DISCREPANCIES BETWEEN DATA SHOWN ON ISO AND IN LINE LIST (AS APPLICABLE, DATA SHOWN IN LINE LIST GOVERN.
8) ACTUAL CUT LENGTH OF PIPE AND FIELD WELDS SHALL BE DEFINED BY MECHANICAL SUBCONTRACTOR (REF.TO 4274-LZ-PC-00000603).
9) WHERE EARTHING BONDING IS REQUIRED, MECHANICAL SUBCONTRACTOR TO PERFORM IT BASED ON DOC. 45-P-000-7-06-00902/ 4274 -NN-DW-00000002 AND ASSEMBLY NO FEA005 AND FE019.

SUPPORTS LEGEND: [1] DENOTES PARTS LIST NO — PIPE — SUPPORT — A=RESTING SUPPORT G=GUIDE F=AXIAL STOP B=ANCHOR M=SPRING S=TEFLON PAD
WHERE [A] WITHOUT NUMBERING IS INDICATED, THIS MEANS THAT THERE IS A REST DIRECTLY ON STEEL STRUCTURE.

APPROVED FOR CONSTRUCTION

Signature for construction is shown on Iso list of relevant CWA

REV.	DESCRIPTION	DATE	DRW. BY	CHECK BY	APPR. BY	APPR. CLIENT	STRESS CALC. Nº
00A	ISSUED FOR CONSTRUCTION - SITE REVISON	16-05-2024	F.CARRA'	M.PECILE	M.PECILE		-
00	ISSUED FOR CONSTRUCTION	23-DEC-22	U.CHAVAN	P.VAZE	G.PAGANONI		P.& ID 19-A-19-000-1-01-00001 sheet 34
							LINE LIST Nº 19-L-19-000-2-00-80602
							PIPE LAYOUT Nº 19-L-19-000-2-00-86197 sheet 5

TITLE

ISOMETRIC DRAWING LINE

2"-VG-40E01-2E63

PIPE MATERIAL	CS, low temperature
HEAT TREATMENT (PWHT)	N
PAINTING SCHEME (3)	NR
PIPING CLASS	2E63
WELDING CLASS (4)	M
PED CATEGORY	II
INSULATION CODE / THK. (mm)	N 0

NOTES:
1. FOR TECHNICAL DETAILS SEE LINE LIST.
2. FOR VENT, DRAIN OR INSTRUMENT CONNECTION DETAILS SEE 45-L-45-000-2-00-80102.
3. WELDING ACCORDING TO 45-L-45-000-2-00-80021.
4. PAINTING ACCORDING TO 45-A-45-000-1-00-20160.
5. CODE SHOWN IN BOM BETWEEN "<" & ">" DENOTES REPSOL UNICODE. "<N/A>" MEANS UNICODE IS "NOT AVAILABLE".

CONTRACTOR:	CONTRACTOR DRAWING NUMBER:	PROJECT:
Tecnimont	4274-XH-DL-2121VG40E01-1	4001008

LOW LINEAL DENSITY POLYETHILENE (PEL) AND POLYPROPYLENE (PP) PLANTS FOR PROJECT - ALBA PROJECT

CLIENT / COMPLEX: REPSOL POLYMEROS/ SINES INDUSTRIAL COMPLEX

ANNEX	SPEC.	DRAWING NUMBER	REV.
19	L	19-000-2-02-00001 sheet 2121VG40E01-1	0A

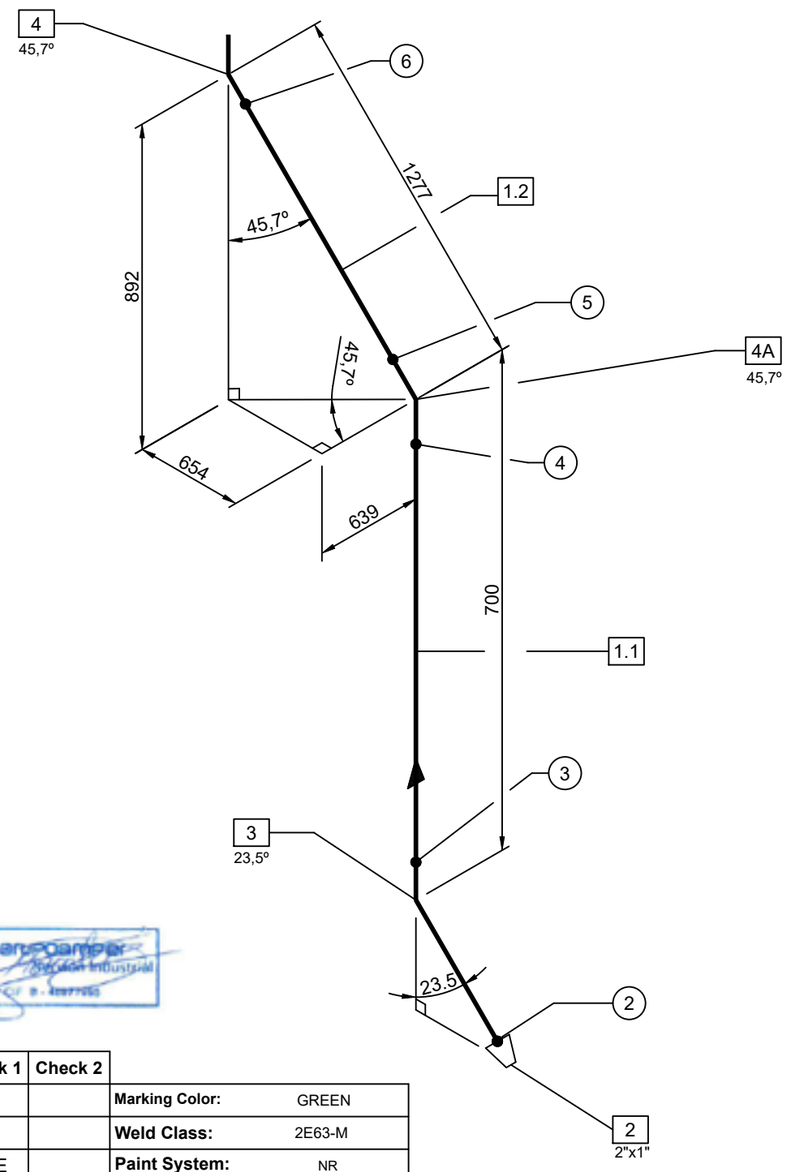
FILENAME: 19-000-2-02-00001 sheet 2121VG40E01-1.dwg

EXTR. DATE: 21-12-2022 13:41:10 — STREAM NO.:4554 — STREAM REV. NO.: 7 — REV. CAUSE ID:

THIS DOCUMENT BELONGS TO REPSOL. IT CAN NOT BE COPIED, REPRODUCED AND/OR USED WITHOUT PREVIOUS AUTHORIZATION OF REPSOL COMPUTERIZED DRAWING (HANDWRITING STRICTLY FORBIDDEN).

Notes.
- LINES 1.1/2" AND SMALLER SHALL BE SUPPORTED IN FIELD IF NOT OTHERWISE INDICATED
- FOR THE COMPONENT MARKED AS FIELD WELDED,ONE WELDED FOR ADJUSTMENT OF INLINE COMPONENT MUST BE LEFT
- ✕ FIELD WELD SYMBOL FOR ADJUSTMENT OF IN-LINE COMPONENT WHERE MARKED
- ALL DIMENSION AND PROPER CONFIGURATION FOR LINES NPS 1.1/2" AND SMALLER SHALL BE CHECKED IN FIELD BEFORE CONSTRUCTION
- GUSSETING TO BE IMPLEMENTED BY MECHANICAL SUBCONTRACTOR AS PER SPECIFICATION 4048-XH-SG-00000000004
- FOR LINE DATA AND TESTING CONDITIONS REFER TO LINE LIST 4048-XH-LL-10-0000-00001

N



BILL OF MATERIAL

PIPE

ITEM	LONGUEUR	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE
1.2	1,209	2"	S-40S	PIPE - A312-TP304/304L DUAL GR BUTTWELDED SMLS INTERNAL SURFACE ROUGHNESS <= 125 RMS BExBE	I3364292
1.1	0,646	2"	S-40S	PIPE - A312-TP304/304L DUAL GR BUTTWELDED SMLS INTERNAL SURFACE ROUGHNESS <= 125 RMS BExBE	I3364292

FITTINGS

ITEM	QT	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE
2	1	2"x1"	S-40S	CONCENTRIC SWAGE MSS SP-95-A403-WP304/304L DG BE PE SMLS	I64580315
3	1	2"	S-40S	45LR ELBOW A403-WP304/304L DG BE SMLS ASME B16.9	I2259141
4	1	2"	S-40S	90LR ELBOW A403-WP304/304L DG BE SMLS ASME B16.9	I2259137
4A	1	2"	S-40S	90LR ELBOW A403-WP304/304L DG BE SMLS ASME B16.9	I2259137

Sergio Morales

Date: 03-12-24

Rev.	Date	DRW	Check 1	Check 2		
					Marking Color:	GREEN
					Weld Class:	2E63-M
00A	10/09/2024	RHA	OPE		Paint System:	NR

On behalf of Tecnimont/R
Piping Supervisor
R. Mancino
09.Dec.24

Weld Map Sticker

P2308S 01096

2121-VG40E01-1-SP01-01096

boccard
Alliance for success
Boccard Portugal, Lda.

Construction Code:	ASME B31.3	% RT -	YES	% UT -	NO	Hydro:	NO	ID Cleaning:	YES	Piece Mark	Ref. Drawing	Job #	Spool #	Project
Acc Criteria:	ASME B31.3	% PT -	YES	% FE -	NO	PWHT:	NO	OD Cleaning:	YES	2121-VG40E01-1-SP01-01096	2121-VG40E01-1	P2308S	01096	REPSOL PROJETO ALBA NERVION
Metal Tag:	YES	% MT -	NO	% PMI -	YES	BHN% -	NO	Tolerances:	ASME B31.3					

Spool Material List

Contract : P2308 **Client** NERVION

Job : P2308S **Project** ALBA

Job	Spool	Piece Mark	Drawing	Rev
P2308S	01096	2121-VG40E01-1-SP01-01096	2121-VG40E01-1	00A

Item No / Tag No / ID No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No / MTR No / Folder No	Unit Weight Kgs	Weight Kgs
1.1 40393	,646	2.0000	S40S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	J3120640 0392	5,44	3,51
1.2 40393	1,209	2.0000	S40S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	A-6500 0001	5,44	6,58
3 42791	1	2.0000	S40S	0.0000	NA	45 ELL, SEAMLESS, A403-WP304L	S1030418 0015	0,34	0,34
4 42967	1	2.0000	S40S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	S2092514 0183	0,68	0,68
4A 42967	1	2.0000	S40S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	S2092514 0183	0,68	0,68
2 43607	1	2.0000	S40S	1.0000	S40S	CONC SWAGE NIPPLE, LEB-SEP, A403-WP304L	N220606AV04 0336	1,97	1,97

On behalf of Tecnimont/R
Piping Supervisor
R. Mancino
09.Dec.24

Number of Items : **6** Total Weight : **13,76**

	QA	Client
Signature	QA / QC	Sergio Morales Date: 03-12-24
Date	2024-11-25 15:26:42	

INSPECTION CERTIFICATE ACC. TO EN 10204/3.1

Arvind Pipes & Fittings Industries Pvt.Ltd.

Certified manufacturer to PED 14/68, AD W0. Certificate No.01 202 IND/Q-19 0019

Plot No: 657, G.I.D.C, Waghodia – 391 760, Dist: Baroda, India

Certificate No.: APF/2022-2023/QC/ 780

Client	Soluzioni Piping Srl.	Purchase Order No.	354/355
Product	COLD FINISHED SEAMLESS STAINLESS STEEL PIPES WITH PLAIN ENDS IN RANDOM LENGTHS 5 - 7 M	Purchase Order Date	16/07/2021
Specification	DIN EN 10216-5 TC1, ANSI B 36.19 ,ASTM/ASME A/SA 312, W2, W10, ASME CODE SEC II PART A 2019 ed , NACE MR-0175 / ISO 15156-3, NACE MR-0103, Tol. DIN EN ISO 1127 D3/T3, ASTM A 999, BV 07-NR-20/30	Purchase Order Article Number	TU4L60.33 X 3.91SS
Quality Assurance Plan Number	-----	Size	60.33 MM OD X 3.91 MM THK
Quality Assurance Plan Date	-----	Grade	1.4301/1.4307-304 / 304L

Supply Condition	Heat No.	Surface Finish	Dimensional Check	Ordered quantity (m)	Total Quantity pcs	Total Length m	Total Weight kg
Solution Annealed CFD, Pickled, Passivated	J3120640	Satisfactory	Satisfactory	1000	180	945.95	4774.00

Heat Treatment		Chemical Composition - (%)								Tolerances	
Annealed and quenched in water 1040°C - 1120°C	Element	C	Mn	P	S	Si	Cr	Ni	N	Outside Diameter	Wall Thickness
	EN 10216-5	≤ 0.03	≤ 2.0	0.040 Max	0.015 Max	≤ 1.00	17.50-19.50	8.00-10.00	≤ 0.11		
	ASTM - A -312	≤ 0.035	≤ 2.0	0.045 Max	0.030 Max	≤ 1.00	18.00-20.00	8.00-13.00	---		
Ladle Analysis		0.021	1.21	0.031	0.002	0.37	18.17	8.03	---	+/- 0.75 mm	+/- 10%
Product Analysis		0.019	1.23	0.029	0.002	0.39	18.16	8.04	0.047		

Mechanical Properties

Testing Item	Tensile Strength		Yield Strength		Elongation	Flattening Test	Drift Expanding Test
		Rm	Rp0.2	Rp1.0	A50(%)		
		Mpa	Mpa				
Requirements	EN 10216-5	500-700	195 Min	230 Min	40 Min	EN ISO 8492	EN ISO 8493
	ASTM - A -312	515 Min.	205 Min.		35 Min.	ASTM A370	
Testing Results	EN 10216-5	576.63	227.16	248.07	56.08	Satisfactory	Satisfactory
	ASTM - A -312	573.41	245.67		54.10		

Grain Size	Intergranular Corrosion Test	Hardness	Eddy-current Testing 100%	Ultrasonic Test 100%		Charpy V ISO-EN-10045-1 ≥ 100 Joule 20° C	Hydrostatic Test		Positive Material Identification EN 10216-5 100%
ASTM E112 ≤ 7	EN ISO 3651-2 A ASTM A262 Practice E	NACE MR-0175 / ISO 15156-3,NACE MR-0103 ≤22HRC (90 HRB Max.) (Avg. of 3 reading)	EN ISO 10893-1 ASTM E426	EN 10246-6 U2	EN 10246-7 U2		Mpa / PSI	Hold Time	
5 TO 7	Satisfactory	73- 76 HRB (0 HRC)	Satisfactory	---	---	------	13 / 1900	10 Sec (Min)	Satisfactory

Remarks :

1. Mercury free
2. No weld repair performed for base material and tube -
3. 100% hydro test carried out by APFIPL : found satisfactory.
4. 100% visual & dimensional inspection carried out by APFIPL: found satisfactory.
5. 100% PMI carried out by APFIPL : found satisfactory.
6. Chemical Test carried out by APFIPL : found satisfactory.
7. Mechanical Test (Tensile, Flattening, Drift expansion, Hardness) carried out by APFIPL : found satisfactory.
8. Corrosion Test – IGC Pr. "E" carried out by APFIPL: found satisfactory
9. Metallurgical Test – Grain Size - carried out by APFIPL : found satisfactory.
10. Pickling & Passivation carried out by APFIPL & found satisfactory.
11. Eddy-current Testing carried out by APFIPL & found satisfactory.
12. **Marking :** LOGO - ARVIND PIPES - 60.33 MM X 3.91 MM THK X 5 TO 7 MTRS. LONG S.S. SEAMLESS PIPE ,ASTM / ASME / A - SA - 312 , EN 10216-5 - 1.4301 / 1.4307 / TP304 / 304L- HEAT NO: J3120640 -TC1-CFD- D3 / T3,Sec II Part A 2019 ed NACE-MR-0175 / ISO 15156-3, NACE MR -0103 - MERKBLATT HTP 1900 PSI - PMI TESTED - INDIA

Date:26/11/2022

ARVIND PIPES & FITTINGS INDUSTRIES PVT. LTD.
(QA/QC HEAD)

ITEM 1 DESCRIZIONE TUBO SS RICOTTO INOX A 312TP304L mm. 60,32 x 3,91 Sch 40S Doc. N° 2024-BDDTC-0002342 Data 13.06.2024 Rif. Vs. Ordine 7500122623 COLATA J3120640 QTA 62.220 PANTALONE SRL TECNIMONT SPA

TTP TUBACEX GROUP

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TTP/MTC-2023/0924	Rev: 00
Page: 1 of 6	

Created on:	Modified on:
Date: 22.06.2023	---

TUBACEX TUBES AND PIPES PVT LTD.

Plot No. 131/1, Umbergaon – Sanjan Road, Umbergaon – 396171

Dist. Valsad, Gujarat, INDIA

TL: +91 260 6616200, +91 260 6616240

E-MAIL: quality@tubacexindia.com

CUSTOMER DESCRIPTION

CLIENT SOLD TO	**CLIENT SHIP TO**
M/S. TUBACEX SERVICE SOLUTIONS, S.A.U.	

CLIENT ORDER. 508342 DTD: 17.11.2022 **TECHNIMONT PO NO.:** 7500107816

SALES ORDER: 1202171 **PROJECT:** ALBA PROJECT **END USER:** REPSOL

MATERIAL: SEAML. STAINL. STEEL PIPES.
COLD FINISHED & HEAT-TREATED. PICKLED & PASSIVATED ACC. TO ASTM A380.
GRADE: TP 304/304L
STANDARD:
ASTM A 312/A 312M-21(ED.2022) PED 2014/68/EU
ASME B16.25 FIG.4
CUSTOMER SPECIFICATION:
4274-XH-SS-00000001, REV.01
COLOR CODE: 4274-XZ-SG-00000006
PMA:4274-XH-SS-0000100
ITP: TTP/QAP/2171/0329, REV.05, DT.05.06.2023
PROCEDURE NO:
TSS SAU-ALBA PROJECT/PSP/01 REV.00 PROCEDURE FOR PACKING/STORAGE AND PRESERVATION OF PRODUCT
TSS SAU-ALBA PROJECT/LSH/01 REV.00 PROCEDURE FOR LOADING/SHIPPING & HANDLING
CHECK ANALYSIS
HYDROTEST: ASTM A999/A999M ASTM A312
TOLERANCE: A312: A999
RANDOM LENGTHS: 9-11.8 M / 5-9 M / 5-7 M / BEVELLED ENDS B16.25 FIG.4
DIMENSIONS: SR NO.1 - 60.33 MM OD X 3.91 MM THK - 2" X SCH 40S
DIMENSIONS: SR NO.2 - 88.90 MM OD X 3.05 MM THK - 3" X SCH 10S

BUREAU VERITAS (I) PRIVATE LIMITED SURVEYOR SURAT
22.06.2023. Dhwani Patel.

iti INTERNATIONAL Bhavesh Gadhvi

SAFEGUARDING LIFE, PROPERTY AND THE ENVIRONMENT. DNV 1864 INSPECTION 52-028

TUBACEX TUBES AND PIPES PVT LTD.

SUBODH PATRA
DY. MANAGER (QA/QC)

TUBES AND PIPES PVT. LTD. TUBACEX GROUP

Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with above standards and specifications and satisfies orders requirements. In case the owner of the certificate would release as a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or TUBACEX, not allowed use. Any forgery or falsification of this certificate shall be legally prosecuted.

TTP
TUBACEX GROUP

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

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Date: 22.06.2023	---

DIMENSIONS: SR NO.3 - 114.30 MM OD X 6.02 MM THK - 4" X SCH 40S
DIMENSIONS: SR NO.4 - 168.28 MM OD X 3.40 MM THK - 6" X SCH 10S
DIMENSIONS: SR NO.5 - 21.34 MM OD X 2.77 MM THK - 1/2" X SCH 40S
DIMENSIONS: SR NO.6 - 21.34 MM OD X 3.73 MM THK - 1/2" X SCH 80S
DIMENSIONS: SR NO.7 - 26.67 MM OD X 5.56 MM THK - 3/4" X SCH 160S
DIMENSIONS: SR NO.8 - 48.26 MM OD X 3.68 MM THK - 1.1/2" X SCH 40S
DIMENSIONS: SR NO.9 - 48.26 MM OD X 5.08 MM THK - 1.1/2" X SCH 80S

Sr. No.	Sales Item	Tr item no	Ident no	Heat No	Pieces	Weight	Total Lgth	Un Lgth
1	70	7	I3364292	A-6500	32	-	314.015	9000-11800 MM
2	90	9	I3364303	A-6630	2	-	23.300	9000-11800 MM
3	120	12	I3364294	23L0389	16	-	84.890	5000-7000 MM
3	120	12	I3364294	MT100077	4	-	24.730	5000-7000 MM
4	130	13	I3364305	MT100081	5	-	32.060	5000-7000 MM
5	180	18	I2257937	A-6500	50	-	568.800	9000-11800 MM
5	180	18	I2257937	235073	7	-	74.560	9000-11800 MM
6	190	19	I2257955	A-6500	95	-	1065.305	9000-11800 MM
7	200	20	I2514552	A-6500	9	-	96.500	9000-11800 MM
8	260	26	I2257941	A-6500	6	-	66.540	9000-11800 MM
9	270	27	I2257959	A-6500	55	-	96.500	9000-11800 MM

RAW MATERIAL

Sr. No.	Heat No:	Method
1,5,6,7,8, 9	A-6500	EF-AOD-CCM
2	A-6630	EF-AOD-CCM
3	23L0389	EIF-AOD-CCM
3	MT100077	Electric furnace + AOD
4	MT100081	Electric furnace + AOD
5	235073	IF/AOD/CCP(EMS)/HR

iti INTERNATIONAL Bhavesh Gadhvi

DNV SAFEGUARDING LIFE, PROPERTY AND THE ENVIRONMENT 1864 INSPECTION 52-028

BUREAU VERITAS (I) PRIVATE LIMITED SURVEYOR AT SURAT

22.06.2023

TUBACEX TUBES AND PIPES PVT LTD.

TUBES AND PIPES PVT. LTD. TUBACEX GROUP

SUBODH PATRA
DY. MANAGER (QA/QC)

Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD

TTP TUBACEX GROUP

INSPECTION CERTIFICATE
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Date: 22.06.2023	---

CHEMICAL COMPOSITION (%) *L: Ladle C: Products

Sr. No.	*	Heat	C	Mn	Si	P	S	Ni	Cr
Req. Max.			0.035	2.00	1.00	0.045	0.030	11.00	20.00
Req. Min.				-	-	-	-	8.00	18.00
1	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
1	C	A-6500	0.028	1.85	0.43	0.036	0.013	8.08	18.22
2	L	A-6630	0.021	1.84	0.37	0.039	0.011	8.06	18.12
2	C	A-6630	0.023	1.86	0.38	0.038	0.012	8.09	18.21
3	L	23L0389	0.026	1.86	0.41	0.038	0.009	8.15	18.20
3	C	23L0389	0.028	1.87	0.42	0.039	0.011	8.17	18.28
3	L	MT100077	0.029	1.85	0.43	0.038	0.005	8.05	18.20
3	C	MT100077	0.028	1.87	0.45	0.036	0.007	8.06	18.26
4	L	MT100081	0.026	1.87	0.26	0.038	0.010	8.10	18.14
4	C	MT100081	0.028	1.26	0.25	0.038	0.014	8.09	18.18
5	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
5	C	A-6500	0.029	1.82	0.39	0.037	0.012	8.06	18.23
5	L	235073	0.021	1.80	0.27	0.038	0.005	8.08	18.13
5	C	235073	0.023	1.82	0.28	0.037	0.006	8.09	18.20
6	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
6	C	A-6500	0.028	1.86	0.43	0.035	0.013	8.07	18.24
7	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
7	C	A-6500	0.028	1.86	0.43	0.039	0.013	8.07	18.23
8	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
8	C	A-6500	0.026	1.86	0.43	0.036	0.014	8.06	18.20
9	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
9	C	A-6500	0.029	1.83	0.42	0.037	0.010	8.06	18.21

HEAT TREATMENT

SOLUTION ANNEALED AT MINIMUM 1040°C, FOLLOWED BY WATER QUENCHED.

22-06-2023.
Dhanvil Patel.

iti INTERNATIONAL
Bhavesh Gadhvi

22/6/23

SAFEGUARDING LIFE, PROPERTY AND THE ENVIRONMENT · DNV 1864
INSPECTION
52-028

TUBACEX TUBES AND PIPES PVT LTD.

TUBACEX TUBES AND PIPES PVT. LTD.

SUBODH PATRA
DY. MANAGER (QA/QC)

Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with above standards and specifications and satisfies orders requirements. In case the owner of the certificate would release as a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or TUBACEX, not allowed use. Any forgery or falsification of this certificate shall be legally prosecuted.

TTP TUBACEX GROUP

INSPECTION CERTIFICATE
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TENSILE TEST: ACCORDING TO ASTM A 370

Sr. No.	Heat No:	Sample	Temp	YS	UTS	A2"	Type	Spc. Type	Spc. Dim	
			°C	*MPa*	*MPa*	*%*			*Mm*	*Mm*
Req. max.			---	---	---	---	---	---	WIDTH	THK
Req. Min.			---	205	515	35	---	---		
1	A-6500	1	RT	320.57	615.10	56.20	L	R	25.40	3.93
2	A-6630	1	RT	299.78	630.78	57.60	L	R	25.39	3.04
3	23L0389	1	RT	315.23	610.26	61.20	L	R	38.13	6.05
3	MT100077	1	RT	320.24	615.23	62.00	L	R	38.10	6.06
4	MT100081	1	RT	325.33	622.46	62.10	L	R	38.15	3.43
5	A-6500	1	RT	295.90	601.00	56.80	L	F	21.33	2.80
5	235073	1	RT	311.84	617.60	56.00	L	F	21.28	2.77
6	A-6500	1	RT	296.69	599.17	64.00	L	F	21.31	3.75
7	A-6500	1	RT	295.02	570.49	60.00	L	F	26.71	5.53
8	A-6500	1	RT	316.83	588.68	60.00	L	R	25.38	3.67
9	A-6500	1	RT	286.09	610.48	57.20	L	R	25.43	5.05

HARDNESS TEST: ACCORDING TO ASTM A 370

Sr. No.	Heat No:	Sample	HRB1	HRB2
	Req. Max		---	---
	Req. Min		---	---
1	A-6500	1	77	79
2	A-6630	1	74	76
3	23L0389	1	76	79

22.06.23

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3	MT100077	1	77	80
4	MT100081	1	76	78
5	A-6500	1	76	79
5	235073	1	76	80
6	A-6500	1	77	80
7	A-6500	1	76	81
8	A-6500	1	79	80
9	A-6500	1	77	80

METALLURGICAL TESTS

INTERGRANULAR CORROSION TEST CARRIED OUT PER EACH HEAT ACC. ASTM A 262 PRACTICE "E". NO CRACKS OR IGC FISSURES OBSERVED ON BENT SPECIMEN AT 20X AND MICROSTRUCTURE FOUND NO GARIN DROPPING AT 250X MAGNIFICATION OBSERVED: FOUND SATISFACTORY.

NON-DESTRUCTIVE TESTS

POSITIVE MATERIAL IDENTIFICATION TEST CARRIED OUT BY "X-RAY-FLUORESCENCE-ANALYZER"(TARGET ELEMENTS Cr & Ni) BY M/s TTP & 'SW' WITNESSED BY M/s ITI, M/s DNV, M/s BV: SATISFACTORY.

HYDROSTATIC PRESSURE TEST CARRIED OUT ON EACH PIPE FOR DURATION OF 5 SEC AND NO LEAKAGE OR PRESSURE DROP OBSERVED: SATISFACTORY

Sr. No.	Sales Item	Hydro Pressure (Psig)	Remarks
1	70	2000	SATISFACTORY
2	90	1100	SATISFACTORY
3	120	1600	SATISFACTORY
4	130	650	SATISFACTORY
5	180	2500	SATISFACTORY
6	190	2500	SATISFACTORY
7	200	2500	SATISFACTORY
8	260	2300	SATISFACTORY
9	270	2500	SATISFACTORY

DIMENSIONAL AND VISUAL CHECKING ON EACH PIPE FOR ALL SIZES BY M/s TTP & 'SW' WITNESSED BY M/s ITI, M/s DNV, M/s BV: SATISFACTORY.

TECHNOLOGICAL TESTS

FLATTENING TEST: SATISFACTORY

PURSAU VERITAS (I) PRIVATE LIMITED SURVEYOR AT SURAT

22-06-2023

iti INTERNATIONAL Bhavesh Gadhvi

22/6/23

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TUBACEX TUBES AND PIPES PVT LTD.

SUBODH PATRA
DY. MANAGER (QA/QC)

TUBES AND PIPES PVT. LTD. TUBACEX GROUP

Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD

We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with above standards and specifications and satisfies orders requirements. In case the owner of the certificate would release as a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or TUBACEX, not allowed use. Any forgery or falsification of this certificate shall be legally prosecuted.

TTP
TUBACEX GROUP

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

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MARKING

TTP.TUBACEX GROUP/COLD FINISHED SEAMLESS PIPE /---" (---MM OD) x SCH--- (---MM THK) X --- MTR LONG / ASTM A 312 / GRADE--- / HEAT NO.--- / IDENT CODE…..... / ITEM NO.---/B.NO. --- / PMIV / TTP-2

COLOR CODE:

2 BLACK (RAL 9017) LONGITUDINAL COLOR BAND WITH 15-20MM WIDTH GAP BETWEEN BOTH BAND 10MM.

REMARKS

NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT HAVE BEEN USED ALONG MANUFACTURING AND INSPECTION PROCESS.

NO WELDING OR WELD REPAIRS WERE MADE.

WE HEREBY CONFORM THAT WE ARE CERTIFIED BY TUV RHEINLAND INDUSTRIE SERVICE GmbH AS NOTIFIED BODY (0035) TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN ACCORDANCE TO PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU ANNEX 1 POINT 4.3 & AD 2000-W0.PED 2014/68/EU CERTIFICATE NO.: 01 202 IND/Q-15-0036 VALID UNTILL DECEMBER 31, 2024.

MATERIAL CHARACTERISTIC COMPLY WITH POINT 7.5 OF ANNEX 1 TO PED BY HAVING AN ELONGATION AFTER

MATERIAL IS FREE OF RADIATION CONTAMINATION.

10% WITNESSED PIPES SINGLE ELECTRO ETCHED NEAR MILL MARKING " " FOR IDENTIFICATION BY M/s DNV & " " FOR IDENTIFICATION M/s BV.

ABBREVIATIONS

YS-YIELD STRESS, UTS-ULTIMATE TENSILE STRESS, A2"-GAUGE LENGTH (2 INCH), A5-GAUGE LENGTH 5.65√S°, RT-ROOM TEMPERATURE, T-TRANSVERSE, L-LONGITUDINAL, R-REDUCED SECTION (STRIP), F-FULL SECTION, R/L-RANDOM LENGTH, SPC-SPECIEMEN, M-METER, TTP - TUBACEX TUBES AND PIPES PVT LTD. H-HARDNESS

BUREAU VERITAS (I) PRIVATE LIMITED SURVEYOR AT SURAT

22.06.2023

iti INTERNATIONAL Bhavesh Gadhvi

DNV 1864 SAFEGUARDING LIFE, PROPERTY AND THE ENVIRONMENT INSPECTION 52-028

TUBACEX TUBES AND PIPES PVT LTD.

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DY. MANAGER (QA/QC)

TUBACEX TUBES AND PIPES PVT LTD

Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD

CENA ITALY

VIRGILIO CENA & FIGLI S.p.A.

www.cenafittings.com
Via G. Oberdan, 39 – 25128 – BRESCIA (ITALY)

QMS approved acc.to ISO 9001:2015
LRQA Cert. N° 10082605 according to
Annex I, Chapt. 4.3 PED 2014/68/EU

Issued in agreement with TÜV SÜD Industrie
Service GmbH (05.1992) and approved according
to PED, annex I, para 4.3 by Notified body 0036,
cert. n. DGR-QS-W 024/2002/MUC-001

INSPECTION CERTIFICATE EN 10204/3.1

CE23002460_3.1_01

TECNIMONT SPA
Via Gaetano De Castillia 6A
20124 MILANO, (MI)
Italia

Customer Order	7500107591 25.10.22-Proj.4274 Sines	Your Item Ref. 262 - I2259141
Article/Specification	Seamless elbows WP304/304L-S ASTM/ASME A/SA-403-17 ASME B16.9/18	
Heat Treatment	Cold formed - Solution annealed at 1050°Cx1,5'/mm	Brand of manufacturer **CENA**
Marking	IT - CENA - SA 403 WP304/304L-S - Heat Nr - Od. x Th.	

Extent of material delivered	Our pos.	Quantity	Article
	OV22001749/2560000	**NR 10**	**LR 45° 2" 40s**

Heat	Marking code	Certificate	Supplier
S1030418	**S1030418**	21-03-018 *	HUADI STEEL GROUP

Raw material: Seamless pipe ASTM/ASME A/SA 312 Gr.P304

Results of chemical analysis % — *Ceq: C+ (Mn/6) + (Cr +Mo + V)/5 + (Cu + Ni)/15*

	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	Ti	Nb	V	N	B	Ceq	Pcm	Jfact.
min.							8,0000	18,0000										
max.	0,0800	2,0000	1,0000	0,0450	0,0300		11,0000	20,0000										
Ladle	0,022	1,35	0,31	0,027	0,002		8,05	18,03										
Check	0,021	1,34	0,32	0,026	0,003		8,06	18,04										

Mechanical Tests: On fittings

Specimen	Position	Direction	Temperature °C	Dimension mm	Yield Point N/mm²	Tensile Strength N/mm²	Elongation % 2"	Ys / Ts	Hardness HB 10% of batch 3 tests min.	Impact Test - Specimen = KV: Position	Direction	Temperature °C	Dimension mm	Obtained energy Joule: Values	Obtained energy Joule: Average	Shear Area %: Values	Shear Area %
0058117.0.0	A	L	20		235	540	46	0,44	143-145								

The pipes are tested on tightness.

Steel making process:

Specimen position: A=neutral axis of base material; W=weld; E=extrados of base material; I=intrados of base material; Z=heat affected zone

Results of visual and dimensional inspection of fittings: SATISFACTORY Controllo visivo e dimensionale dei pezzi speciali / Results of visual and dimensional inspection of fittings: Soddisfacente / Satisfactory Il materiale fornito è in accordo ai requisiti dell'ordine / The product supplied is in compliance with the requirements of the order Documento redatto a fronte delle prove eseguite o della documentazione in ns.possesso. / Edited document on the strength of the made examinations or our own documents. Prodotti decapati e passivati / Products pickled and passivated Controllo PMI / Alloy steel verification (PMI):soddisfacente / satisfactory Prova di corrosione intergranulare secondo ASTM A 262 E / IGC test according to ASTM A262 E: soddisfacente/satisfactory --- La société VIRGILIO CENA S.p.A. garantit que tous le produits, objet du certificat susdit, respectent en leur totalité les specifications de l'article 15 de l'Arreté Ministeriel du 24 mars 1978. Materiale esente da radiazioni / Material radiation free Material compliant with PED2014/68/EU

ITEx Quality Services

Date 16/01/23

Inspection Discipline: Inspection ☒ W ☐ R ☒ ☐
Expediting ☐
G. Di Lauro Date 22/03/2023
Signature

Quality Control Manager BUTTURINI RICCARDO

ITEx Quality Services

Discipline: Inspection ☒ W ☐ R ☒ — ☐

Expediting ☐

G. Di Lauro Date 22/03/2023

Signature TCM

HUA GANG

BUREAU VERITAS

华迪钢业集团有限公司
HUADI STEEL GROUP CO., LTD
工厂检验证书
MILL TEST CERTIFICATE (EN 10204/3.1)

Lloyd's Register NO.MD00/3209/0001/4 TÜV SÜD Industrie Service

Date(日期) :21.03.07
No. (编号) :21-03-018

INVOICE NO.: CONTRACT NO.: EXECUTIVE STANDARD:ASTM A312/A312M	DESCRIPTION OF GOODS: SEAMLESS STAINLESS STEEL PIPE DELIVERY CONDITION: COLD FINISHED PICKLED&SOLUTION ANNEALED AT 1050 DEG. C COOLING MEDIUM:WATER STEELMAKING: AOD FURNACE NO WELD REPAIR AND MERCURY FREE	Surface condition (表面情况)	ACCEPTABLE
		Size tolerance (尺寸公差)	ACCEPTABLE

No.	Chemical Composition (%) (化学成份)											Lot No. (批号)
	Heat No. (炉号)	Grade (钢种)	Elements	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	
			Specification	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	8.0-13.0	18.0-20.0	--	--	
1	S1030418	TP304L	Results(Heat)	0.022	0.31	1.35	0.027	0.002	8.05	18.03	--	--	HD2021022060
			Results(product)	0.021	0.32	1.34	0.026	0.003	8.06	18.04	--	--	

No.	Size (尺寸)	QTY 数量	T.S. 抗拉伸强度	Y.S. 0.2% 屈服强度	EL. GL=50mm 延伸率(%) GW=25.4mm	IGC Test 晶间腐蚀 ASTM A262 E	Flattening Test 压扁 Continuous Heating Furnace	Hardness HB 硬度	PMI Test 材质鉴定 Gradual Pcs	Eddy Current Test 涡探 Gradual Pcs	Hydrostatic Test 水压 Gradual Pcs	Ultrasonic Test 超探 Gradual Pcs
		MTRS	(Mpa)	(Mpa)	(%)							
1	60.3*4	1090	540	235	46	ACCEPTABLE	ACCEPTABLE	145	ACCEPTABLE	ACCEPTABLE	—	—

ISO9001: 2000 Certified by ABS Group. Ltd
Conform to EN10204 (2004) —3.1
Country of melt and Country of manufacture: Zhejiang China

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HERE HAS BEEN MADE IN ACCORDANCE WITH ABOVE STANDARD AND CONFORM TO CONTRACT STIPULATED REQUIREMENTS.
2. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL APPROVAL OF THE COMPANY.
3.NO PAINTING

ISSUED BY	YEHEJIE	JUDGED BY	ZHANGJIANG

质保科

ADD: 24-32 ZHENBIAO ROAD, YOUNGZHONG TOWN, WENZHOU, ZHEJIANG, CHINA TEL: 86-577-85982882 FAX: 86-577-28806686

CENA ITALY

VIRGILIO CENA & FIGLI S.p.A.

www.cenafittings.com
Via G. Oberdan, 39 – 25128 – BRESCIA (ITALY)

QMS approved acc.to ISO 9001:2015
LRQA Cert. N° 10082605 according to
Annex I, Chapt. 4.3 PED 2014/68/EU

Issued in agreement with TÜV SÜD Industrie
Service GmbH (05.1992) and approved according
to PED, annex I, para 4.3 by Notified body 0036,
cert. n. DGR-QS-W 024/2002/MUC-001

INSPECTION CERTIFICATE EN 10204/3.1 — **CE23009364_3.1_01**

TECNIMONT SPA
Via Gaetano De Castillia 6A
20124 MILANO, (MI)
Italia

Customer Order	7500107591 AM.4-Proj.4274 Sines	Your Item Ref. 822 - I2259137
Article/Specification	Seamless elbows WP304/304L-S ASTM/ASME A/SA-403-17 ASME B16.9/18	
Heat Treatment	Cold formed - Solution annealed at 1050°Cx1,5'/mm	Brand of manufacturer **CENA**
Marking	IT - CENA - SA 403 WP304/304L-S - Heat Nr - Od. x Th.	

Extent of material delivered	Our pos.	Quantity	Article
	OV23000764/1550000	**NR 29**	**LR 90° 2" 40s**

Heat	**Marking code**	**Certificate**	**Supplier**
S2092514	**S2092514**	22-09-021 *	HUADI STEEL GROUP CO.,LTD

Raw material: Seamless pipe ASTM/ASME A/SA 312 Gr.TP304

Results of chemical analysis % — *Ceq: C+ (Mn/6) + (Cr +Mo + V)/5 + (Cu + Ni)/15*

	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	Ti	Nb	V	N	B	Ceq	Pcm	Jfact.
min.							**8,0000**	**18,0000**										
max.	**0,0800**	**2,0000**	**1,0000**	**0,0450**	**0,0300**		**11,0000**	**20,0000**										
Ladle	**0,015**	**1,05**	**0,32**	**0,033**	**0,005**		**8,09**	**18,16**										
Check																		

Mechanical Tests: On fittings

Specimen	Position	Direction	Temperature °C	Dimension mm	Yield Point N/mm²	Tensile Strength N/mm²	Elongation % 2"	Ys / Ts	Hardness HB 10% of batch 3 tests min.	Impact Test - Specimen = KV: Position	Direction	Temperature °C	Dimension mm	Obtained energy Joule: Values			Average	Shear Area %: Values			
1	A	L	20		245	555	57	0,44	147-149				10x5								

The pipes are tested on tightness.

Steel making process:

Specimen position: A=neutral axis of base material; W=weld; E=extrados of base material; I=intrados of base material; Z=heat affected zone

Results of visual and dimensional inspection of fittings: SATISFACTORY Controllo visivo e dimensionale dei pezzi speciali / Results of visual and dimensional inspection of fittings: Soddisfacente / Satisfactory Il materiale fornito è in accordo ai requisiti dell'ordine / The product supplied is in compliance with the requirements of the order Documento redatto a fronte delle prove eseguite o della documentazione in ns.possesso. / Edited document on the strength of the made examinations or our own documents. Prodotti decapati e passivati / Products pickled and passivated Controllo PMI / Alloy steel verification (PMI):soddisfacente / satisfactory Prova di corrosione intergranulare secondo ASTM A 262 E / IGC test according to ASTM A262 E: soddisfacente/satisfactory --- La société VIRGILIO CENA S.p.A. garantit que tous le produits, objet du certificat susdit, respectent en leur totalité les specifications de l'article 15 de l'Arreté Ministeriel du 24 mars 1978. Materiale esente da radiazioni / Material radiation free Material compliant with PED2014/68/EU

Date 03/08/23

Inspection ITEx — Discipline: Inspection ☒ W ☐ R ☒ ☐ — Expediting ☐ — G. Di Lauro — Date 28/09/2023 — Signature

Quality Control Manager **BUTTURINI RICCARDO**

华迪钢业集团有限公司
HUADI STEEL GROUP CO., LTD
工厂检验证书
MILL TEST CERTIFICATE (EN 10204/3.1)

NO.MD00/3209/0001/4

Date(日期) :22.09.28
No. (编号) :22-09-021

INVOICE NO. : CONTRACT NO. : EXECUTIVE STANDARD:ASTM A312/A312M	DESCRIPTION OF GOODS: SEAMLESS STAINLESS STEEL PIPE DELIVERY CONDITION: COLD FINISHED PICKLED&SOLUTION ANNEALED AT 1050 DEG. C COOLING MEDIUM:WATER STEELMAKING: AOD FURNACE NO WELD REPAIR AND MERCURY FREE	Surface condition (表面情况)	ACCEPTABLE
		Size tolerance (尺寸公差)	ACCEPTABLE

No.	Chemical Composition (%) (化学成份)											Lot No. (批号)
	Heat No. (炉号)	Grade (钢种)	Elements	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	
			Specification	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	8.0-13.0	18.0-20.0	--	--	
1	S2092514	TP304L	Results(Heat)	0.016	0.33	1.03	0.034	0.006	8.08	18.15	--	--	HD209066
			Results(product)	0.015	0.32	1.05	0.033	0.005	8.09	18.16	--	--	

No.	Size (尺寸)	QTY 数量	T.S. 抗拉伸强度	Y.S. 0.2% 屈服强度	EL. GL=50mm 延伸率 (%) GW=25.4mm	IGC Test 晶间腐蚀 ASTM A262 E	Flattening Test 压扁 Continuous Heating Furnace	Hardness HB 硬度	PMI Test 材质鉴定 Gradual Pcs	Eddy Current Test 涡探 Gradual Pcs	Hydrostatic Test 水压 Gradual Pcs	Ultrasonic Test 超探 Gradual Pcs
		MTRS	(Mpa)	(Mpa)	(%)							
1	60.3*3	550	555	245	57	ACCEPTABLE	ACCEPTABLE	149	ACCEPTABLE	ACCEPTABLE	—	—

ISO9001: 2000 Certified by ABS Group. Ltd
Conform to EN10204 (2004) —3.1
Country of melt and Country of manufacture:
Zhejiang China

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HERE HAS BEEN MADE IN ACCORDANCE WITH ABOVE STANDARD AND CONFORM TO CONTRACT STIPULATED REQUIREMENTS.
2. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL APPROVAL OF THE COMPANY.
3.NO PAINTING

ISSUED BY	YEHEJIE	JUDGED BY	ZHANGJIANG

质保科 QUALITY DEPARTMENT

ADD: 24-32 ZHENBIAO ROAD, YOUNGZHONG TOWN, WENZHOU, ZHEJIANG, CHINA TEL: 86-577-85982882 FAX: 86-577-28806686

江阴中南重工有限公司

Jiangyin Zhongnan Heavy Industries Co.,Ltd.

产品质量证明书 Quality Certificate EN10204-3.1

表号：ZNHI/QM400-34-1
修订号：0

用户(Purchaser)：(印度)TECNIMONT S.P.A　　订单号:PO 7500110919　　质量证明书编号 (Certificate No.)：2023-03-225-61

材质(Material)： ASTM A403 WP304/304L DG　　产品执行标准(Product standards)： MSS SP-95-2018

生产批号 BatchNo.	产品名称 Designation	规格型号 Dimension	单位 Unit	数量 Q'ty	炉 号 Heat No.	化学成分 Chemical Composition (%)															机械性能 Mechanical Properties							硬 度 Hardness HBW	PO item No.	备 注 Remark
						C	Si	Mn	S	P	Cr	Ni	Ti	Mo	V	Cu	Nb	Al	N	CE	抗拉强度 R_m(Mpa)	屈服强度 $R_{p0.2}$ (Mpa)	延伸率 A%	断面收缩率 Z %	冲击试验 (J) Impact Test Report 0℃ (10*10*55mm)					
2023-03-225-188	ECCENTRIC SWAGE	SIZE1:4 SIZE2:1.5 SCH1:40S SCH2:40S 4"*1.5"*SCH40S*SCH40S	件	1	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	188	Ident Code: 12259094
2023-03-225-196	CONCENTRIC SWAGE	SIZE1:2 SIZE2:1.5 SCH1:40S SCH2:80S 2"*1.5"*SCH40S*SCH80S	件	3	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	196	Ident Code: 12496263
2023-03-225-197	CONCENTRIC SWAGE	SIZE1:2 SIZE2:1 SCH1:STD SCH2:40S 2"*1"*SCHSTD*SCH40S	件	3	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	197	Ident Code: I64580315
2023-03-225-199	ECCENTRIC SWAGE	SIZE1:3 SIZE2:1 SCH1:40S SCH2:40S 3"*1"*SCH40S*SCH40S	件	3	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	199	Ident Code: 12259083
2023-03-225-200	ECCENTRIC SWAGE	SIZE1:4 SIZE2:1.5 SCH1:10S SCH2:40S 4"*1.5"*SCH10S*SCH40S	件	3	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	200	Ident Code: 12495812
2023-03-225-201	ECCENTRIC SWAGE	SIZE1:4 SIZE2:1.5 SCH1:40S SCH2:80S 4"*1.5"*SCH40S*SCH80S	件	4	N220606AV04	0.021	0.35	1.28	0.001	0.032	18.22	8.07									596	303	56.5	-	-	-	-	165/167/168	201	Ident Code: 12496355

其他检测结果(Other examination and test)

尺寸检查 Dimension Inspection	外观检查 Visual Inspection	硬 度 Hardness (HBW≤201)	无损检测(NDT) 磁粉 MT	无损检测(NDT) 着色 PT	无损检测(NDT) 超声波 UT	无损检测(NDT) X射线 RT	晶间腐蚀 Intergranular Corrosion Test	备 注 Remark	交货状态 Delivery condition
合格 OK	合格 OK	合格 OK	-	合格 OK	-	-	合格 OK	PMI OK	固溶+酸洗钝化 Solution Annealing+Pickle And Passivation

其他(others)：

1.Heat treatment:Solution Annealing 1050℃ in the water cooling.

兹证明上述产品的制造、检验和试验，符合上述标准规定及合同要求。
We hereby certify that the products described above have manufactured，inspected and tested in accordance with the specified standards and the contract requirements.

特种设备制造许可证编号(Manufacture License of Special Equipment)：TS2732E11-2024

检验员(Inspector)：　　质保工程师(QA Engineer)：　　签发日期(Date of issue)：2023.05.29

检验部门（章）
Stamp of Quality Department

地址:江阴市高新技术产业开发园金山路788号
Add: 788 Jinshan Rd,High and New Technology Industrial Development,JiangYin City, JiangSu P.R.China
电话(Tel): 0510-86996009
传真(Fax): 0510-86996035

Welding and QC Report Per Spool

Contract : P2308 | Drawing : 2121-VG40E01-1 | Job : P2308S | Material : Stainless Steel 304, 316, 317

Client : NERVION | Revision : 00A | Spool : 01096 | Spec : 2E63-M

Project : ALBA | Piece Mark : 2121-VG40E01-1-SP01-01096

Weld data					Welding							Control																							
Weld No.	Type	Dia	Sch /Thk	Weld Proc.	1st Pass	Pass 1	1st MTR	Final Pass	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	Ferite	Date Ferrite	PWHT	Date PWHT	BHN	Date BHN	Ultra	Date UT	Xray	Date Xray
0002	BWC	2	S40S	MW.26_BW	BC	25-09-2024	4712055	BC	25-09-2024	4712055			001172	21-10-2024					001237	31-10-2024										
0003	BW	2	S40S	MW.26_BW	BC	25-09-2024	4712055	BC	25-09-2024	4712055			001172	21-10-2024					001237	31-10-2024										
0004	BWC	2	S40S	MW.26_BW	BC	25-09-2024	4712055	BC	25-09-2024	4712055			001172	21-10-2024					001237	31-10-2024									000371	28-10-2024
0005	BW	2	S40S	MW.26_BW	BC	25-09-2024	4712055	BC	25-09-2024	4712055			001172	21-10-2024					001237	31-10-2024										
0006	BWC	2	S40S	MW.26_BW	BC	25-09-2024	4712055	BC	25-09-2024	4712055			001172	21-10-2024					001237	31-10-2024										

SGS NoBo 1155 ☐ reviewed by ☐ witnessed by

18/12/2024

On behalf of Tecnimont
QC Welding Inspector

(R)

09/12/2024

Notes:

	Boccard Portugal QC	Client
Signature	QA / QC	Sergio Morales
Date	25-11-2024 15:26:42	Date: 03-12-24

Shop QC Inspection Report

P2308-001216

Client : NERVION
Contract : P2308 / Project : ALBA
Material: Stainless Steel 304, 316, 317

Job number: P2308S
Spool Nº: 01096
Piece Mark: 2121-VG40E01-1-SP01-01096

Procedure / Instruction reference: 20.2 IT 011 MF 324 - Rev: A

Control Date: 21-10-2024

Remarks: The results refer to the controlled items

Actions / Tasks List	Required Yes	Required No	Done/ Identified
Welder / weld list labels printed and pasted on the spool sheet	X		X
Spool Barcode label printed	X		X
Spool is identified with the metal tag	X		X
Spool stencil required (hard stamp low stress)		X	
Joint preparation & cleanliness / spool dimensions checked	X		X
Level, plumb, Two holes, flanges and internal alignment, Squareness	X		X
Material checked (type of material, rate, heat numbers, filler material, etc.)	X		X
Welders list match with actual welder stencil / Id. on pipe	X		X
PWHT- Spool identified as per Procedure / Instruction for PWHT		X	
HT (Hardness Test)- Welds identified as per Procedure / Instruction		X	
MT - Welds identified as per Procedure / Instruction		X	
PT - Welds identified as per Procedure / Instruction		X	
PMI - Welds identified as per Procedure / Instruction	X		X
FE (Ferrite test) - Welds identified as per Procedure / Instruction		X	
RT - Welds identified as per Procedure / Instruction	X		X
UT - Welds identified as per Procedure / Instruction		X	
Spool identified (by marker) as per Procedure / Instruction (Job number, sheet number and Paint type if required)	X		X
Hydro - Spool identified as per Procedure / Instruction		X	
Cleanliness - Cleaned inside free of slag, scale, sand, weld spatter, cutting chips, etc. and blow out by compressed air	X		X

Comments:

Performed by: RODRIGUES(ST), VITOR (N2 VT/PT)
Date: 21-10-2024
Signature: QA/QC

QA/QC Inspection: RAIMUNDO, MARIANA
Date: 25-11-2024 15:26:42
Signature: QA / QC

Customer Inspection:
Sergio Morales
Date: 03-12-24

SGS NoBo 1155 ☐ reviewed by ☐ witnessed by
18/12/2024

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

Visual Examination Report (Welds)

P2308-001172

Contract : P2308
Client : NERVION
Project : ALBA

Job number: P2308S
Spool Nº: 01096
Piece Mark: 2121-VG40E01-1-SP01-01096

Material: Stainless Steel 304, 316, 317
Procedure & Instructions: 4274-LZ-VD-FW31010370QAC04 - Rev: 1
Testing Date: 21-10-2024

Remarks: The results refer to the controlled items	Unacceptable indications for welding
ACCEPTANCE CRITERIA : ASME B31.3	Weld reinforcement greater than specified in project procedure
The illumination of the surface must be at least 500 lux. However, a value of 1000lux is recommended	Any linear indications greater than specified in project procedure, surface porosity with rounded indications having a dimension greater than specified project procedure
Indications of lack of fusion open to the surface / Cracks located on external surfaces	Surface finish that could interfere with other testing required
Incomplete penetration of welds / Indications of undercut on surfaces which are greater than specified in project procedure	Misalignment greater than specified in applicable code or poor fit up of weld joints

Identification			Temp. (ºF/ºC)	Accepted	Rejected	Defect	Technique Used	Comments
Weld No.	Weld Desc.	Welder						
0002	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	BC	22	X			Direct	
0003	2.0000 S40S BW-Buttweld Straight (MW.26_BW)	BC	22	X			Direct	
0004	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	BC	22	X			Direct	
0005	2.0000 S40S BW-Buttweld Straight (MW.26_BW)	BC	22	X			Direct	
0006	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	BC	22	X			Direct	

Sketch / Photo:

Defects									
Clustered Porosity	CP	Porosity	P	Cap	C	Lack of Cleanup	LC	Hollow in Cap	W
Unibmly Porosity	UP	Slag	S	Undercut	UC	Crack	CR	Surface	SU

Test Performed by: RODRIGUES(ST), VITOR (N2 VT/PT)
Date: 21-10-2024
Signature: QA/QC

QA/QC Inspection: RAIMUNDO, MARIANA
Date: 25-11-2024 15:26:42
Signature: QA / QC

Customer Inspection:
Sergio Morales
Date: 03-12-24

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

(R)

Positive Material Identification Report (PMI)

P2308-001237

Client : NERVION
Contract : P2308 / Project : ALBA

Job number: P2308S
Spool Nº: 01096
Piece Mark: 2121-VG40E01-1-SP01-01096
Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC11 - Rev: 1
PMI Equipment : Niton XL3t800 Serial Nº 32735 (FP01)
Equipment Deviation : + - 5%
Testing Date: 31-10-2024

Remarks: The results refer to the controlled items

Weld / Item No	Description	Reading number	Longitudinal	Chemical Elements										Accepted	Rejected	Comments
				%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0002	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	100		0	0	0	9	69	1	19	0	0	0	X		
0003	2.0000 S40S BW-Buttweld Straight (MW.26_BW)	101		0	0	0	8	69	1	19	0	0	0	X		
0004	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	102		0	0	0	9	69	1	19	0	0	0	X		
0005	2.0000 S40S BW-Buttweld Straight (MW.26_BW)	103		0	0	0	8	69	1	18	0	0	0	X		
0006	2.0000 S40S BWC-Miter / Angle / Trim weld >0,5° (MW.26_BW)	104		0	0	0	9	69	1	19	0	0	0	X		
1.1	2.0000 S40S PIPE, SEAMLESS, A312-TP304L (J3120640)	97		0	0	0	7	72	1	17	0	0	0	X		
1.2	2.0000 S40S PIPE, SEAMLESS, A312-TP304L (A-6500)	95		0	0	0	8	70	1	18	0	0	0	X		
2	2.0000 S40S 1.0000 S40S CONC SWAGE NIPPLE, LEB-SEP, A403-WP304L (N220606AV04)	99		0	0	0	7	71	1	18	0	0	0	X		
3	2.0000 S40S 45 ELL, SEAMLESS, A403-WP304L (S1030418)	98		0	0	0	8	71	1	18	0	0	0	X		
4	2.0000 S40S 90 LR ELL, SEAMLESS, A403-WP304L (S2092514)	94		0	0	0	7	72	1	17	0	0	0	X		
4A	2.0000 S40S 90 LR ELL, SEAMLESS, A403-WP304L (S2092514)	96		0	0	0	7	71	1	18	0	0	0	X		

09/12/2024
On behalf of Tecnimont
QC Welding Inspector
(R)

Test Performed by: GONCALVES(QA), J. (N2 PT/RT)
Date: 31-10-2024
Signature

QA/QC Inspection: RAIMUNDO, MARIANA
Date: 25-11-2024 15:26:42
Signature

Customer Inspection:
Date: Sergio Morales
Date: 03-12-24
Signature

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	100
Mode	ALLOY
Time	2024-10-31 12:27
Duration	11.76
Sequence	Final
Alloy1	304SS : 0.06
Alloy2	No Match : *2.11
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.035
Sn	< LOD	:	0.046
Pd	< LOD	:	0.035
Ag	< LOD	:	0.167
Al	< LOD	:	80.000
Mo	0.046	±	0.007
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.013
Pb	< LOD	:	0.010
Se	< LOD	:	0.008
W	< LOD	:	0.081
Zn	< LOD	:	0.033
Cu	< LOD	:	0.146
Ni	9.074	±	0.281
Co	< LOD	:	0.457
Fe	69.330	±	0.420
Mn	1.858	±	0.193
Cr	19.150	±	0.246
V	< LOD	:	0.107
Ti	< LOD	:	0.118

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

(R)

Sergio Morales

Date: 03-12-24

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	101
Mode	ALLOY
Time	2024-10-31 12:27
Duration	12.03
Sequence	Final
Alloy1	304SS : 0.22
Alloy2	No Match : *2.12
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.046
Pd	< LOD	:	0.036
Ag	< LOD	:	0.159
Al	< LOD	:	80.000
Mo	0.042	±	0.007
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.002
Pb	< LOD	:	0.015
Se	< LOD	:	0.006
W	< LOD	:	0.080
Zn	< LOD	:	0.023
Cu	< LOD	:	0.141
Ni	8.692	±	0.279
Co	< LOD	:	0.460
Fe	69.677	±	0.421
Mn	1.901	±	0.195
Cr	19.024	±	0.247
V	0.143	±	0.065
Ti	< LOD	:	0.126

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

Sergio Morales
Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	102
Mode	ALLOY
Time	2024-10-31 12:28
Duration	12.16
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.035
Sn	< LOD	:	0.045
Pd	< LOD	:	0.030
Ag	< LOD	:	0.210
Al	< LOD	:	80.000
Mo	0.032	±	0.006
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.005
Pb	< LOD	:	0.010
Se	< LOD	:	0.006
W	< LOD	:	0.077
Zn	< LOD	:	0.031
Cu	< LOD	:	0.135
Ni	9.145	±	0.271
Co	< LOD	:	0.436
Fe	69.191	±	0.404
Mn	1.806	±	0.185
Cr	19.256	±	0.237
V	< LOD	:	0.119
Ti	< LOD	:	0.137

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

GABRIEL BOATTINI
INTERNATIONAL WELDING ENGINEER
ISO EN 9712 certified Welder Level 2
VT/PT/MT/RT/UT-TOFD - PA

(R)

Sergio Morales

Date: 03-12-24

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	103
Mode	ALLOY
Time	2024-10-31 12:28
Duration	11.92
Sequence	Final
Alloy1	304SS : 0.16
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.036
Sn	< LOD	:	0.046
Pd	< LOD	:	0.036
Ag	< LOD	:	0.102
Al	< LOD	:	80.000
Mo	0.049	±	0.008
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.012
Pb	< LOD	:	0.020
Se	< LOD	:	0.006
W	< LOD	:	0.101
Zn	< LOD	:	0.033
Cu	< LOD	:	0.145
Ni	8.788	±	0.278
Co	< LOD	:	0.455
Fe	69.848	±	0.420
Mn	1.643	±	0.189
Cr	18.933	±	0.245
V	< LOD	:	0.126
Ti	< LOD	:	0.148

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

Sergio Morales
Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	104
Mode	ALLOY
Time	2024-10-31 12:28
Duration	12.35
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.11
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.050
Pd	< LOD	:	0.034
Ag	< LOD	:	0.171
Al	< LOD	:	80.000
Mo	0.067	±	0.009
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.007
Pb	< LOD	:	0.014
Se	< LOD	:	0.007
W	< LOD	:	0.087
Zn	< LOD	:	0.025
Cu	< LOD	:	0.140
Ni	9.078	±	0.278
Co	< LOD	:	0.445
Fe	69.532	±	0.415
Mn	1.706	±	0.190
Cr	19.286	±	0.244
V	< LOD	:	0.119
Ti	< LOD	:	0.121

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

Sergio Morales

Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	97
Mode	ALLOY
Time	2024-10-31 12:26
Duration	13.39
Sequence	Final
Alloy1	301SS : 1.09
Alloy2	No Match : *2.82
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.033
Sn	< LOD	:	0.040
Pd	< LOD	:	0.033
Ag	< LOD	:	0.219
Al	< LOD	:	80.000
Mo	< LOD	:	0.006
Nb	< LOD	:	0.004
Zr	< LOD	:	0.002
Bi	< LOD	:	0.012
Pb	< LOD	:	0.016
Se	< LOD	:	0.007
W	< LOD	:	0.066
Zn	< LOD	:	0.027
Cu	< LOD	:	0.130
Ni	7.788	±	0.250
Co	0.482	±	0.215
Fe	72.153	±	0.391
Mn	1.472	±	0.172
Cr	17.679	±	0.222
V	0.131	±	0.059
Ti	< LOD	:	0.128

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

GABRIEL HOEFLATU
IWI-S/IWI-S Practitioner
ISO EN 9712 certification Level 2
VT/PT/MT/RT/UT-TOFD - PA

(R)

Sergio Morales

Date: 03-12-24

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	95
Mode	ALLOY
Time	2024-10-31 12:26
Duration	12.58
Sequence	Final
Alloy1	304SS : 0.23
Alloy2	No Match : *2.12
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.039
Sn	< LOD	:	0.045
Pd	< LOD	:	0.032
Ag	< LOD	:	0.162
Al	< LOD	:	80.000
Mo	0.217	±	0.014
Nb	< LOD	:	0.007
Zr	< LOD	:	0.004
Bi	< LOD	:	0.012
Pb	< LOD	:	0.015
Se	< LOD	:	0.007
W	< LOD	:	0.085
Zn	< LOD	:	0.038
Cu	0.501	±	0.087
Ni	8.044	±	0.263
Co	< LOD	:	0.442
Fe	70.487	±	0.405
Mn	1.909	±	0.188
Cr	18.330	±	0.235
V	< LOD	:	0.114
Ti	< LOD	:	0.134

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

Sergio Morales
Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	99
Mode	ALLOY
Time	2024-10-31 12:27
Duration	12.95
Sequence	Final
Alloy1	304SS : 1.56
Alloy2	No Match : 2.09
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.033
Sn	< LOD	:	0.044
Pd	< LOD	:	0.033
Ag	< LOD	:	0.157
Al	< LOD	:	80.000
Mo	0.013	±	0.005
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.011
Pb	< LOD	:	0.013
Se	< LOD	:	0.006
W	< LOD	:	0.075
Zn	< LOD	:	0.031
Cu	0.191	±	0.070
Ni	7.879	±	0.252
Co	< LOD	:	0.426
Fe	71.939	±	0.391
Mn	1.377	±	0.173
Cr	18.126	±	0.225
V	< LOD	:	0.111
Ti	< LOD	:	0.129

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

Sergio Morales

Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	98
Mode	ALLOY
Time	2024-10-31 12:27
Duration	12.93
Sequence	Final
Alloy1	304SS : 0.41
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.035
Sn	< LOD	:	0.047
Pd	< LOD	:	0.034
Ag	< LOD	:	0.188
Al	< LOD	:	80.000
Mo	0.097	±	0.010
Nb	< LOD	:	0.007
Zr	< LOD	:	0.002
Bi	< LOD	:	0.002
Pb	< LOD	:	0.013
Se	< LOD	:	0.008
W	< LOD	:	0.090
Zn	< LOD	:	0.029
Cu	0.237	±	0.074
Ni	8.025	±	0.259
Co	< LOD	:	0.434
Fe	71.405	±	0.400
Mn	1.418	±	0.178
Cr	18.254	±	0.231
V	< LOD	:	0.117
Ti	< LOD	:	0.145

09/12/2024
On behalf of Tecnimont
QC Welding Inspector

Sergio Morales
Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	94
Mode	ALLOY
Time	2024-10-31 12:26
Duration	11.58
Sequence	Final
Alloy1	301SS : 0.88
Alloy2	No Match : 2.36
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.045
Sn	< LOD	:	0.059
Pd	< LOD	:	0.046
Ag	< LOD	:	0.148
Al	< LOD	:	80.000
Mo	< LOD	:	0.009
Nb	< LOD	:	0.006
Zr	< LOD	:	0.004
Bi	< LOD	:	0.009
Pb	< LOD	:	0.014
Se	< LOD	:	0.011
W	< LOD	:	0.110
Zn	< LOD	:	0.036
Cu	< LOD	:	0.151
Ni	7.714	±	0.317
Co	< LOD	:	0.546
Fe	72.103	±	0.498
Mn	1.420	±	0.219
Cr	17.903	±	0.285
V	0.179	±	0.080
Ti	< LOD	:	0.178

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

Sergio Morales

Date: 03-12-24

(R)

Boccard Portugal, Lda
Zona Industrial de Montalvo, Lote 3
Constância, Portugal2250-999

Certificate of PMI Reading

XL3t-32735

Reading No	96
Mode	ALLOY
Time	2024-10-31 12:26
Duration	12.13
Sequence	Final
Alloy1	301SS : 1.56
Alloy2	No Match : *2.04
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.037
Sn	< LOD	:	0.045
Pd	< LOD	:	0.034
Ag	< LOD	:	0.187
Al	< LOD	:	80.000
Mo	< LOD	:	0.006
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.010
Pb	< LOD	:	0.012
Se	< LOD	:	0.006
W	< LOD	:	0.075
Zn	< LOD	:	0.023
Cu	< LOD	:	0.133
Ni	7.740	±	0.255
Co	0.452	±	0.220
Fe	71.834	±	0.399
Mn	1.391	±	0.176
Cr	18.076	±	0.230
V	0.187	±	0.064
Ti	< LOD	:	0.130

09/12/2024

On behalf of Tecnimont
QC Welding Inspector

Sergio Morales

Date: 03-12-24

(R)

Radiographic Examination Report

P2308-000371

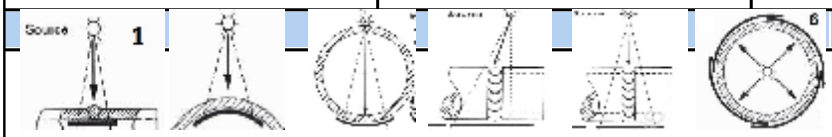
Contract : P2308
Client : NERVION
Project : ALBA

Spool Nº: P2308S-01096
Isometric Nº: 2121-VG40E01-1
Piece Mark: 2121-VG40E01-1-SP01-01096

Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:
4274-LZ-VD-FW31010370QAC02 - Rev.1	ASME B.31.3 – Table 341.3.2 Normal Fluid	28-10-2024	Stainless Steel 304, 316, 317

Equipment		Film		IQI		Development	
Type:	G-RAY	Brand:	FUJI	Type:	ASTM-1A	Equipment:	GE M ECO
Source Equip:	Ir192	Type:	IX50	Position:	Film Side	Type:	Auto
Source Dim:	2x1.4	Class:	C3	Sensitivity:	4	Temperature:	29
Activity (Ci):	17.8	Lead Sheets:	0,5	Ø of visible wire/hole	0,0063(0,16)	Developer:	G135
		Films/Casette:	Single			Fixer:	G335

Testing Technique



1 2 3 4 5 6

Indication Codes (ISO 6520)

--	EP-Excess Penetration (504)	SB-Suck Back
BB-Back Bevel	FA-Film Artifact	ST-Sugared Tack
BW-Back Weld	GR-Grind Repair	SU-Surface
BT-Burn Through (510)	HL-Hi-LO	T-Tungsten
C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)
CP-Clusterd Porosity (2012)	LF-Lack of Fusion (401)	UP-Unformity Porosity (2013)
CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap
CR-Crack	P-Porosity (2011)	W-Wire
CC-Crater Crack (104)	R-Root	WH-Worm Hole (2016)
DI-Dimensional	S-Slag (301)	XN-Xray Film Non-Conform

General Remarks

The results refer to the controlled items - Good / Acceptable + Repair = Good after Repair

Notations / Symbology

x Acceptable after Repair SFD = Source Film Distance SOD = Source Object Distance

Weld No.	Weld Desc. (WPS)	Welder	Position	SFD	SOD	Weld Reinf	Testing Technique	Exposure Time	Density	IQI	Indication Code	Decision	Remarks
0004	2.0000 S40S BWC (MW.26_BW)	BC	A	500	440	NA	4	600	3.0	4		-	RX487
0004	2.0000 S40S BWC (MW.26_BW)	BC	B	500	440	NA	4	600	3.1	4		-	RX487

films review

On behalf of Tecnimont
QC Welding Inspector

09/12/2024

Radiographic Examination Report

P2308-000371

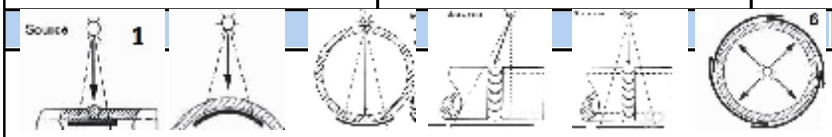
Contract : P2308
Client : NERVION
Project : ALBA

Spool Nº: P2308S-01096
Isometric Nº: 2121-VG40E01-1
Piece Mark: 2121-VG40E01-1-SP01-01096

Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:
4274-LZ-VD-FW31010370QAC02 - Rev.1	ASME B.31.3 – Table 341.3.2 Normal Fluid	28-10-2024	Stainless Steel 304, 316, 317

Equipment		Film		IQI		Development	
Type:	G-RAY	Brand:	FUJI	Type:	ASTM-1A	Equipment:	GE M ECO
Source Equip:	Ir192	Type:	IX50	Position:	Film Side	Type:	Auto
Source Dim:	2x1.4	Class:	C3	Sensitivity:	4	Temperature:	29
Activity (Ci):	17.8	Lead Sheets:	0,5	Ø of visible wire/hole	0,0063(0,16)	Developer:	G135
		Films/Casette:	Single			Fixer:	G335

Testing Technique



1 2 3 4 5 6

Indication Codes (ISO 6520)

--	EP-Excess Penetration (504)	SB-Suck Back
BB-Back Bevel	FA-Film Artifact	ST-Sugared Tack
BW-Back Weld	GR-Grind Repair	SU-Surface
BT-Burn Through (510)	HL-Hi-LO	T-Tungsten
C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)
CP-Clusterd Porosity (2012)	LF-Lack of Fusion (401)	UP-Unformity Porosity (2013)
CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap
CR-Crack	P-Porosity (2011)	W-Wire
CC-Crater Crack (104)	R-Root	WH-Worm Hole (2016)
DI-Dimensional	S-Slag (301)	XN-Xray Film Non-Conform

General Remarks

The results refer to the controlled items - Good / Acceptable + Repair = Good after Repair

Notations / Symbology

x Acceptable after Repair SFD = Source Film Distance SOD = Source Object Distance

Weld No.	Weld Desc. (WPS)	Welder	Position	SFD	SOD	Weld Reinf	Testing Technique	Exposure Time	Density	IQI	Indication Code	Decision	Remarks

	Performed by:	Examined by:	QA/QC Inspection:	Customer Inspection:
Name:	GONCALVES(QA), J. (N2 PT/RT)	(JG)	RAIMUNDO, MARIANA	
Date:	28-10-2024	28-10-2024	25-11-2024 15:26:42	
Signature:			QA / QC	Sergio Morales Date: 03-12-24

films review
On behalf of Tecnimont
QC Welding Inspector
09/12/2024

Pickling & Passivation Report

P2308 – 001127

Client : NERVION
Contract : P2308 / Project : ALBA
Material: Stainless Steel 304, 316, 317

Job number: P2308S
Spool N°: 01096
Piece Mark: 2121-VG40E01-1-SP01-01096

Procedure/Instruction: 23A008/010 Rev.2

Pickling Paste		Neutralizer Paste			
Brand:	Antox® 71 E Plus	Brand:	Antox® NP	Brand:	
Batch:	N/A	Batch:	N/A	Batch:	
Opening Date:	10/08/2024	Opening Date:	10/08/2024	Opening Date:	
Expiration Date:	NA	Expiration Date:	NA	Expiration Date:	

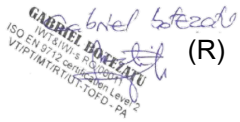
Weld No.	Operations				Accepted	Rejected
	Pickling	Pickling duration (min.)	Neutralization	Rinsing		
0002	OK	15 min	OK	OK	X	
0003	OK	15 min	OK	OK	X	
0004	OK	15 min	OK	OK	X	
0005	OK	15 min	OK	OK	X	
0006	OK	15 min	OK	OK	X	

Performed by: FERREIRA, ANDRÉ
Date: 22/11/2024
Signature

QA/QC Inspection: RAIMUNDO, MARIANA
Date: 25/11/2024 15:26:13
Signature

Customer Inspection:
Sergio Morales
Date: 03-12-24

09/12/2024
On behalf of Tecnimont
QC Welding Inspector



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