



Tecnimont S.p.A.

REPSOL POLIMEROS  
SA

4274\_CONST

ALBA PROJECT-PP AND PEL PLANTS



MOD-ITP-XL_220		RELEASE OF SPOOLS FROM WORKSHOP	Report n° <b>IP-WSR-P-310-000420_RFI5573_MOD-ITP-XL_220</b>
Rev.1			RFI Nr.: Date :
Unit	-		
Plant Area	-		
Isometric Number			
Inspection Package Number	<b>IP-WSR-P-310-000420_RFI5573 - IP Spool Release From Workshop</b>		

Sheet 01/01

The Present Inspection Package contains the following Elements:

2211-PCW71A01-1-SP12-01162;2121-LO40B03-1-SP01-00997;2121-LO40B02-2-SP05-01147;2121-IA91F62-7-SP16-00477;1122-O15011-1-SP01-00546;1121-LS50001-4-SP07-01094;2211-PCW70B04-3-SP06-00407;2121-LO40B03-1-SP03-00998;2121-LO40B02-3-SP09-01150;1121-LS50001-4-SP08-01132;1113-PN52018-1-SP02-00862;2211-PCW70B04-3-SP05-01158;2211-VA71A01-1-SP01-00442;2211-PCW71A01-2-SP04-01104;2121-LO40B02-3-SP10-00505;2121-LO40B02-2-SP07-01149;1121-LS50006-2-SP02-01129;1121-LS50002-2-SP08-01126;2211-VA71A01-1-SP02-00443;2211-PCW71A01-2-SP05-01105;2121-LO40B02-3-SP11-00506;2121-LO40B02-3-SP08-00503;1121-PR34029-3-SP03-01131;1121-LS50005-3-SP05-00192;2121-LO40B02-2-SP06-01148;2121-LO40B02-2-SP04-01146;1211-VA81004-1-SP01-01095;1127-LS50009-2-SP01-01130;2211-PCW70B04-3-SP04-00406;2121-LO40B04-1-SP02-01069;2121-LO40B04-1-SP01-01068;2121-LO40B01-1-SP01-00498;2121-IA91F63-4-SP05-00488;2211-PCW70B04-3-SP07-00409;2121-LO40B03-1-SP02-01153;2121-LO40B01-1-SP02-00499;1211-PX86033-2-SP04-01145;1121-LS50002-2-SP05-01125;2211-LS50A05-1-SP02-00385;2121-LO40B04-1-SP03-01155;2121-IA91F63-4-SP04-00487;2121-IA91F62-8-SP17-00478;1113-PN52018-1-SP01-00861

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)

On behalf of Tecnímont / R  
Piping Supervisor  
Cristi Sandu  
29.10.2024

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input checked="" type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
SUBCONTRACTOR	Date [DD-MMM-YYYY]	Name	Signature			
CONTRACTOR	29-10-2024	Sergio Morales Collantes				
COMPANY						
(Free)						



Tecnimont S.p.A.

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ALBA PROJECT-PP AND PEL PLANTS



<b>MOD-ITP-XL_220</b>		<b>RELEASE OF SPOOLS FROM WORKSHOP</b>	Report n° <b>IP-WSR-P-310-000420_RFI5573_MOD-ITP-XL_220</b>
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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 Amendment to EC-L-51.01 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"

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu C. Sandu  
29.10.2024

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input checked="" type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
SUBCONTRACTOR	Date [DD-MMM-YYYY]	Name	Signature 			
CONTRACTOR	29-10-2024	Sergio Morales Collantes				
COMPANY						
(Free)						

 <b>Tecnimont</b>	<p style="text-align: center;"><b>Punch List</b></p> <p style="text-align: center;"><b>PUNCH LIST</b></p>	<p style="text-align: center;"><b>IDENTIFICATION CODE</b></p>			
		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>SHEET 1 / 1</td> <td>DOC.CLASS 1</td> <td>ISSUE 01</td> </tr> </table>	SHEET 1 / 1	DOC.CLASS 1	ISSUE 01
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 <b>MECWIDE</b> <small>Engineering Consultancy</small>	<p><b>ISO ID:</b> <span style="color: blue;">2121-LO40B02-3</span></p>				

## NOTES AND REMARKS

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

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



<div style="text-align: center; padding: 10px;">    </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">BILL OF MATERIAL</th> </tr> <tr> <th colspan="6" style="text-align: center;">PIPE</th> </tr> <tr> <th>ITEM</th> <th>LENGTH</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>1.1</td> <td>0,097</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> <tr> <td>1.2</td> <td>0,635</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> <tr> <th colspan="6" style="text-align: center;">WELD FITTINGS</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMETER</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> <tr> <td>2.1</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> <tr> <td>2.2</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> <tr> <td>3.1</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>45 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259145</td> </tr> <tr><td colspan="6"> </td></tr> <tr><td colspan="6" style="text-align: right;">P2308S 00503</td></tr> <tr> <td colspan="6" style="text-align: center;">   <u>2121-LO40B02-3-SP08-00503</u> </td> </tr> <tr> <td colspan="6" style="text-align: center; height: 100px;"> <span style="font-size: small;">Weld Map Sticker</span> </td> </tr> <tr> <td colspan="6" style="text-align: center;">   <b>boccard</b>          Alliance for success          Boccard Portugal, Lda.       </td> </tr> <tr> <th>Rev.</th> <th>Date</th> <th>DRW</th> <th>Check 1</th> <th>Check 2</th> <th></th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Marking Color: GREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Weld Class: QXB-55-M</td> </tr> <tr> <td>00</td> <td>04/03/2024</td> <td>ANP</td> <td>LRG</td> <td>PCO</td> <td>Paint System: NR</td> </tr> <tr> <td colspan="3">Construction Code: ASME B31.3</td> <td>% RT - YES</td> <td>% UT - NO</td> <td>Hydro: NO</td> </tr> <tr> <td colspan="3">Acc Criteria: ASME B31.3</td> <td>% PT - YES</td> <td>% FE - NO</td> <td>PWHT: NO</td> </tr> <tr> <td colspan="3">Metal Tag: YES</td> <td>% MT - NO</td> <td>% PMI - YES</td> <td>BHN% - NO</td> </tr> <tr> <td colspan="3"> </td> <td colspan="2">Tolerances: ASME B31.3</td> <td> </td> </tr> <tr> <td colspan="3"> </td> <td colspan="2">Piece Mark</td> <td>Ref. Drawing</td> </tr> <tr> <td colspan="3"> </td> <td colspan="2" rowspan="2">2121-LO40B02-3-SP08-00503</td> <td rowspan="2">Job #</td> <td rowspan="2">Spool #</td> <td rowspan="2">Project</td> </tr> <tr> <td colspan="3"> </td> <td colspan="2"></td> </tr> <tr> <td colspan="3"> </td> <td colspan="2"></td> <td rowspan="2">P2308S</td> <td rowspan="2">00503</td> <td rowspan="2">REPSOL PROJETO ALBA NERVION</td> </tr> <tr> <td colspan="3"> </td> <td colspan="2"></td> </tr> </tbody></table>	BILL OF MATERIAL						PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.1	0,097	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	1.2	0,635	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	WELD FITTINGS						ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	2.1	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133	2.2	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133	3.1	1	2"	S-10S	45 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259145																																																													P2308S 00503						 <u>2121-LO40B02-3-SP08-00503</u>						<span style="font-size: small;">Weld Map Sticker</span>						 <b>boccard</b> Alliance for success Boccard Portugal, Lda.						Rev.	Date	DRW	Check 1	Check 2							Marking Color: GREEN						Weld Class: QXB-55-M	00	04/03/2024	ANP	LRG	PCO	Paint System: NR	Construction Code: ASME B31.3			% RT - YES	% UT - NO	Hydro: NO	Acc Criteria: ASME B31.3			% PT - YES	% FE - NO	PWHT: NO	Metal Tag: YES			% MT - NO	% PMI - YES	BHN% - NO				Tolerances: ASME B31.3						Piece Mark		Ref. Drawing				2121-LO40B02-3-SP08-00503		Job #	Spool #	Project											P2308S	00503	REPSOL PROJETO ALBA NERVION					
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# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

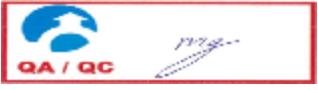
Project ALBA

Job	Spool	Piece Mark	Drawing	Rev			
Item No Tag No ID No	Qty	Size1 Sch1	Size2 Sch2	Description	Heat No MTR No Folder No	Unit Weight Kgs	Weight Kgs
<b>P2308S 00503 2121-LO40B02-3-SP08-00503</b>		<b>2121-LO40B02-3</b>		<b>00</b>			
1.1	,097	2.0000 S10S	0.0000 NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	0,38
40391							
1.2	,635	2.0000 S10S	0.0000 NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	2,50
40391							
3.1	1	2.0000 S10S	0.0000 NA	45 ELL, SEAMLESS, A403-WP304L	2K113-E002 0408	0,24	0,24
42790							
2.2	1	2.0000 S10S	0.0000 NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49
42965							
2.1	1	2.0000 S10S	0.0000 NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49
42965							

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Number of Items : 5

Total Weight : 4,10

Signature	QA	Client
	Date	Date
	 QA / QC	Sergio Morales Date: 23-10-24 

<b>CTA Group</b>	Kg 1138	Mt 305,57	Pz No.: 49
This document is reproduced by a computerized system and is conform to the original	Heat No.: S-23594	Cta's job: OC0000319	Date: 29/02/2024
Customer : TECNIMONT SPA AFC	P.O. No.: PO:		Item: I3364302

12

7500118753 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC

**SURAJ** LIMITED(AN ISO 9001 : 2015 COMPANY)  
(AN ISO 14001 : 2015 COMPANY)

(AN ISO 45001 : 2018 COMPANY)

(AN PED 2014/68/EU APPROVED COMPANY)

**WORKS :**Survey No. 779/A, Thol, Kadi - Sanand Highway,  
Tal.-Kadi, Dist. Mehsana, Gujarat (India)  
Tel. : (02764) 274216 / 27417 Fax : (02764) 274419  
Email : quality@surajgroup.com  
Visit us at www.surajgroup.com**F / QA / 24****REV. NO. 10**

REGD. OFFICE :  
'Suraj House',  
Opp. Usmanpura Garden, Ashram Road,  
Ahmedabad - 380 014, Gujarat (INDIA)  
Tel. : 0091-79-2754 0720 / 2754 0721  
Fax : 0091-79-2754 0722  
Email : suraj@surajgroup.com

**INSPECTION CERTIFICATE****In Accordance with EN 10204/3.1**

<b>Customer:</b> Commerciale Tubi Acciaio S.P.A.	<b>T.C No :</b> 680	<b>Date:</b> 26.03.2022
<b>Product :</b> Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes.	<b>P.O.No :</b> OS-0000175	<b>Date:</b> 14.10.2021
	<b>W.O.No :</b> 2122/OEP400035	<b>Date:</b> 16.10.2021

Sr. No	Specification	Grade	Heat No.	Dimensions		Quantity			Hydro Test Pressure (Psi)
				NPS	SCH	Length Mtr	Pcs	Total Meter	
27	ASTM A-312 Ed.2019 SA-312 of ASME Sec.II Part "A" Ed.2019 ASME B36.19, EN 10216-5 TC1 NACE MR 0175/ISO 15156, NACE MR 0103	TP 304/304L 1.4301/ 1.4307	S-23594	2	10S	RL	171	1075.220	1400

**Chemical Analysis %**

Heat No.	Required	C	Mn	P	S	Si	Cr	Ni	Mo	N	Ti
	Min	--	--	--	--	--	18.00	8.00	--	--	--
	Max	0.030	2.00	0.040	0.015	1.00	19.50	10.00	--	0.100	--
S-23594	Heat Analysis	0.025	1.72	0.038	0.008	0.41	18.20	8.08	--	0.079	--

**Mechanical Test**

Heat No.	Required			Gauge Width	Flattening Test	Hardness Test	Impact Test			IGC Test				
	Tensile strength Mpa	Yield strength					Max-90 HRB	100 Joule Min.(AVG)	N/A	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"				
		Rp0.2% Mpa	Rp1 % Mpa							Satisfactory				
MAX	690	--	--	--										
MIN	515	205	230	40										
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78							
	623.05	315.91	320.42	54.89			73-75							

Heat Treatment : Solution annealing conducted at 1045-1060°C temperature and rapid water quenching after final cold process.

Marking on pipes: **SURAJ LTD SPECIFICATION GRADE SIZE**CFD EN 10216-5 TC1 **EN GRADE SL NO. \_\_\_\_\_ HEAT NO. \_\_\_\_\_ P O NO. \_\_\_\_\_****Remarks:**

- \* 100% Hydro test done at required pressure for 10 second holding time found satisfactory without any leakage.
- \* 100% Visual, Dimensions(OD/THK/LENGTH) & Product Marking checked-satisfy the requirement of specification.
- \* 100% Positive Material Identification (PMI) done by SL & conforming to grade as per specification.
- \* Intergranular Corrosion Test (IGC) Conducted as per ASTM A262 Pr"E" & ISO 3651-2 method-A-No crack observed on bend portion at 20X.
- \* Pickling and Passivation Conducted as per ASTM A-380.
- \* "Approved acc.to AD 2000-MERKBLATT W0 and certified acc.to PED (2014/68/EU) by certification body for pressure equipment of TUV NORD SYSTEMS (NOTIFIED BODY,REG NO.;0045)"
- \* Tensile test piece taken from the same lot as certified and tested in longitudinal direction.
- \* Melting process:EIF+AOD & Material is free of mercury & radioactive contamination.

Prepared by

**COMMERCIALE TUBI ACCIAIO S.P.A.****QUALITY CONTROL DEPARTMENT**

For, Suraj Limited.  
C.I.Nayak  
Dept,Head Quality

Page no. 01 of 12

We hereby certify that the material described herein are in accordance with the specification and results comply with the requirements of the purchase order.

**APPLUS OBO TCM**  
28 03 24



Zhejiang Yuli Pipeline Industry Co Ltd

**Mill Test Certificate**

BAJA INDUSTRIAL ZONE SHACHEN TOWN, LONGWAN DISTRICT, WENZHOU, ZHEJIANG, CHINA

Certificate: EN10204/3.1

Certificate-No: MC-TYF-S-20080627003

Page 3 of 200

L/C NO.:32390CI003798/08

Customer: [REDACTED]	Marking:
Order No.: YL006	• Manufacture's Mark
Description: Seamless stainless steel BW fittings	• Dimension & Schedule
Specification: ANSI/ASTM B16.9, B16.25	• Material S(Seamless)orW(Welded)
Material: ASTM A403/ASME SA403-WPS-3041/3041(2005)	• Heat Number & Standard
Workmanship: Cold forming	
Heat Treatment: Solution annealing and quenched	

## Extend of material delivery:

Item No.	Description	Dimension	Quantity	Heat No.	Base Cert.No.	Remarks
1	ELB 45L/R	2" SCH10S	70	2K113-E002	200805087276014	
2						
3						
4						
5						

## Inspection Results (The requirements are fulfilled as listed in Annex):

## A. Chemical Analysis:

Heat No.	C%	Mn%	Si%	S%	P%	Cr%	Ni%	Mo%	Cu%	Ti%
	0.020	1.26	0.45	0.003	0.023	18.51	8.21			
1	2K113-E002									
2										
3										
4										
5										

## B. Mechanical Properties &amp; Tensile Inspection :

Heat No.	Yield Strength		Tensile Strength	Elongation	Hardness	Charpy Impact			
	0.2%	1%							
1	280		620	57	76				
2									
3									
4									
5									

## C. Inspection and Related Data Verify:

Dimensional check	OK	Hydrostatic pressure test	/
Surface quality inspection	OK	Radiography Examination	/
Pencuntion examination	OK	IC to ASTM A262 "E"	OK
PMI	OK	HT to NACE MR-0175	OK

## D. Remarks:

Work inspector:	
	2008.04.27.2008

Customer:

TECNIMONT S.p.A.

Order: 7500118979 - 26.01.24 - Item n.: 67 - Project: 4274 - PP+PE Sines (Portugal) EPC - Our ref.: OCVEIT202400000474

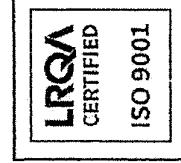
Description:

CURVE 45° LR 2" SCH.10/S SEAMLESS  
I2259145

Heat num. or Pcs. marking: 2K113-E002 - Qty:22,00

Protocol: CTCERC202400003104 \* CERTIFIED TRUE COPY

\* Issued 03-04-2024



Approved Notified Body No. 00000000000000000000  
PEO Certified by LRQA Pte Ltd, Singapore

## INSPECTION CERTIFICATE

Page  
(頁)

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Cert. to RACCORDUBI S.P.A.

**S.P. UNITED INDUSTRY SDN. BHD.**

(COMPANY NO. 368324 W)

P.T. 741745, KAWASAN PERUSAHAAN NILAI,  
71800 NILAI, NEGERI SEMBILAN DARUL KHUSUS, MALAYSIA.  
TEL: 606-7993577, 7993676, 7993677 FAX: 606-7994366  
E-mail: contactus@spunited.com.my

Order No.: 22TEC003

(注文番号)

P.O. No. : 00000150 S

Date  
(日付)

JUNE 22, 2023

Certificate No. : 23-06-1169

(証明番号)

Specification for Pipe (Raw Material)  
(材料規格)Product  
(形狀)  
(規格)

Product Specification

(規格)



Contract : P2300

Drawing : 2121-LO40B02-3

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Project : ALBA

Piece Mark : 2121-LO40B02-3-SP08-00503

Spec : QXB-55-M

## Weld data

## Welding

## Control

Weld No.	Type	Dia	Sch	Weld Proc.	1st Pass	1st MTR	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
0018	BW	2	S10S	MW.26_BW	AY	15/07/2024	4712055	AY	15/07/2024	4712055			000788	12/08/2024				000794	22/08/2024									
0019	BW	2	S10S	MW.26_BW	AY	15/07/2024	4712055	AY	15/07/2024	4712055			000788	12/08/2024				000794	22/08/2024									
0020	BW	2	S10S	MW.26_BW	AY	15/07/2024	4712055	AY	15/07/2024	4712055			000788	12/08/2024				000794	22/08/2024								000256	17/08/2024
0021	BW	2	S10S	MW.26_BW	AY	15/07/2024	4712055	AY	15/07/2024	4712055			000788	12/08/2024				000794	22/08/2024									

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 

Notes:

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Signature	Boccard Portugal QC	Client
		Sergio Morales Date: 23-10-24 
Date	26/08/2024 15:57:16	



## Shop QC Inspection Report

P2308-000812

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

Job number: P2308S  
Spool N°: 00503  
Piece Mark: 2121-LO40B02-3-SP08-00503

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

Control Date: 12/08/2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 12/08/2024  Signature 	QA/QC Inspection: GIL, MIGUEL  Date: 26/08/2024 15:57:16  Signature 	Customer Inspection: <b>Sergio Morales</b>  Date: 23-10-24  
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On behalf of Tecnimon / R  
Piping Supervisor  
Cristi Sandu   
25.10.2024

# Visual Examination Report (Welds)

P2308-000788

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00503

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B02-3-SP08-00503

Testing Date: 12/08/2024

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

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
0018	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	26	X			Direct	
0019	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	26	X			Direct	
0020	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	26	X			Direct	
0021	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	26	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: MATOS, MARCO (N2 VT/PT)

QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 12/08/2024

Date: 26/08/2024 15:57:16

Sergio Morales

Signature



Signature



Date: 23-10-24


On behalf of Tecnimon / R  
Piping Supervisor  
Cristi Sandu C. Sandu  
25.10.2024



# Positive Material Identification Report (PMI)

P2308-000794

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00503

Piece Mark: 2121-LO40B02-3-SP08-00503

Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VF-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 22/08/2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0018	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	88	0	0	0	9	69	1	19	0	0	0	X		
0019	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	87	0	0	0	8	69	1	19	0	0	0	X		
0020	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	86	0	0	0	9	69	1	19	0	0	0	X		
0021	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	85	0	0	0	9	69	1	19	0	0	0	X		
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	81	0	0	0	7	71	1	18	0	0	0	X		
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	83	0	0	0	8	71	1	17	0	0	0	X		
2.1	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	80	0	0	0	7	71	1	18	0	0	0	X		
2.2	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	84	0	0	0	8	71	1	17	0	0	0	X		
3.1	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (2K113-E002)	82	0	0	0	8	71	2	17	0	0	0	X		

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu *C. Sandu*  
25.10.2024

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

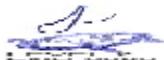
Sergio Morales

Date: 22/08/2024

Date: 26/08/2024 15:57:16

Date:

Signature



Signature



Signature

Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	88
Mode	ALLOY
Time	2024-08-22 14:30
Duration	6.83
Sequence	Final
Alloy1	304SS : 0.10
Alloy2	No Match : *2.08
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.060
Pd	< LOD	:	0.043
Ag	< LOD	:	0.147
Al	< LOD	:	80.000
Mo	0.056	±	0.011
Nb	< LOD	:	0.010
Zr	< LOD	:	0.004
Bi	< LOD	:	0.018
Pb	< LOD	:	0.015
Se	< LOD	:	0.007
W	< LOD	:	0.099
Zn	< LOD	:	0.044
Cu	< LOD	:	0.183
Ni	9.228	±	0.376
Co	< LOD	:	0.607
Fe	69.160	±	0.559
Mn	1.822	±	0.257
Cr	19.130	±	0.327
V	< LOD	:	0.171
Ti	< LOD	:	0.185

Sergio Morales

Date: 23-10-24



On behalf of Tecnicont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	87
Mode	ALLOY
Time	2024-08-22 14:30
Duration	8.86
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.042
Sn	< LOD	:	0.051
Pd	< LOD	:	0.039
Ag	< LOD	:	0.170
Al	< LOD	:	80.000
Mo	0.047	±	0.008
Nb	< LOD	:	0.009
Zr	< LOD	:	0.006
Bi	< LOD	:	0.012
Pb	< LOD	:	0.020
Se	< LOD	:	0.008
W	< LOD	:	0.071
Zn	< LOD	:	0.028
Cu	< LOD	:	0.163
Ni	8.813	±	0.315
Co	< LOD	:	0.512
Fe	69.880	±	0.471
Mn	1.789	±	0.218
Cr	19.054	±	0.278
V	< LOD	:	0.144
Ti	< LOD	:	0.152

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Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

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Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	86
Mode	ALLOY
Time	2024-08-22 14:30
Duration	8.36
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.09
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.042
Sn	< LOD	:	0.055
Pd	< LOD	:	0.040
Ag	< LOD	:	0.175
Al	< LOD	:	80.000
Mo	0.049	±	0.009
Nb	< LOD	:	0.009
Zr	< LOD	:	0.004
Bi	< LOD	:	0.008
Pb	< LOD	:	0.014
Se	< LOD	:	0.005
W	< LOD	:	0.068
Zn	< LOD	:	0.035
Cu	< LOD	:	0.174
Ni	9.140	±	0.337
Co	< LOD	:	0.542
Fe	69.456	±	0.504
Mn	1.644	±	0.228
Cr	19.309	±	0.295
V	< LOD	:	0.135
Ti	< LOD	:	0.155

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Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

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Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	85
Mode	ALLOY
Time	2024-08-22 14:30
Duration	8.68
Sequence	Final
Alloy1	304SS : 1.10
Alloy2	321SS : 1.49
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.037
Sn	< LOD	:	0.053
Pd	< LOD	:	0.036
Ag	< LOD	:	0.187
Al	< LOD	:	80.000
Mo	0.040	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.003
Bi	< LOD	:	0.017
Pb	0.030	±	0.014
Se	< LOD	:	0.007
W	< LOD	:	0.081
Zn	< LOD	:	0.023
Cu	< LOD	:	0.163
Ni	9.112	±	0.327
Co	< LOD	:	0.529
Fe	69.112	±	0.489
Mn	1.878	±	0.225
Cr	19.122	±	0.286
V	< LOD	:	0.146
Ti	< LOD	:	0.183

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

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Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	81
Mode	ALLOY
Time	2024-08-22 14:29
Duration	8.84
Sequence	Final
Alloy1	304SS : 1.34
Alloy2	No Match : 2.00
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.054
Pd	< LOD	:	0.043
Ag	< LOD	:	0.172
Al	< LOD	:	80.000
Mo	0.037	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.018
Pb	< LOD	:	0.017
Se	< LOD	:	0.009
W	< LOD	:	0.090
Zn	< LOD	:	0.042
Cu	0.209	±	0.090
Ni	7.912	±	0.321
Co	< LOD	:	0.547
Fe	71.652	±	0.498
Mn	1.423	±	0.221
Cr	18.106	±	0.286
V	< LOD	:	0.146
Ti	< LOD	:	0.163

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Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

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## Certificate of PMI Reading

XL3t-32735

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Reading No	83
Mode	ALLOY
Time	2024-08-22 14:29
Duration	10.01
Sequence	Final
Alloy1	304SS : 1.03
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.038
Sn	< LOD	:	0.048
Pd	< LOD	:	0.038
Ag	< LOD	:	0.113
Al	< LOD	:	80.000
Mo	< LOD	:	0.007
Nb	< LOD	:	0.007
Zr	< LOD	:	0.004
Bi	< LOD	:	0.006
Pb	< LOD	:	0.022
Se	< LOD	:	0.008
W	< LOD	:	0.085
Zn	< LOD	:	0.037
Cu	< LOD	:	0.142
Ni	8.167	±	0.294
Co	< LOD	:	0.493
Fe	71.924	±	0.451
Mn	1.312	±	0.197
Cr	17.985	±	0.258
V	< LOD	:	0.134
Ti	< LOD	:	0.151

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Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	80
Mode	ALLOY
Time	2024-08-22 14:29
Duration	8.44
Sequence	Final
Alloy1	304SS : 1.57
Alloy2	301SS : 2.02
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.049
Sn	< LOD	:	0.057
Pd	< LOD	:	0.046
Ag	< LOD	:	0.149
Al	< LOD	:	80.000
Mo	0.061	±	0.010
Nb	< LOD	:	0.009
Zr	< LOD	:	0.005
Bi	< LOD	:	0.011
Pb	< LOD	:	0.024
Se	< LOD	:	0.010
W	< LOD	:	0.104
Zn	< LOD	:	0.040
Cu	0.227	±	0.095
Ni	7.937	±	0.334
Co	< LOD	:	0.571
Fe	71.258	±	0.520
Mn	1.602	±	0.233
Cr	18.036	±	0.298
V	< LOD	:	0.160
Ti	< LOD	:	0.188

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	84
Mode	ALLOY
Time	2024-08-22 14:29
Duration	7.33
Sequence	Final
Alloy1	321SS : 0.76
Alloy2	No Match : 2.27
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.059
Pd	< LOD	:	0.044
Ag	< LOD	:	0.183
Al	< LOD	:	80.000
Mo	0.062	±	0.011
Nb	< LOD	:	0.006
Zr	< LOD	:	0.007
Bi	< LOD	:	0.017
Pb	< LOD	:	0.011
Se	< LOD	:	0.013
W	< LOD	:	0.107
Zn	< LOD	:	0.043
Cu	0.242	±	0.101
Ni	8.191	±	0.355
Co	< LOD	:	0.596
Fe	71.348	±	0.546
Mn	1.281	±	0.237
Cr	17.933	±	0.312
V	< LOD	:	0.165
Ti	< LOD	:	0.226

---

Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	82
Mode	ALLOY
Time	2024-08-22 14:29
Duration	7.88
Sequence	Final
Alloy1	301SS : *2.21
Alloy2	304SS : *2.26
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.051
Sn	< LOD	:	0.060
Pd	< LOD	:	0.047
Ag	< LOD	:	0.117
Al	< LOD	:	80.000
Mo	0.080	±	0.012
Nb	< LOD	:	0.006
Zr	< LOD	:	0.004
Bi	< LOD	:	0.011
Pb	< LOD	:	0.011
Se	< LOD	:	0.008
W	< LOD	:	0.112
Zn	< LOD	:	0.043
Cu	0.395	±	0.108
Ni	8.192	±	0.346
Co	< LOD	:	0.581
Fe	71.017	±	0.530
Mn	2.025	±	0.246
Cr	17.640	±	0.302
V	< LOD	:	0.164
Ti	< LOD	:	0.171

Sergio Morales

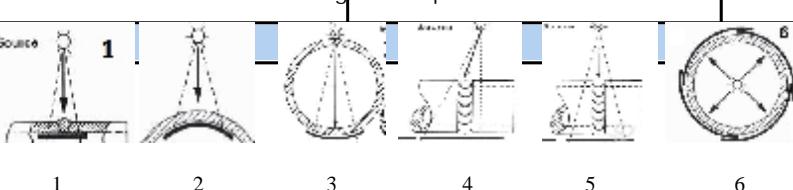
Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Contract : P2308 Spool N°: P2308S-00503  
Client : NERVION Isometric N°: 2121-LO40B02-3  
Project : ALBA Piece Mark: 2121-LO40B02-3-SP08-00503

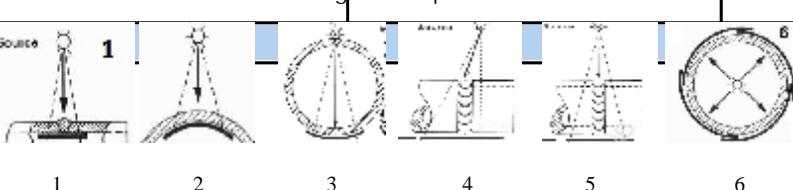
Procedure/ Instruction: Acceptance Criteria: Testing Date: Material:

4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		17/08/2024		Stainless Steel 304, 316, 317			
Equipment		Normal Fluid Film		IQI			
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): 35	Lead Sheets: 0,5	$\varnothing$ of visible wire/hole 0,0063(0,16)		Developer: G135			
Films/Casette:Single		Indication Codes (ISO 6520)		Fixer: G335			
Testing Technique							
		BB-Back Bevel EP-Excess Penetration (504) FA-Film Artifact SB-Suck Back ST-Sugared Tack					
		BW-Back Weld BT-Burn Through (510) C-Cap CP-Clustered Porosity (2012) CL-Cold Lap CR-Crack CC-Crater Crack (104) DI-Dimensional		GR-Grind Repair HL-Hi-Lo LC-Lack of Cleanup LF-Lack of Fusion (401) LP-Lack of Penetration (402) P-Porosity (2011) R-Root S-Slag (301)			
		SU-Surface T-Tungsten UC-Undercut (5011) UP-Uniformity Porosity (2013) V-Valley in Cap W-Wire WH-Worm Hole (2016) XN-Xray Film Non-Conform					
General Remarks			Notations / Symbology				
The results refer to the controlled items			- Good    / Acceptable    + Repair    = Good after Repair				
			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
0020	2.0000 S10S BW (MW.26_BW)	AY	A	500	440	NA	4	360	4.0	W4	-	RX345
0020	2.0000 S10S BW (MW.26_BW)	AY	B	500	440	NA	4	360	3.9	W4	-	RX345

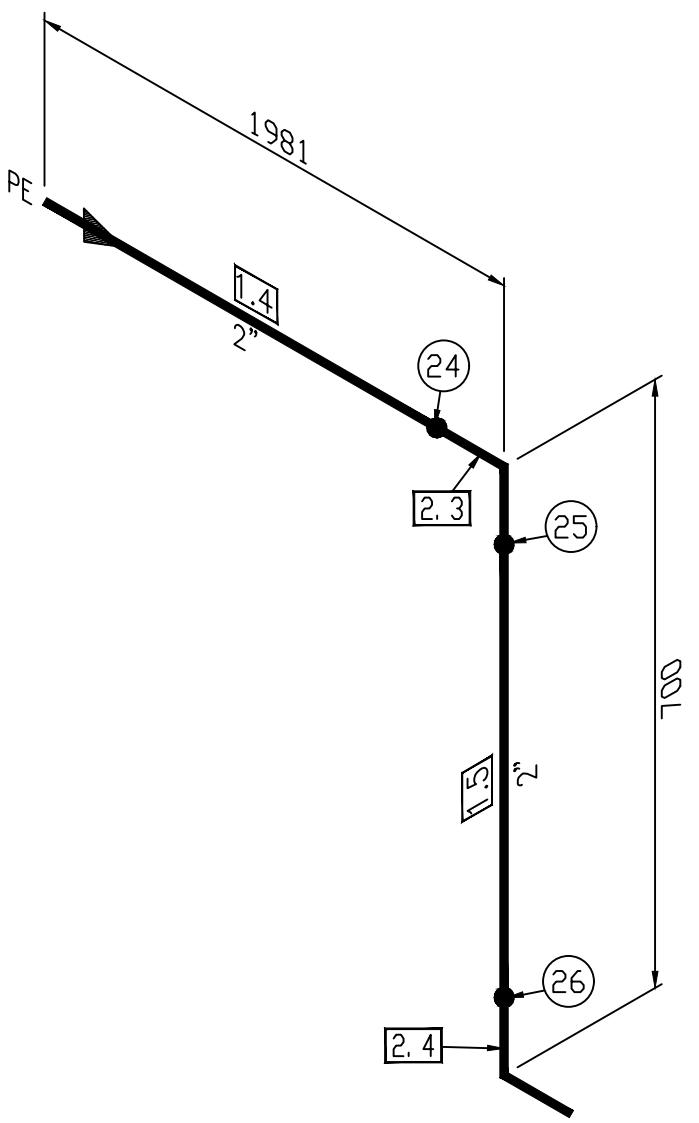
Contract : P2308 Spool N°: P2308S-00503  
Client : NERVION Isometric N°: 2121-LO40B02-3  
Project : ALBA Piece Mark: 2121-LO40B02-3-SP08-00503

Procedure/ Instruction: Acceptance Criteria: Testing Date: Material:

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Weld No.	Weld Desc. (WPS)	Welder	Position	SFD	SOD	Weld Reinf	Testing Technique	Exposure Density	Time	IQI	Indication	Decision	Remarks Code
	Performed by:	Examined by:											
Name:	GONCALVES(QA), J. (N2 PT/RT)	FIGUEIRAS(QA), RUI (N2 PT/RT)	GIL, MIGUEL										
Date:	17/08/2024	17/08/2024	26/08/2024 15:57:16										
Signature:				Sergio Morales	Date: 23-10-24								

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 

<div style="text-align: center; padding: 10px;">    <p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu <i>C. Sandu</i> 25.10.2024</p> <table border="1" style="margin-top: 10px; width: 100%;"> <tr> <th>Rev.</th> <th>Date</th> <th>DRW</th> <th>Check 1</th> <th>Check 2</th> <th>Marking Color:</th> <th>GREEN</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <th>Weld Class:</th> <td>QXB-55-M</td> </tr> <tr> <td>00</td> <td>04/03/2024</td> <td>AOM</td> <td>LRG</td> <td>PCO</td> <th>Paint System:</th> <td>NA</td> </tr> </table> <table border="1" style="margin-top: 10px; width: 100%;"> <tr> <td>Construction Code: ASME B31.3</td> <td>% RT - YES</td> <td>% UT - NO</td> <td>Hydro: NO</td> <td>ID Cleaning: YES</td> <td>Piece Mark</td> <td>Ref. Drawing</td> <td>Job #</td> <td>Spool #</td> <td>Project</td> </tr> <tr> <td>Acc Criteria: ASME B31.3</td> <td>% PT - YES</td> <td>% FE - NO</td> <td>PWHT: NO</td> <td>OD Cleaning: YES</td> <td rowspan="2">2121-LO40B02-3-SP10-00505</td> <td rowspan="2">2121-LO40B02-3</td> <td rowspan="2">P2308S</td> <td rowspan="2">00505</td> <td rowspan="2">REPSOL PROJETO ALBA NERVION</td> </tr> <tr> <td>Metal Tag: YES</td> <td>% MT - NO</td> <td>% PMI - YES</td> <td>BHN% - NO</td> <td>Tolerances: ASME B31.3</td> </tr> </table> </div>	Rev.	Date	DRW	Check 1	Check 2	Marking Color:	GREEN						Weld Class:	QXB-55-M	00	04/03/2024	AOM	LRG	PCO	Paint System:	NA	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-LO40B02-3-SP10-00505	2121-LO40B02-3	P2308S	00505	REPSOL PROJETO ALBA NERVION	Metal Tag: YES	% MT - NO	% PMI - YES	BHN% - NO	Tolerances: ASME B31.3	<div style="text-align: center; padding: 10px;"> <p><b>BILL OF MATERIAL</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6">PIPE</th> </tr> <tr> <th>ITEM</th> <th>LONGUEUR</th> <th>DIAMÉTRE</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIEL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>1.4</td> <td>1,903</td> <td>2"</td> <td>S-10s</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, PExBE</td> <td>I3364302</td> </tr> <tr> <td>1.5</td> <td>0,544</td> <td>2"</td> <td>S-10s</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> </tbody> </table>   <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6">WELD FITTINGS</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>SCH/PRESS.</th> <th>DESCRIPTION / MATERIEL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>2.3</td> <td>1</td> <td>2"</td> <td>S-10s</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> <tr> <td>2.4</td> <td>1</td> <td>2"</td> <td>S-10s</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> </tbody> </table>   <div style="text-align: right; margin-top: 10px;"> <span>P2308S 00505</span>    <span>2121-LO40B02-3-SP10-00505</span> </div> <div style="text-align: right; margin-top: 10px;">   <b>boccard</b>  Alliance for success  Boccard Portugal, Lda. </div> </div>	PIPE						ITEM	LONGUEUR	DIAMÉTRE	SCH/mm	DESCRIPTION / MATERIEL	ITEM CODE	1.4	1,903	2"	S-10s	PIPE - A312-TP304/304L DUAL GR SMLS, PExBE	I3364302	1.5	0,544	2"	S-10s	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	WELD FITTINGS						ITEM	QT	DIAMÉTRE	SCH/PRESS.	DESCRIPTION / MATERIEL	ITEM CODE	2.3	1	2"	S-10s	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133	2.4	1	2"	S-10s	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133
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# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

Project ALBA

Job	Spool	Piece Mark	Drawing	Rev						
Item No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No	Unit	Weight	Kgs
Tag No							MTR No			
ID No							Folder No			
P2308S	00505	2121-LO40B02-3-SP10-00505	2121-LO40B02-3	00						
1.4	1,903	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594	3,93	7,48	
40391							0357			
1.5	,544	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594	3,93	2,14	
40391							0357			
2.4	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696	0,49	0,49	
42965							0410			
2.3	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696	0,49	0,49	
42965							0410			

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu *C. Sandu*  
 25.10.2024

Number of Items : 4 Total Weight : 10,60

Signature	QA	Client
		Sergio Morales Date: 23-10-24
Date	2024-09-18 11:47:42	

<b>CTA Group</b>	Kg 1138	Mt 305,57	Pz No.: 49
This document is reproduced by a computerized system and is conform to the original	Heat No.: S-23594	Cta's job: OC0000319	Date: 29/02/2024
Customer : TECNIMONT SPA AFC	P.O. No.: PO:		Item: I3364302

12

7500118753 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC



F / QA / 24

REV. NO. 10

WORKS :  
 Survey No. 779/A, Thol, Kadi - Sanand Highway,  
 Tal.-Kadi, Dist. Mehsana, Gujarat (India)  
 Tel. : (02764) 274216 / 27417 Fax : (02764) 274419  
 Email : quality@surajgroup.com  
 Visit us at www.surajgroup.com

### INSPECTION CERTIFICATE

In Accordance with EN 10204/3.1

<b>Customer:</b> Commerciale Tubi Acciaio S.P.A.	<b>T.C No :</b> 680	<b>Date:</b> 26.03.2022
<b>Product :</b> Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes.	<b>P.O.No :</b> OS-0000175	<b>Date:</b> 14.10.2021
	<b>W.O.No :</b> 2122/OEP400035	<b>Date:</b> 16.10.2021

Sr. No	Specification	Grade	Heat No.	Dimensions		Quantity			Hydro Test Pressure (Psi)
				NPS	SCH	Length Mtr	Pcs	Total Meter	
27	ASTM A-312 Ed.2019 SA-312 of ASME Sec.II Part "A" Ed.2019 ASME B36.19, EN 10216-5 TC1 NACE MR 0175/ISO 15156, NACE MR 0103	TP 304/304L 1.4301/ 1.4307	S-23594	2	10S	RL	171	1075.220	1400

### Chemical Analysis %

Heat No.	Required	C	Mn	P	S	Si	Cr	Ni	Mo	N	Ti
	Min	--	--	--	--	--	18.00	8.00	--	--	--
	Max	0.030	2.00	0.040	0.015	1.00	19.50	10.00	--	0.100	--
S-23594	Heat Analysis	0.025	1.72	0.038	0.008	0.41	18.20	8.08	--	0.079	--

### Mechanical Test

Heat No.	Required			Gauge Width	Flattening Test	Hardness Test	Impact Test		IGC Test					
	Tensile strength Mpa	Yield strength					Max-90 HRB	100 Joule Min.(AVG)	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"					
		Rp0.2% Mpa	Rp1 % Mpa						N/A					
MAX	690	--	--	--										
MIN	515	205	230	40										
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78							
	623.05	315.91	320.42	54.89			73-75							

**Heat Treatment :** Solution annealing conducted at 1045-1060°C temperature and rapid water quenching after final cold process.

**Marking on pipes:** SURAJ LTD SPECIFICATION GRADE SIZE

CFD EN 10216-5 TC1 EN GRADE SL NO. \_\_\_\_\_ HEAT NO. \_\_\_\_\_ P O NO. \_\_\_\_\_

**Remarks:**

- \* 100% Hydro test done at required pressure for 10 second holding time found satisfactory without any leakage.
- \* 100% Visual, Dimensions(OD/THK/LENGTH) & Product Marking checked-satisfy the requirement of specification.
- \* 100% Positive Material Identification (PMI) done by SL & conforming to grade as per specification.
- \* Intergranular Corrosion Test (IGC) Conducted as per ASTM A262 Pr"E" & ISO 3651-2 method-A-No crack observed on bend portion at 20X.
- \* Pickling and Passivation Conducted as per ASTM A-380.
- \* "Approved acc.to AD 2000-MERKBLATT W0 and certified acc.to PED (2014/68/EU) by certification body for pressure equipment of TUV NORD SYSTEMS (NOTIFIED BODY,REG NO.;0045)"
- \* Tensile test piece taken from the same lot as certified and tested in longitudinal direction.
- \* Melting process:EIF+AOD & Material is free of mercury & radioactive contamination.

Prepared by

COMMERCIALE TUBI ACCIAIO S.P.A.

QUALITY CONTROL DEPARTMENT

For, Suraj Limited.  
C.I.Nayak  
Dept,Head Quality

Page no. 01 of 12

We hereby certify that the material described herein are in accordance with the specification and results comply with the requirements of the purchase order.

APPLUS OBO TCM  
28 03 24





Contract : P2300

Drawing : 2121-LO40B02-3

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00505

Spec : QXB-55-M

Project : ALBA

Piece Mark : 2121-LO40B02-3-SP10-00505

Weld data

Welding

Control

Weld No.	Type	Dia	Sch	Weld /Thk	Proc.	1st Pass	1st MTR	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
0024	BW	2	S10S	MW.26_BW	AE	15-07-2024	4712055	AE	15-07-2024	4712055			000789	12-08-2024				000976	14-09-2024										
0025	BW	2	S10S	MW.26_BW	AE	15-07-2024	4712055	AE	15-07-2024	4712055			000789	12-08-2024				000976	14-09-2024										
0026	BW	2	S10S	MW.26_BW	AE	15-07-2024	4712055	AE	15-07-2024	4712055			000789	12-08-2024				000976	14-09-2024										

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

Notes:

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Signature	Boccard Portugal QC	Client
	 <i>[Signature]</i>	Sergio Morales Date: 23-10-24
Date	18-09-2024 11:47:42	



# Shop QC Inspection Report

P2308-000813

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

Job number: P2308S  
 Spool N°: 00505  
 Piece Mark: 2121-LO40B02-3-SP10-00505

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

Control Date: 12-08-2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 12-08-2024  Signature 	QA/QC Inspection: GIL, MIGUEL  Date: 18-09-2024 11:47:42  Signature 	Customer Inspection:  <b>Sergio Morales</b>  Date: 23-10-24  
--	---	--

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 

# Visual Examination Report (Welds)

P2308-000789

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00505

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B02-3-SP10-00505

Testing Date: 12-08-2024

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

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Technique Used			Comments
				Accepted	Rejected	Defect	
0024	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	26	X			Direct
0025	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	26	X			Direct
0026	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	26	X			Direct

Sketch / Photo:

Defects							
Clustered Porosity	CP	Porosity	P	Cap	C	Lack of Cleanup	LC
Unibmly Porosity	UP	Slag	S	Undercut	UC	Crack	CR

Test Performed by: MATOS, MARCO (N2 VT/PT) Date: 12-08-2024 Signature 	QA/QC Inspection: GIL, MIGUEL Date: 18-09-2024 11:47:42 Signature 	Customer Inspection: <b>Sergio Morales</b> Date: 23-10-24 
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On behalf of Tecnimon / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-000976

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00505

Piece Mark: 2121-LO40B02-3-SP10-00505

Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VF-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 14-09-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0024	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	3	0	0	0	8	69	1	19	0	0	0	X		
0025	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	6	0	0	0	9	69	1	19	0	0	0	X		
0026	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	8	0	0	0	8	70	1	19	0	0	0	X		
1.4	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	2	0	0	0	8	71	1	18	0	0	0	X		
1.5	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	7	0	0	0	7	71	1	17	0	0	0	X		
2.3	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	5	0	0	0	8	71	1	18	0	0	0	X		
2.4	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	9	0	0	0	8	71	1	18	0	0	0	X		

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 14-09-2024

Date: 18-09-2024 11:47:42

Date: Sergio Morales

Signature Signature 

Signature

Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	3
Mode	ALLOY
Time	2024-09-14 06:03
Duration	8.24
Sequence	Final
Alloy1	304SS : 0.30
Alloy2	No Match : *2.11
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.058
Pd	< LOD	:	0.041
Ag	< LOD	:	0.150
Al	< LOD	:	80.000
Mo	0.047	±	0.009
Nb	< LOD	:	0.009
Zr	< LOD	:	0.005
Bi	< LOD	:	0.013
Pb	< LOD	:	0.020
Se	< LOD	:	0.008
W	< LOD	:	0.102
Zn	< LOD	:	0.039
Cu	< LOD	:	0.170
Ni	8.699	±	0.339
Co	< LOD	:	0.562
Fe	69.549	±	0.514
Mn	1.824	±	0.236
Cr	19.093	±	0.301
V	< LOD	:	0.159
Ti	< LOD	:	0.173

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	6
Mode	ALLOY
Time	2024-09-14 06:04
Duration	10.26
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.039
Sn	< LOD	:	0.045
Pd	< LOD	:	0.034
Ag	< LOD	:	0.164
Al	< LOD	:	80.000
Mo	0.054	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.005
Bi	< LOD	:	0.013
Pb	< LOD	:	0.025
Se	< LOD	:	0.008
W	< LOD	:	0.083
Zn	< LOD	:	0.018
Cu	< LOD	:	0.153
Ni	9.400	±	0.296
Co	< LOD	:	0.471
Fe	69.191	±	0.435
Mn	1.731	±	0.198
Cr	19.067	±	0.255
V	< LOD	:	0.129
Ti	< LOD	:	0.137

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	8
Mode	ALLOY
Time	2024-09-14 06:05
Duration	9.19
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.042
Sn	< LOD	:	0.050
Pd	< LOD	:	0.038
Ag	< LOD	:	0.184
Al	< LOD	:	80.000
Mo	0.054	±	0.009
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.009
Pb	< LOD	:	0.030
Se	< LOD	:	0.008
W	< LOD	:	0.087
Zn	< LOD	:	0.035
Cu	< LOD	:	0.158
Ni	8.721	±	0.307
Co	< LOD	:	0.496
Fe	70.083	±	0.463
Mn	1.719	±	0.212
Cr	19.030	±	0.272
V	< LOD	:	0.137
Ti	< LOD	:	0.152

---

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	2
Mode	ALLOY
Time	2024-09-14 06:03
Duration	7.07
Sequence	Final
Alloy1	304SS : 0.98
Alloy2	No Match : 2.00
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.048
Sn	< LOD	:	0.062
Pd	< LOD	:	0.047
Ag	< LOD	:	0.224
Al	< LOD	:	80.000
Mo	< LOD	:	0.009
Nb	< LOD	:	0.006
Zr	< LOD	:	0.004
Bi	< LOD	:	0.023
Pb	< LOD	:	0.024
Se	< LOD	:	0.014
W	< LOD	:	0.092
Zn	< LOD	:	0.033
Cu	< LOD	:	0.180
Ni	8.212	±	0.367
Co	< LOD	:	0.620
Fe	71.378	±	0.566
Mn	1.404	±	0.249
Cr	18.076	±	0.323
V	< LOD	:	0.172
Ti	< LOD	:	0.198

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu *C. Sandu*  
25.10.2024

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	7
Mode	ALLOY
Time	2024-09-14 06:05
Duration	13.18
Sequence	Final
Alloy1	304SS : 1.28
Alloy2	No Match : 1.93
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.031
Sn	< LOD	:	0.043
Pd	< LOD	:	0.032
Ag	< LOD	:	0.190
Al	< LOD	:	80.000
Mo	0.042	±	0.007
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.014
Pb	< LOD	:	0.022
Se	< LOD	:	0.006
W	< LOD	:	0.080
Zn	< LOD	:	0.028
Cu	0.266	±	0.073
Ni	7.996	±	0.251
Co	< LOD	:	0.424
Fe	71.482	±	0.390
Mn	1.565	±	0.174
Cr	17.997	±	0.223
V	< LOD	:	0.113
Ti	< LOD	:	0.130

---

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu *C. Sandu*  
25.10.2024

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	5
Mode	ALLOY
Time	2024-09-14 06:04
Duration	7.88
Sequence	Final
Alloy1	304SS : 0.55
Alloy2	No Match : *2.16
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.046
Sn	< LOD	:	0.058
Pd	< LOD	:	0.043
Ag	< LOD	:	0.165
Al	< LOD	:	80.000
Mo	0.100	±	0.013
Nb	< LOD	:	0.010
Zr	< LOD	:	0.007
Bi	< LOD	:	0.005
Pb	< LOD	:	0.032
Se	< LOD	:	0.011
W	< LOD	:	0.112
Zn	< LOD	:	0.048
Cu	0.320	±	0.103
Ni	8.268	±	0.343
Co	< LOD	:	0.567
Fe	71.291	±	0.525
Mn	1.528	±	0.235
Cr	18.083	±	0.302
V	< LOD	:	0.161
Ti	< LOD	:	0.182

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	9
Mode	ALLOY
Time	2024-09-14 06:06
Duration	10.02
Sequence	Final
Alloy1	304SS : 0.51
Alloy2	No Match : 2.41
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

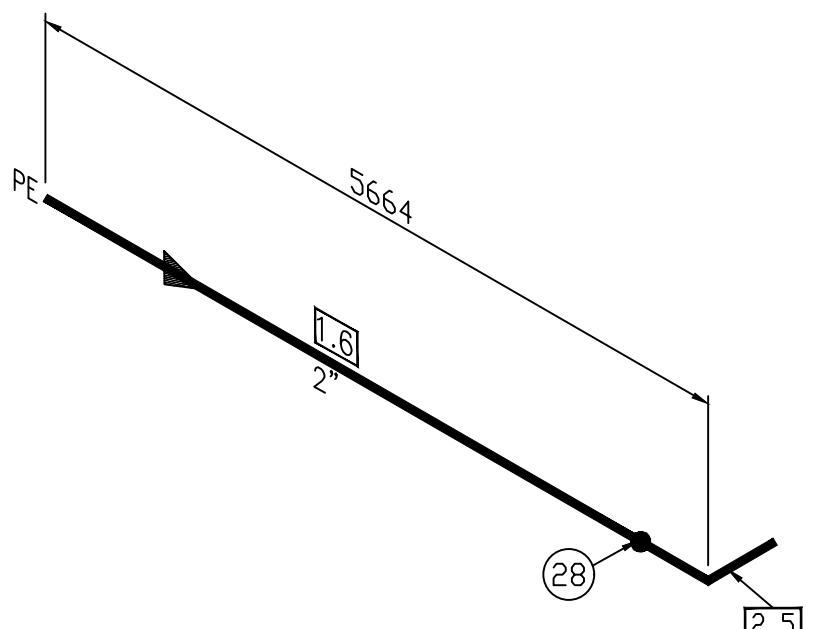
	%	±	Error
Sb	< LOD	:	0.045
Sn	< LOD	:	0.049
Pd	< LOD	:	0.038
Ag	< LOD	:	0.172
Al	< LOD	:	80.000
Mo	0.110	±	0.011
Nb	< LOD	:	0.008
Zr	< LOD	:	0.003
Bi	< LOD	:	0.009
Pb	< LOD	:	0.015
Se	< LOD	:	0.008
W	< LOD	:	0.095
Zn	< LOD	:	0.035
Cu	0.288	±	0.086
Ni	8.006	±	0.292
Co	< LOD	:	0.491
Fe	71.400	±	0.451
Mn	1.554	±	0.203
Cr	18.199	±	0.261
V	0.146	±	0.070
Ti	< LOD	:	0.139

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

<div style="text-align: center; padding: 10px;">         <p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu <i>C. Sandu</i> 25.10.2024</p> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;"><b>BILL OF MATERIAL</b></th> </tr> <tr> <th colspan="6" style="text-align: center;"><b>PIPE</b></th> </tr> <tr> <th>ITEM</th> <th>LONGUEUR</th> <th>DIAMÉTRE</th> <th>SCH/mm</th> <th>DESCRIPTION / MATÉRIEL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>1.6</td> <td>5,586</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> <tr> <td colspan="6" style="height: 100px;"></td> </tr> <tr> <th colspan="6" style="text-align: center;"><b>WELD FITTINGS</b></th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>SCH/PRESS.</th> <th>DESCRIPTION / MATÉRIEL</th> <th>ITEM CODE</th> </tr> <tr> <td>2.5</td> <td>1</td> <td>2"</td> <td>S-10S</td> <td>90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259133</td> </tr> <tr> <td colspan="6" style="height: 100px;"></td> </tr> <tr> <td colspan="6" style="text-align: right; padding-top: 10px;"> <b>P2308S 00506</b>    <b>2121-LO40B02-3-SP11-00506</b> </td> </tr> <tr> <td colspan="6" style="text-align: right; padding-top: 10px;">  <b>boccard</b>  <i>Alliance for success</i>          Boccard Portugal, Lda.       </td> </tr> <tr> <th>Rev.</th> <th>Date</th> <th>DRW</th> <th>Check 1</th> <th>Check 2</th> <th></th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Marking Color: GREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Weld Class: QXB-55-M</td> </tr> <tr> <td>00</td> <td>04/03/2024</td> <td>AOM</td> <td>LRG</td> <td>PCO</td> <td>Paint System: NA</td> </tr> <tr> <td colspan="5">Construction Code: ASME B31.3 % RT - YES % UT - NO Hydro: NO</td> <td>ID Cleaning: YES</td> <td colspan="2" style="text-align: center;">Piece Mark</td> <td colspan="2" style="text-align: center;">Ref. Drawing</td> <td>Job #</td> <td>Spool #</td> <td>Project</td> </tr> <tr> <td colspan="5">Acc Criteria: ASME B31.3 % PT - YES % FE - NO PWHT: NO</td> <td>OD Cleaning: YES</td> <td colspan="2" rowspan="2" style="text-align: center;">2121-LO40B02-3-SP11-00506</td> <td colspan="2" rowspan="2" style="text-align: center;">2121-LO40B02-3</td> <td rowspan="2">P2308S</td> <td rowspan="2">00506</td> <td rowspan="2">REPSOL PROJETO ALBA NERVION</td> </tr> <tr> <td colspan="5">Metal Tag: YES % MT - NO % PMI - YES BHN% - NO Tolerances: ASME B31.3</td> </tr> </tbody> </table>	<b>BILL OF MATERIAL</b>						<b>PIPE</b>						ITEM	LONGUEUR	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE	1.6	5,586	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302							<b>WELD FITTINGS</b>						ITEM	QT	DIAMÉTRE	SCH/PRESS.	DESCRIPTION / MATÉRIEL	ITEM CODE	2.5	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133							<b>P2308S 00506</b>  <b>2121-LO40B02-3-SP11-00506</b>						 <b>boccard</b> <i>Alliance for success</i> Boccard Portugal, Lda.						Rev.	Date	DRW	Check 1	Check 2							Marking Color: GREEN						Weld Class: QXB-55-M	00	04/03/2024	AOM	LRG	PCO	Paint System: NA	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-LO40B02-3-SP11-00506		2121-LO40B02-3		P2308S	00506	REPSOL PROJETO ALBA NERVION	Metal Tag: YES % MT - NO % PMI - YES BHN% - NO Tolerances: ASME B31.3				
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Metal Tag: YES % MT - NO % PMI - YES BHN% - NO Tolerances: ASME B31.3																																																																																																																										

# Spool Material List

Contract : P2308

Client NERVION

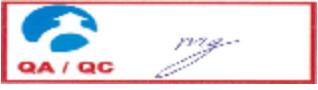
Job : P2308S

Project ALBA

Job	Spool	Piece Mark	Drawing	Rev					
Item No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No	Unit	Weight
Tag No							MTR No		Kgs
ID No							Folder No		
P2308S	00506	2121-LO40B02-3-SP11-00506	2121-LO40B02-3	00					
1.6	5,586	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	21,95
40391									
2.5	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49
42965									

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu *C. Sandu*  
 25.10.2024

Number of Items : 2 Total Weight : 22,44

Signature	QA	Client
		Sergio Morales Date: 23-10-24
Date	2024-09-10 13:58:23	

<b>CTA Group</b>	Kg 1138	Mt 305,57	Pz No.: 49
This document is reproduced by a computerized system and is conform to the original	Heat No.: S-23594	Cta's job: OC0000319	Date: 29/02/2024
Customer : TECNIMONT SPA AFC	P.O. No.: PO:		Item: I3364302

12

7500118753 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC



F / QA / 24

REV. NO. 10

WORKS :  
 Survey No. 779/A, Thol, Kadi - Sanand Highway,  
 Tal.-Kadi, Dist. Mehsana, Gujarat (India)  
 Tel. : (02764) 274216 / 27417 Fax : (02764) 274419  
 Email : quality@surajgroup.com  
 Visit us at www.surajgroup.com

### INSPECTION CERTIFICATE

In Accordance with EN 10204/3.1

<b>Customer:</b> Commerciale Tubi Acciaio S.P.A.	<b>T.C No :</b> 680	<b>Date:</b> 26.03.2022
<b>Product :</b> Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes.	<b>P.O.No :</b> OS-0000175	<b>Date:</b> 14.10.2021
	<b>W.O.No :</b> 2122/OEP400035	<b>Date:</b> 16.10.2021

Sr. No	Specification	Grade	Heat No.	Dimensions		Quantity			Hydro Test Pressure (Psi)
				NPS	SCH	Length Mtr	Pcs	Total Meter	
27	ASTM A-312 Ed.2019 SA-312 of ASME Sec.II Part "A" Ed.2019 ASME B36.19, EN 10216-5 TC1 NACE MR 0175/ISO 15156, NACE MR 0103	TP 304/304L 1.4301/ 1.4307	S-23594	2	10S	RL	171	1075.220	1400

### Chemical Analysis %

Heat No.	Required	C	Mn	P	S	Si	Cr	Ni	Mo	N	Ti
	Min	--	--	--	--	--	18.00	8.00	--	--	--
	Max	0.030	2.00	0.040	0.015	1.00	19.50	10.00	--	0.100	--
S-23594	Heat Analysis	0.025	1.72	0.038	0.008	0.41	18.20	8.08	--	0.079	--

### Mechanical Test

Heat No.	Required			Gauge Width	Flattening Test	Hardness Test	Impact Test		IGC Test					
	Tensile strength Mpa	Yield strength					Max-90 HRB	100 Joule Min.(AVG)	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"					
		Rp0.2% Mpa	Rp1 % Mpa						N/A					
MAX	690	--	--	--										
MIN	515	205	230	40										
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78							
	623.05	315.91	320.42	54.89			73-75							

**Heat Treatment :** Solution annealing conducted at 1045-1060°C temperature and rapid water quenching after final cold process.

**Marking on pipes:** SURAJ LTD SPECIFICATION GRADE SIZE

CFD EN 10216-5 TC1 EN GRADE SL NO. \_\_\_\_\_ HEAT NO. \_\_\_\_\_ P O NO. \_\_\_\_\_

**Remarks:**

- \* 100% Hydro test done at required pressure for 10 second holding time found satisfactory without any leakage.
- \* 100% Visual, Dimensions(OD/THK/LENGTH) & Product Marking checked-satisfy the requirement of specification.
- \* 100% Positive Material Identification (PMI) done by SL & conforming to grade as per specification.
- \* Intergranular Corrosion Test (IGC) Conducted as per ASTM A262 Pr"E" & ISO 3651-2 method-A-No crack observed on bend portion at 20X.
- \* Pickling and Passivation Conducted as per ASTM A-380.
- \* "Approved acc.to AD 2000-MERKBLATT W0 and certified acc.to PED (2014/68/EU) by certification body for pressure equipment of TUV NORD SYSTEMS (NOTIFIED BODY,REG NO.;0045)"
- \* Tensile test piece taken from the same lot as certified and tested in longitudinal direction.
- \* Melting process:EIF+AOD & Material is free of mercury & radioactive contamination.

Prepared by

COMMERCIALE TUBI ACCIAIO S.P.A.  
QUALITY CONTROL DEPARTMENT

SURAJ LTD  
THOL  
For, Suraj Limited.  
C.I.Nayak  
Dept,Head Quality

Page no. 01 of 12

We hereby certify that the material described herein are in accordance with the specification and results comply with the requirements of the purchase order.

APPLUS OBO TCM  
28 03 24





Contract : P2300

Drawing : 2121-LO40B02-3

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Project : ALBA

Piece Mark : 2121-LO40B02-3-SP11-00506

Spec : QXB-55-M

Weld data				Welding												Control														
Weld No.	Type	Dia /Thk	Sch Proc.	1st Pass	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		
0028	BW	2	S10S	MW.26_BW	AY	28/06/2024	4712055	AY	28/06/2024	4712055			000790	12/08/2024			000825	07/09/2024												

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

Notes:

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Boccard Portugal QC	Client
 <i>my</i>	Sergio Morales Date: 23-10-24
Signature	
Date 10/09/2024 13:58:23	



# Shop QC Inspection Report

P2308-000814

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

Job number: P2308S  
 Spool N°: 00506  
 Piece Mark: 2121-LO40B02-3-SP11-00506

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

Control Date: 12/08/2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 12/08/2024  Signature 	QA/QC Inspection: GIL, MIGUEL  Date: 10/09/2024 13:58:23  Signature 	Customer Inspection: <b>Sergio Morales</b>  Date: 23-10-24 
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On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 

# Visual Examination Report (Welds)

P2308-000790

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00506

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B02-3-SP11-00506

Testing Date: 12/08/2024

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

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
0028	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	26	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: MATOS, MARCO (N2 VT/PT)

QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 12/08/2024

Date: 10/09/2024 13:58:23

Sergio Morales

Signature



Signature



Date: 23-10-24


On behalf of Tecnimon / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-000825

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00506

Piece Mark: 2121-LO40B02-3-SP11-00506

Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VF-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 07/09/2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0028	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	713	0	0	0	8	69	1	19	0	0	0	X		
1.6	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	714	0	0	0	8	71	1	18	0	0	0	X		
2.5	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	712	0	0	0	8	71	1	18	0	0	0	X		

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 07/09/2024

Date: 10/09/2024 13:58:23

Date: Sergio Morales

Signature



Signature



Signature Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	713
Mode	ALLOY
Time	2024-09-07 13:37
Duration	4.73
Sequence	Final
Alloy1	304SS : 0.01
Alloy2	No Match : *2.06
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.070
Sn	< LOD	:	0.088
Pd	< LOD	:	0.059
Ag	< LOD	:	0.214
Al	< LOD	:	80.000
Mo	0.052	±	0.013
Nb	< LOD	:	0.012
Zr	< LOD	:	0.005
Bi	< LOD	:	0.020
Pb	< LOD	:	0.018
Se	< LOD	:	0.015
W	< LOD	:	0.148
Zn	< LOD	:	0.065
Cu	< LOD	:	0.250
Ni	8.961	±	0.483
Co	< LOD	:	0.788
Fe	69.382	±	0.726
Mn	1.438	±	0.326
Cr	19.318	±	0.428
V	< LOD	:	0.245
Ti	< LOD	:	0.226

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu *C. Sandu*  
25.10.2024

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	714
Mode	ALLOY
Time	2024-09-07 13:37
Duration	8.13
Sequence	Final
Alloy1	304SS : 0.09
Alloy2	No Match : *2.08
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.062
Pd	< LOD	:	0.048
Ag	< LOD	:	0.138
Al	< LOD	:	80.000
Mo	0.055	±	0.010
Nb	< LOD	:	0.008
Zr	< LOD	:	0.005
Bi	< LOD	:	0.018
Pb	< LOD	:	0.012
Se	< LOD	:	0.007
W	< LOD	:	0.119
Zn	< LOD	:	0.037
Cu	0.250	±	0.099
Ni	8.002	±	0.342
Co	< LOD	:	0.578
Fe	71.618	±	0.532
Mn	1.164	±	0.230
Cr	18.343	±	0.306
V	< LOD	:	0.149
Ti	< LOD	:	0.182

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

Reading No	712
Mode	ALLOY
Time	2024-09-07 13:37
Duration	9.68
Sequence	Final
Alloy1	304SS : 1.33
Alloy2	No Match : 2.75
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.045
Sn	< LOD	:	0.057
Pd	< LOD	:	0.046
Ag	< LOD	:	0.098
Al	< LOD	:	80.000
Mo	0.118	±	0.013
Nb	< LOD	:	0.009
Zr	< LOD	:	0.003
Bi	< LOD	:	0.022
Pb	< LOD	:	0.014
Se	< LOD	:	0.010
W	< LOD	:	0.108
Zn	< LOD	:	0.036
Cu	0.232	±	0.092
Ni	8.107	±	0.320
Co	0.559	±	0.272
Fe	71.033	±	0.495
Mn	1.458	±	0.219
Cr	18.213	±	0.284
V	< LOD	:	0.148
Ti	< LOD	:	0.168

Sergio Morales

Date: 23-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu

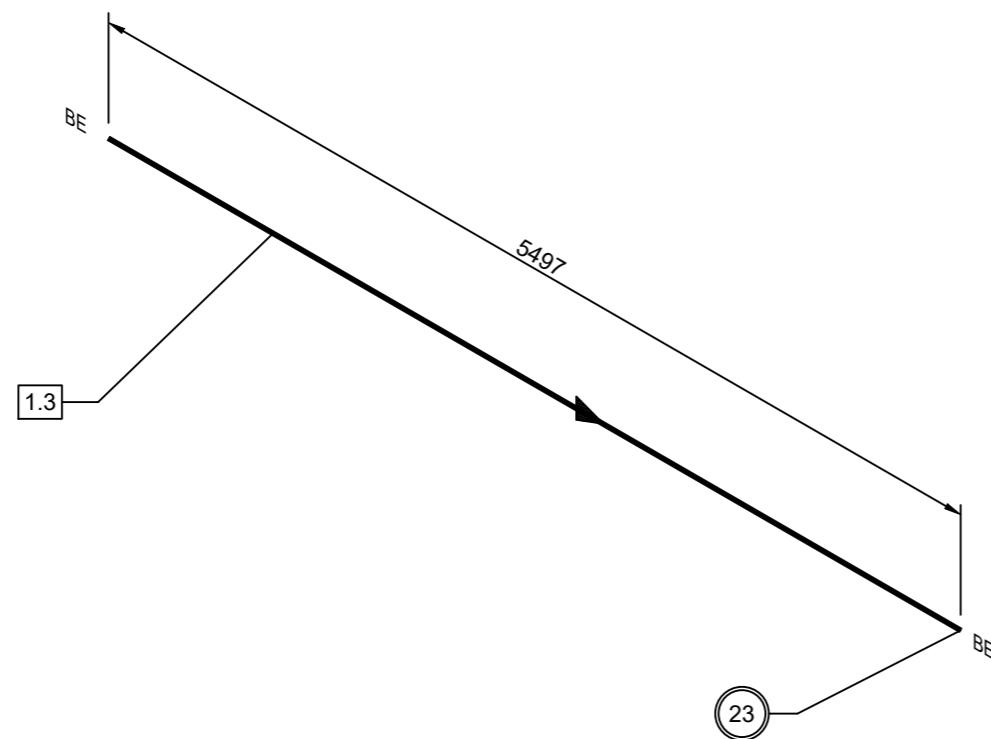


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## **BILL OF MATERIAL**

PIPE

ITEM	LONGUEUR	DIAMÈTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE
1.3	5,497	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

Rev.	Date	DRW	Check 1	Check 2	
					<b>Marking Color:</b> GREEN
					<b>Weld Class:</b> QXB-55-M
00	01/10/2024	RHA	AZA		<b>Paint System:</b> NR

Sergio Morales

Date: 23-10-24

Weld Map Sticke

P2308S 01150



2121-LO40B02-3-SP09-01150



# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

Project ALBA

Job	Spool	Piece Mark	Drawing	Rev				
Item No	Qty	Size1	Sch1	Size2	Description	Heat No	Unit	Weight
Tag No						MTR No	Weight	Kgs
ID No						Folder No		
P2308S	01150	2121-LO40B02-3-SP09-01150	2121-LO40B02-3	00				
1.3	5,497	2.0000	S10S	0.0000	NA PIPE, SEAMLESS, A312-TP304L	NY231216AS15 0391	3,93	21,60
40391								

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 *C. Sandu*

Number of Items : 1 Total Weight : 21,60

Signature	QA	Client
		Sergio Morales Date: 23-10-24 
Date	2024-10-15 14:52:51	

 Stainless Steel Experience				 DNV GL GROUP		<b>CERTIFICATO DI COLLAUDO</b> <b>WORK TEST CERTIFICATE</b>		<b>Delivery Note</b>		<b>CLIENTE:</b> PANTALONE S.R.L. <b>CUSTOMER</b> VIA DON PRIMO MAZZOLARI, 21 - Z.I. SELVAIEZZI 66100 CHIETI (CHIETI SCALO) CH							
<b>TECNICA TRE s.r.l.</b> 36061 BASSANO DEL GR. -VI- Via delle Viole, 16 - Tel. +39 0424 Fax Sede legale: Via delle Viole, 16 36061 BASSANO DEL GR. -VI- Partita Iva 02523320246 - R.I. VI-1996-149				EN 10204/3.1 DIN 50049/3.1 NR. BD24016251 DEL 11/06/24		NR. BD24016251 DEL 11/06/24		<b>RIF. DDT</b> BD24016251									

**ANALISI CHIMICA - CHEMICAL COMPOSITION**

COLATA	QTA'	CODICE	DESCRIZIONE	MATERIALE	C%	Si%	Mn%	S%	P%	Ni%	Cr%	Mo%	Al%	Cu%	Ti%	N%
HEAT NO.	Q.TY	CODE	DESCRIPTION	MATERIAL	C%	Si%	Mn%	S%	P%	Ni%	Cr%	Mo%	Al%	Cu%	Ti%	N%
			Ns. Ordine Cliente Nr. OC24017381 del 11/06/24													
			Vs. Ordine Cliente Nr. 2024-BOF-0001035 del 11/06/24													
NY231216AS1 5	134,40	946#200010304	TUBO SMLS ASTM/ASME A/SA312/A999 2" (60.3) SCH10S (2.77) AISI 304/304L	TP304/304L-1.4301/1.4307	0,022	0,4	1,37	0,001	0,035	8,03	18,34					0,076
NY231216AS1 5	106,40	946#200010304	TUBO SMLS ASTM/ASME A/SA312/A999 2" (60.3) SCH10S (2.77) AISI 304/304L	TP304/304L-1.4301/1.4307	0,022	0,4	1,37	0,001	0,035	8,03	18,34					0,076

Note - Notes

Firma  
Signature

I dati dell'analisi chimica e delle prove meccaniche corrispondono fedelmente al certificato inviato dal fabbricante del materiale base e/o dal laboratorio che ha effettuato le prove. I certificati sono conservati nel nostro archivio.  
 The chemical analysis and mechanical properties fully comply with the certificate issued by the manufacturer of the basic material and/or by the laboratory carrying out test. The certificates are kept in our archives.

 <b>TECNICATRE</b> Stainless Steel Experience  <b>TECNICA TRE s.r.l.</b> 36061 BASSANO DEL GR. -VI- Via delle Viole, 16 - Tel. +39 0424 Fax: Sede legale: Via delle Viole, 16 36061 BASSANO DEL GR. -VI- Partita Iva 02523320246 - R.I. VI-1996-149	<b>CERTIFICATO DI COLLAUDO</b> <b>WORK TEST CERTIFICATE</b>  EN 10204/3.1 DIN 50049/3.1 NR. BD24016251 DEL 11/06/24	<b>Delivery Note</b>  NR. BD24016251 DEL 11/06/24	<b>CLIENTE:</b> PANTALONE S.R.L. <b>CUSTOMER</b>  VIA DON PRIMO MAZZOLARI, 21 - Z.I. SELVAIEZZI 66100 CHIETI (CHIETI SCALO) CH
			<b>RIF. DDT</b> BD24016251

**CARATTERISTICHE MECCANICHE - MECHANICAL TEST**

COLATA Heat no.	SNERVAMENTO yield point - N/mm <sup>2</sup>	ROTTURA tensile - N/mm <sup>2</sup>	ALLUNGAMENTO elongation - %	CONTRAZIONE red of area - %	DUREZZA hardness - %
NY231216AS15	320,0	545,0	44,5	0,0	0,0
NY231216AS15	320,0	545,0	44,5	0,0	0,0

Note - Notes

Firma  
Signature

I dati dell'analisi chimica e delle prove meccaniche corrispondono fedelmente al certificato inviato dal fabbricante del materiale base e/o dal laboratorio che ha effettuato le prove. I certificati sono conservati nel nostro archivio.  
The chemical analysis and mechanical properties fully comply with the certificate issued by the manufacturer of the basic material and/or by the laboratory carrying out test. The certificates are kept in our archives.



Contract : P2300

Drawing : 2121-LO40B02-3

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Project : ALBA

Piece Mark : 2121-LO40B02-3-SP09-01150

Spec : QXB-55-M

## Weld data

## Welding

## Control

Weld No.	Type	Dia	Sch	Weld /Thk	1st Proc.	Pass	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
0023	SP	2	S10S									001102	09-10-2024																	

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

Notes:

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Boccard Portugal QC	Client
 Sergio Morales	Date: 23-10-24
Signature	

Date 15-10-2024 14:52:51



## Shop QC Inspection Report

P2308-001144

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

Job number: P2308S  
Spool N°: 01150  
Piece Mark: 2121-LO40B02-3-SP09-01150

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

Control Date: 09-10-2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT) Date: 09-10-2024 Signature 	QA/QC Inspection: RAIMUNDO, MARIANA Date: 15-10-2024 14:52:51 Signature 	Customer Inspection: <b>Sergio Morales</b> Date: 23-10-24 
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On behalf of Tecnímont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 *C. Sandu*

# Visual Examination Report (Welds)

P2308-001102

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 01150

Procedure &amp; Instructions: 4274-LZ-VF-W31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-LO40B02-3-SP09-01150

Testing Date: 09-10-2024

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

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
0023	2.0000 S10S SP-Pipe/Fitting Without Weld ()		20	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: MATOS, MARCO (N2 VT/PT)

Date: 09-10-2024

Signature



QA/QC Inspection: RAIMUNDO, MARIANA

Date: 15-10-2024 14:52:51

Signature



Customer Inspection:

Sergio Morales

Date: 23-10-24


On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-001174

Client : NERVION  
 Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 01150

Piece Mark: 2121-LO40B02-3-SP09-01150

Material:

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC11 - Rev: 1

PMI Equipment : Niton XL3t800 Serial N° 32735 (FP01)

Equipment Deviation : + - 5%

Testing Date: 14-10-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
1.3	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (NY231216AS15)	17	0	0	0	7	71	1	17	0	0	0	<input checked="" type="checkbox"/> X	<input type="checkbox"/>	

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 25.10.2024 C. Sandu

Test Performed by: GONCALVES(QA), J. (N2 PT/RT) QA/QC Inspection: RAIMUNDO, MARIANA

Customer Inspection:

Date: 14-10-2024

Date: 15-10-2024 14:52:51

Date:

Sergio Morales

Signature



Signature



Signature

Date: 23-10-24



Boccard Portugal, Lda  
Zona Industrial de Montalvo, Lote 3  
Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	17
Mode	ALLOY
Time	2024-10-14 09:10
Duration	13.18
Sequence	Final
Alloy1	304SS : 1.66
Alloy2	301SS : 1.75
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.036
Sn	< LOD	:	0.041
Pd	< LOD	:	0.032
Ag	< LOD	:	0.182
Al	< LOD	:	80.000
Mo	0.015	±	0.005
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.012
Pb	< LOD	:	0.014
Se	< LOD	:	0.005
W	< LOD	:	0.084
Zn	< LOD	:	0.023
Cu	< LOD	:	0.126
Ni	7.973	±	0.251
Co	< LOD	:	0.426
Fe	71.922	±	0.388
Mn	1.453	±	0.173
Cr	17.944	±	0.223
V	0.144	±	0.059
Ti	< LOD	:	0.120

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Sergio Morales



Date: 23-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
25.10.2024 C. Sandu