



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-310-000404_RFI5388_MOD-ITP-XL_220</b>
Rev.1			RFI Nr.: Date :
Unit	-		
Plant Area	-		
Isometric Number			
Inspection Package Number	<b>IP-WSR-P-310-000404_RFI5388 - IP Spool Release From Workshop</b>		

Sheet 01/01

The Present Inspection Package contains the following Elements:

7112-DMW64001-1-SP01-03094;7112-DMW64001-1-SP02-03093;2211-PCW70B06-1-SP03-01103;2211-DMW91Q01-3-SP09-03092;2121-IA91F63-7-SP16-00497;2121-IA91F63-7-SP15-00496;2121-IA91F63-7-SP14-00495;2121-IA91F63-2-SP08-00484;2121-IA91F62-6-SP14-00504;2121-IA91F62-6-SP15-00476;2121-IA91F62-5-S  
P12-00475;2121-IA91F62-5-SP11-00474;2121-IA91F62-5-SP10-00473;2121-IA91F62-4-SP03-00472;2121-IA91F62-4-SP02-00471;2121-IA91F62-4-SP01-00470;2121-IA91F62-2-SP09-00467;2121-IA91F62-1-SP13-00931;1211-PCW89017-1-SP03-00359;1211-PCW89017-1-SP02-00358;1211-PCW89017-1-SP01-00357;1211-PCW89012-2-SP03-01102;1211-PCW89012-2-SP02-01101;1211-PCW89009-1-SP01-00356;1211-LO89008-1-SP02-00343;1211-LO89008-1-SP01-00342;1211-DMW64001-2-SP03-03091;1127-LS50009-6-SP11-00807;1127-LS50009-6-SP10-00806;1126-LO32008-1-SP03-00841;1115-DMW64003-2-SP04-03090;1115-DMW64003-1-SP02-03071;1115-DMW63001-1-SP03-03076

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 *C. Sandu*  
21.10.2024

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	<input type="checkbox"/> Y / N	Punch List Produced
SUBCONTRACTOR	Date [DD-MMM-YYYY]	Name	Signature 			
CONTRACTOR	21-10-2024	Sergio Morales Collantes				
COMPANY						
(Free)						



Tecnimont S.p.A.

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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"

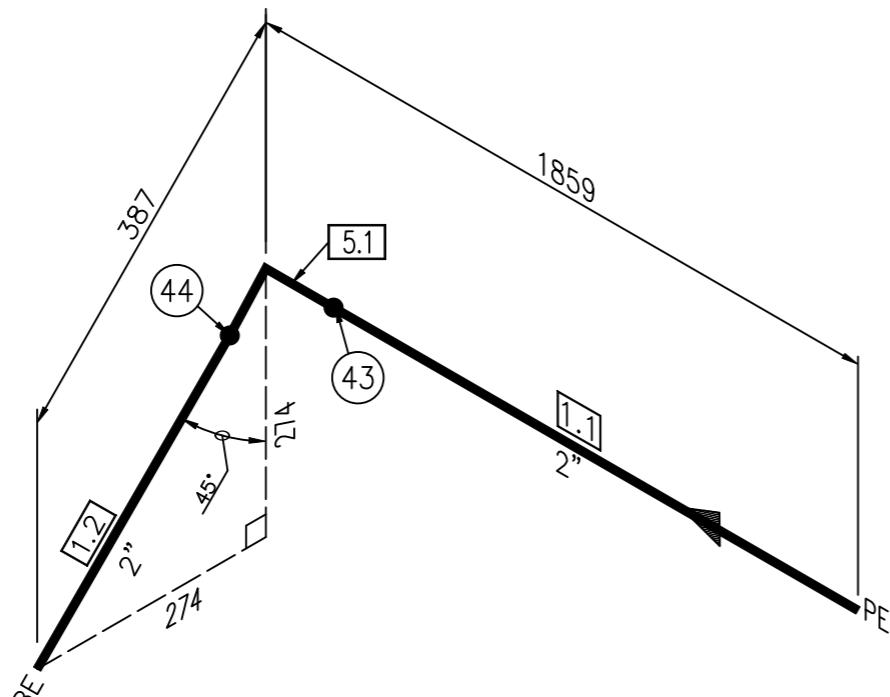
On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu C. Sandu  
21.10.2024

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
			Date [DD-MMM-YYYY]	Name		Signature
SUBCONTRACTOR			21-10-2024	Sergio Morales Collantes		
CONTRACTOR						
COMPANY						
(Free)						

 <b>Tecnimont</b> <small>Engineering Construction</small>	<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
SHEET 1 / 1	DOC.CLASS 1	ISSUE 01			
 <b>MECWIDE</b> <small>Engineering Construction</small>  <b>Arup</b> <small>Managing Infrastructure</small>	<p><b>ISO ID:</b> <a href="#">2121-IA91F62-5</a></p>				

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



	<b>BILL OF MATERIAL</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5">PIPE</th> <th colspan="2"></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>1.1</td> <td>1,781</td> <td>2"</td> <td>S-10s</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, PExBE</td> <td>I3364302</td> </tr> <tr> <td>1.2</td> <td>0,309</td> <td>2"</td> <td>S-10s</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> </tbody> </table> <b>WELD FITTINGS</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5">WELD FITTINGS</th> <th colspan="2"></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> </thead> <tbody> <tr> <td>5.1</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> </tbody> </table>							PIPE							ITEM	LONGUEUR	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE	1.1	1,781	2"	S-10s	PIPE - A312-TP304/304L DUAL GR SMLS, PExBE	I3364302	1.2	0,309	2"	S-10s	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	WELD FITTINGS							ITEM	QT	DIAMÉTRE	SCH/PRESS.	DESCRIPTION / MATÉRIEL	ITEM CODE	5.1	1	2"	S-10s	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133
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<p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu 18.10.2024 </p>																																																			
Rev.	Date	DRW	Check 1	Check 2	<p><b>Sergio Morales</b></p> <p>Date: 15-10-24</p> 																																														
				Marking Color: GREEN																																															
01	22/05/2024	SLU	OPE					Weld Class: 6C4-M																																											
00	01/03/2024	AOM	MCM	PCO	Paint System: NA	<p><b>P2308S 00473</b></p>  <p>2121-IA91F62-5-SP10-00473</p> <p><b>Weld Map Sticker</b></p>																																													
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F324-302-0																																																			

# 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 00473 2121-IA91F62-5-SP10-00473</b>		<b>2121-IA91F62-5</b>		<b>01</b>			
1.2	,309 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	1,21
40391							
1.1	1,781 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	7,00
40391							
5.1	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  
 18.10.2024 *C. Sandu*

Number of Items : **3** Total Weight : **8,70**

Signature	QA	Client
	Date	Date
	 <i>[Signature]</i>	Sergio Morales Date: 15-10-24 

<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



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						ASTM A-262							
		Rp0.2% Mpa	Rp1 % Mpa					Practice"E" & ISO 3651-2	Method "A"						
MAX	690	--	--	--				Max-90 HRB	100 Joule Min.(AVG)						
MIN	515	205	230	40											
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78	73-75	N/A		Satisfactory				

**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.

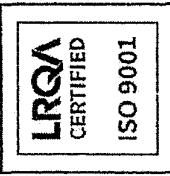
QUALITY CONTROL DEPARTMENT

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



Approved No:1509001-00400  
PCO Cert No:0343/P/2014/10/007/3

## INSPECTION CERTIFICATE



RACCORDI TUBI S.P.A.

TECNIMONT S.p.A.

Order No.: 22TEC003  
(注文番号)

P.O. No. : 00000150 S

### Chemical Composition of Pipe (Raw Material) %

BENTON \* 11-12-2015 - VACANCY ADVERTISEMENT - ISO 15156-2:2015 - MPA102:2015

Remarks \* Hardness acc. to NACE MR0175 / ISO 15156-3:2015, MRL 01/03-2015  
INTERGRANULAR CORROSION TEST (ASTM A362(E)-OK, PIN/CHICK GOOD, ISO 9001 / EN 10204-3.1 PED 2014/68/EU ANNEX I SECTION 4.3

HEAT TREATMENT 1050 DEGREE CELCIUS QUENCHED IN WATER WITHIN 1 MINUTES TO BELOW 40°C.  
MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH INDICATED SPECIFICATIONS AND WAS FOUND TO MEET THE REQUIREMENTS. NO  
WELD REPAIR WAS PERFORMED AND ALL ITEMS SUPPLIED ARE FREE OF WELD REPAIR.  
MATERIAL IS FREE OF MERCURY CONTAMINATION AND RADIOACTIVITY.

We herewith certify that the above products meet the requirements of the relevant standard and of the customer order.

(上記の製品は、当社が規格及び、下記の要件に適合するとして表明します。)

We herewith certify that the above products meet the requirements of the relevant standard and of the customer order.  
（上記の製品は、当該規格及び、下記文の要件に適合するところを証明します。）

Head of QA/QC Dept  
质量/品管经理

Protocol: CTCERC202400003104 \* CERTIFIED TRUE COPY

\* Issued 03-04-2024



Contract : P2300

Drawing : 2121-IA91F62-5

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 01

Spool : 00473

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F62-5-SP10-00473

## Weld data

## Welding

## Control

Weld No.	Type	Dia	Sch	Weld /Thk	1st Proc.	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
0043	BW	2	S10S	MW.26_BW	AE	11-07-2024	4712055	AE	11-07-2024	4712055			000852	28-08-2024				000870	07-09-2024										
0044	BW	2	S10S	MW.26_BW	AE	11-07-2024	4712055	AE	11-07-2024	4712055			000852	28-08-2024				000870	07-09-2024										

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024

Notes:

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Signature	Boccard Portugal QC	Client
		Sergio Morales Date: 15-10-24
Date	11-09-2024 16:07:54	



# Shop QC Inspection Report

P2308-000884

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

Job number: P2308S  
 Spool N°: 00473  
 Piece Mark: 2121-IA91F62-5-SP10-00473

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

Control Date: 28-08-2024

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: 28-08-2024  Signature 	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 11-09-2024 16:07:54  Signature 	Customer Inspection: <b>Sergio Morales</b>  Date: 15-10-24  
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On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 

# Visual Examination Report (Welds)

P2308-000852

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00473

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

Project : ALBA

Piece Mark: 2121-IA91F62-5-SP10-00473

Testing Date: 28-08-2024

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
0043	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	23	X			Direct	
0044	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	23	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: RAIMUNDO, MARIANA

Customer Inspection:

Date: 28-08-2024

Sergio Morales

Signature



Date: 11-09-2024 16:07:54

Date: 15-10-24

Signature


On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-000870

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00473

Piece Mark: 2121-IA91F62-5-SP10-00473

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			
0043	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	265	0	0	0	8	70	1	18	0	0	0	X		
0044	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	263	0	0	0	8	69	1	19	0	0	0	X		
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	266	0	0	0	8	71	1	18	0	0	0	X		
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	262	0	0	0	8	71	1	18	0	0	0	X		
5.1	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	264	0	0	0	8	71	1	18	0	0	0	X		

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 *C. Sandu*

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

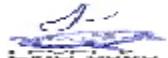
Customer Inspection:

Date: 07-09-2024

Date: 11-09-2024 16:07:54

Sergio Morales

Signature



Signature



Signature

Date: 15-10-24



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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	265
Mode	ALLOY
Time	2024-09-07 07:54
Duration	8.66
Sequence	Final
Alloy1	304SS : 0.77
Alloy2	No Match : 1.63
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.047
Sn	< LOD	:	0.053
Pd	< LOD	:	0.044
Ag	< LOD	:	0.152
Al	< LOD	:	80.000
Mo	0.034	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.005
Bi	< LOD	:	0.008
Pb	< LOD	:	0.021
Se	< LOD	:	0.009
W	< LOD	:	0.097
Zn	< LOD	:	0.031
Cu	< LOD	:	0.175
Ni	8.737	±	0.332
Co	< LOD	:	0.542
Fe	70.237	±	0.503
Mn	1.512	±	0.225
Cr	18.853	±	0.293
V	< LOD	:	0.148
Ti	< LOD	:	0.184

---

Sergio Morales



Date: 15-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 *C. Sandu*

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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	263
Mode	ALLOY
Time	2024-09-07 07:54
Duration	7.12
Sequence	Final
Alloy1	304SS : 0.13
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.063
Pd	< LOD	:	0.044
Ag	< LOD	:	0.160
Al	< LOD	:	80.000
Mo	0.043	±	0.010
Nb	< LOD	:	0.009
Zr	< LOD	:	0.005
Bi	< LOD	:	0.018
Pb	< LOD	:	0.023
Se	< LOD	:	0.008
W	< LOD	:	0.103
Zn	< LOD	:	0.043
Cu	< LOD	:	0.187
Ni	8.732	±	0.365
Co	< LOD	:	0.604
Fe	69.801	±	0.552
Mn	1.654	±	0.251
Cr	19.026	±	0.323
V	< LOD	:	0.170
Ti	< LOD	:	0.147

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

Reading No	266
Mode	ALLOY
Time	2024-09-07 07:55
Duration	9.14
Sequence	Final
Alloy1	304SS : 1.22
Alloy2	No Match : 1.84
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.043
Sn	< LOD	:	0.051
Pd	< LOD	:	0.036
Ag	< LOD	:	0.211
Al	< LOD	:	80.000
Mo	0.047	±	0.008
Nb	< LOD	:	0.005
Zr	< LOD	:	0.003
Bi	< LOD	:	0.012
Pb	< LOD	:	0.016
Se	< LOD	:	0.006
W	< LOD	:	0.103
Zn	< LOD	:	0.028
Cu	0.181	±	0.084
Ni	8.295	±	0.305
Co	< LOD	:	0.510
Fe	71.132	±	0.467
Mn	1.378	±	0.206
Cr	18.170	±	0.269
V	< LOD	:	0.143
Ti	< LOD	:	0.173

Sergio Morales



Date: 15-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	262
Mode	ALLOY
Time	2024-09-07 07:54
Duration	12.05
Sequence	Final
Alloy1	304SS : 0.11
Alloy2	No Match : 2.25
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.041
Sn	0.060	±	0.026
Pd	< LOD	:	0.037
Ag	< LOD	:	0.114
Al	< LOD	:	80.000
Mo	0.062	±	0.009
Nb	< LOD	:	0.007
Zr	< LOD	:	0.004
Bi	< LOD	:	0.007
Pb	< LOD	:	0.020
Se	< LOD	:	0.007
W	< LOD	:	0.084
Zn	< LOD	:	0.027
Cu	0.193	±	0.076
Ni	8.042	±	0.274
Co	< LOD	:	0.460
Fe	71.664	±	0.422
Mn	1.547	±	0.190
Cr	18.087	±	0.243
V	< LOD	:	0.121
Ti	< LOD	:	0.137

---

Sergio Morales



Date: 15-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

Reading No	264
Mode	ALLOY
Time	2024-09-07 07:54
Duration	8.53
Sequence	Final
Alloy1	304SS : 0.95
Alloy2	No Match : *2.15
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

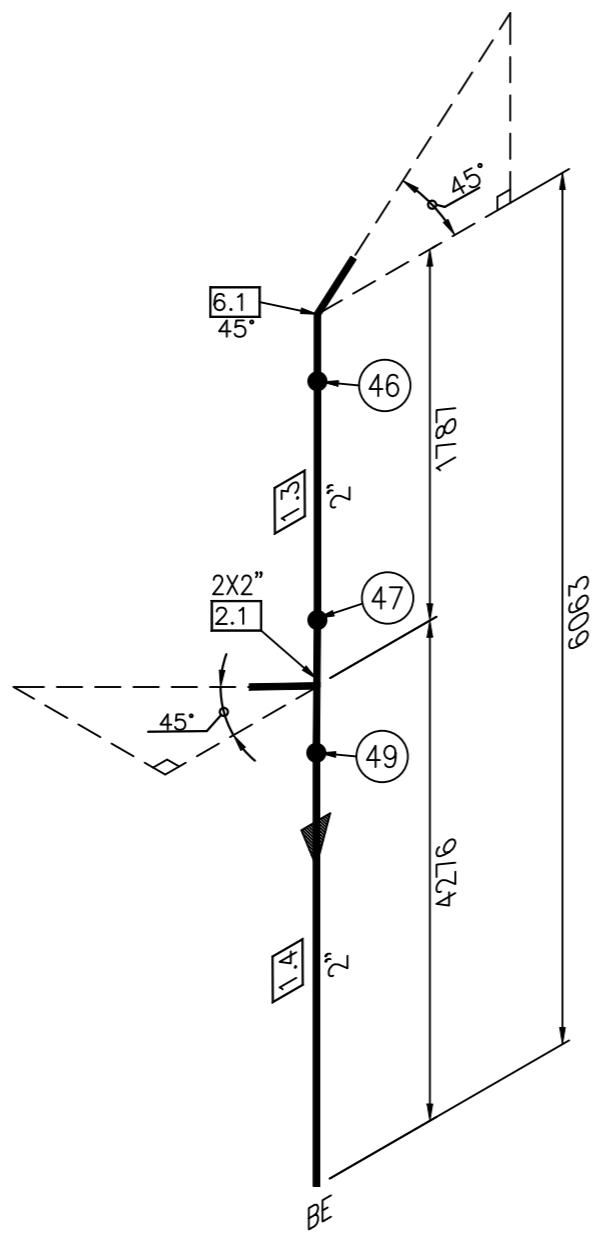
	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.060
Pd	< LOD	:	0.043
Ag	< LOD	:	0.166
Al	< LOD	:	80.000
Mo	< LOD	:	0.009
Nb	< LOD	:	0.006
Zr	< LOD	:	0.004
Bi	< LOD	:	0.012
Pb	< LOD	:	0.030
Se	< LOD	:	0.009
W	< LOD	:	0.112
Zn	< LOD	:	0.032
Cu	< LOD	:	0.159
Ni	8.248	±	0.346
Co	< LOD	:	0.581
Fe	71.323	±	0.530
Mn	1.443	±	0.236
Cr	18.294	±	0.306
V	< LOD	:	0.162
Ti	< LOD	:	0.181

Sergio Morales



Date: 15-10-24

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

 	<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>1.3</td> <td>1,684</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> <tr> <td>1.4</td> <td>4,210</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" 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> </thead> <tbody> <tr> <td>2.1</td> <td>1</td> <td>2" x 2"</td> <td>S-10S</td> <td>STRAIGHT TEE ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259149</td> </tr> <tr> <td>6.1</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> </tbody> </table> <div style="display: flex; justify-content: space-between;"> <div style="flex: 1; text-align: right; padding-right: 10px;"> <p><b>P2308S 00474</b></p>  <p>2121-IA91F62-5-SP11-00474</p> </div> <div style="flex: 1; text-align: left; padding-left: 10px;"> <p><b>Weld Map Sticker</b></p> </div> </div>	BILL OF MATERIAL						PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.3	1,684	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	1.4	4,210	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" x 2"	S-10S	STRAIGHT TEE ASME B16.9 A403-WP304/304L DG BE SMLS	I2259149	6.1	1	2"	S-10S	45 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259145										
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F324-302-0																																																																	

# 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	00474	2121-IA91F62-5-SP11-00474	2121-IA91F62-5	01						
1.3	1,684	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	6,62	
40391										
1.4	4,21	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	16,55	
40391										
6.1	1	2.0000	S10S	0.0000	NA	45 ELL, SEAMLESS, A403-WP304L	2K113-E002 0408	0,24	0,24	
42790										
2.1	1	2.0000	S10S	0.0000	NA	TEE, SEAMLESS, A403-WP304L	MN012-1 0430	0,78	0,78	
44252										

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 *C. Sandu*

Number of Items : 4 Total Weight : 24,18

Signature	QA	Client
		Sergio Morales Date: 15-10-24
Date	2024-09-11 16:53:50	

<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-3041/304L(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:	
Date: 2008-04-27	

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





Contract : P2300

Drawing : 2121-IA91F62-5

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 01

Spool : 00474

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F62-5-SP11-00474

Weld data				Welding												Control													
Weld No.	Type	Dia /Thk	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	
0046	BW	2	S10S	MW.26_BW	AE	11-07-2024	4712055	AE	11-07-2024	4712055			000928	11-09-2024			000864	07-09-2024											
0047	BW	2	S10S	MW.26_BW	AE	11-07-2024	4712055	AE	11-07-2024	4712055			000928	11-09-2024			000864	07-09-2024											
0049	BW	2	S10S	MW.26_BW	AE	11-07-2024	4712055	AE	11-07-2024	4712055			000928	11-09-2024			000864	07-09-2024											

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

Notes:

Boccard Portugal QC	Client
	Sergio Morales Date: 15-10-24
11-09-2024 16:53:50	



# Shop QC Inspection Report

P2308-000962

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

Job number: P2308S  
 Spool N°: 00474  
 Piece Mark: 2121-IA91F62-5-SP11-00474

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

Control Date: 11-09-2024

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Spool Barcode label printed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Spool is identified with the metal tag	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Spool stencil required (hard stamp low stress)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Joint preparation & cleanliness / spool dimensions checked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Level, plumb, Two holes, flanges and internal alignment, Squareness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Material checked (type of material, rate, heat numbers, filler material, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Welders list match with actual welder stencil / Id. on pipe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PWHT- Spool identified as per Procedure / Instruction for PWHT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HT ( Hardness Test)- Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PMI - Welds identified as per Procedure / Instruction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FE (Ferrite test) - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UT - Welds identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spool identified (by marker) as per Procedure / Instruction (Job number, sheet number and Paint type if required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydro - Spool identified as per Procedure / Instruction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cleanliness - Cleaned inside free of slag, scale, sand, weld spatter, cutting chips, etc. and blow out by compressed air	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Comments:

Controlado 29/08/2024

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 11-09-2024  Signature 	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 11-09-2024 16:53:50  Signature 	Customer Inspection: <b>Sergio Morales</b>  Date: 15-10-24  
--	--	--

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 

# Visual Examination Report (Welds)

P2308-000928

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00474

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

Project : ALBA

Piece Mark: 2121-IA91F62-5-SP11-00474

Testing Date: 11-09-2024

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.	Identification		Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
		AE	29							
0046	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	29	X					Direct	Controlado 29/08/2024
0047	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	29	X					Direct	Controlado 29/08/2024
0049	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	29	X					Direct	Controlado 29/08/2024

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: RAIMUNDO, MARIANA

Customer Inspection:

Date: 11-09-2024

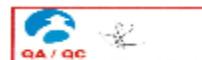
Date: 11-09-2024 16:53:50

Sergio Morales

Signature



Signature



Date: 15-10-24


On behalf of Tecnimon / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-000864

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00474

Piece Mark: 2121-IA91F62-5-SP11-00474

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			
0046	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	514	0	0	0	8	70	1	18	0	0	0	X		
0047	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	516	0	0	0	8	70	1	18	0	0	0	X		
0049	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	518	0	0	0	7	70	1	19	0	0	0	X		
1.3	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	515	0	0	0	7	71	1	18	0	0	0	X		
1.4	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	519	0	0	0	8	71	1	18	0	0	0	X		
2.1	2.0000 S10S TEE, SEAMLESS, A403-WP304L (MN012-1)	517	0	0	0	8	71	1	18	0	0	0	X		
6.1	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (2K113-E002)	513	0	0	0	8	70	1	17	0	0	0	X		

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024

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

Date: 07-09-2024

Signature

Date: 11-09-2024 16:53:50

Signature

Customer Inspection:

Sergio Morales

Date:

Signature Date: 15-10-24



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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	514
Mode	ALLOY
Time	2024-09-07 10:42
Duration	6.66
Sequence	Final
Alloy1	304SS : 0.50
Alloy2	No Match : *2.13
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.073
Sn	< LOD	:	0.082
Pd	< LOD	:	0.063
Ag	< LOD	:	0.179
Al	< LOD	:	80.000
Mo	0.060	±	0.014
Nb	< LOD	:	0.014
Zr	< LOD	:	0.007
Bi	< LOD	:	0.032
Pb	< LOD	:	0.020
Se	< LOD	:	0.014
W	< LOD	:	0.167
Zn	< LOD	:	0.063
Cu	< LOD	:	0.252
Ni	8.643	±	0.472
Co	< LOD	:	0.785
Fe	70.004	±	0.717
Mn	1.603	±	0.322
Cr	18.697	±	0.416
V	< LOD	:	0.231
Ti	< LOD	:	0.235

---

Sergio Morales  
Date: 15-10-24



On behalf of Tecnímont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

Reading No	516
Mode	ALLOY
Time	2024-09-07 10:42
Duration	4.98
Sequence	Final
Alloy1	304SS : 1.05
Alloy2	No Match : *2.34
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.085
Sn	< LOD	:	0.085
Pd	< LOD	:	0.070
Ag	< LOD	:	0.205
Al	< LOD	:	80.000
Mo	0.043	±	0.014
Nb	< LOD	:	0.014
Zr	< LOD	:	0.008
Bi	< LOD	:	0.024
Pb	< LOD	:	0.031
Se	< LOD	:	0.015
W	< LOD	:	0.189
Zn	< LOD	:	0.052
Cu	< LOD	:	0.255
Ni	8.465	±	0.499
Co	< LOD	:	0.834
Fe	70.021	±	0.765
Mn	1.958	±	0.352
Cr	18.697	±	0.442
V	< LOD	:	0.220
Ti	< LOD	:	0.250

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	518
Mode	ALLOY
Time	2024-09-07 10:44
Duration	6.10
Sequence	Final
Alloy1	304SS : 1.44
Alloy2	No Match : *2.57
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.049
Sn	< LOD	:	0.070
Pd	< LOD	:	0.049
Ag	< LOD	:	0.141
Al	< LOD	:	80.000
Mo	0.035	±	0.010
Nb	< LOD	:	0.010
Zr	< LOD	:	0.008
Bi	< LOD	:	0.012
Pb	< LOD	:	0.013
Se	< LOD	:	0.011
W	< LOD	:	0.125
Zn	< LOD	:	0.040
Cu	< LOD	:	0.194
Ni	7.863	±	0.385
Co	< LOD	:	0.654
Fe	70.455	±	0.605
Mn	1.876	±	0.281
Cr	19.298	±	0.357
V	< LOD	:	0.191
Ti	< LOD	:	0.208

---

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

Reading No	515
Mode	ALLOY
Time	2024-09-07 10:42
Duration	6.87
Sequence	Final
Alloy1	304SS : 1.23
Alloy2	No Match : 2.28
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.054
Sn	< LOD	:	0.067
Pd	< LOD	:	0.051
Ag	< LOD	:	0.188
Al	< LOD	:	80.000
Mo	0.046	±	0.011
Nb	< LOD	:	0.007
Zr	< LOD	:	0.005
Bi	< LOD	:	0.009
Pb	< LOD	:	0.023
Se	< LOD	:	0.006
W	< LOD	:	0.126
Zn	< LOD	:	0.048
Cu	0.248	±	0.111
Ni	7.983	±	0.383
Co	< LOD	:	0.653
Fe	71.338	±	0.591
Mn	1.443	±	0.263
Cr	18.165	±	0.341
V	< LOD	:	0.172
Ti	< LOD	:	0.207

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	519
Mode	ALLOY
Time	2024-09-07 10:44
Duration	6.95
Sequence	Final
Alloy1	304SS : 0.45
Alloy2	No Match : 1.71
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.058
Sn	< LOD	:	0.071
Pd	< LOD	:	0.060
Ag	< LOD	:	0.127
Al	< LOD	:	80.000
Mo	< LOD	:	0.012
Nb	< LOD	:	0.009
Zr	< LOD	:	0.006
Bi	< LOD	:	0.014
Pb	< LOD	:	0.025
Se	< LOD	:	0.014
W	< LOD	:	0.162
Zn	< LOD	:	0.053
Cu	< LOD	:	0.209
Ni	8.144	±	0.413
Co	< LOD	:	0.689
Fe	71.897	±	0.638
Mn	1.287	±	0.278
Cr	18.072	±	0.365
V	< LOD	:	0.194
Ti	< LOD	:	0.226

---

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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

## Certificate of PMI Reading

XL3t-32735

---

Reading No	517
Mode	ALLOY
Time	2024-09-07 10:43
Duration	67.92
Sequence	Final
Alloy1	304SS : 0.84
Alloy2	No Match : *2.76
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.026
Sn	< LOD	:	0.032
Pd	< LOD	:	0.026
Ag	< LOD	:	0.178
Al	< LOD	:	80.000
Mo	< LOD	:	0.006
Nb	< LOD	:	0.005
Zr	< LOD	:	0.003
Bi	< LOD	:	0.005
Pb	< LOD	:	0.011
Se	< LOD	:	0.005
W	< LOD	:	0.065
Zn	< LOD	:	0.022
Cu	< LOD	:	0.088
Ni	8.201	±	0.174
Co	0.388	±	0.140
Fe	71.285	±	0.243
Mn	1.640	±	0.118
Cr	18.105	±	0.107
V	0.135	±	0.017
Ti	< LOD	:	0.024

---

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 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	513
Mode	ALLOY
Time	2024-09-07 10:41
Duration	13.39
Sequence	Final
Alloy1	304SS : 1.69
Alloy2	No Match : *1.90
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

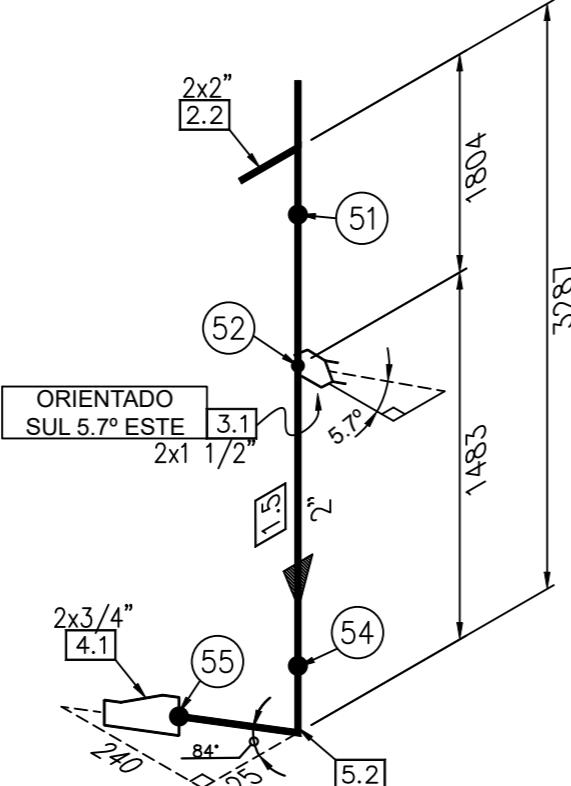
	%	±	Error
Sb	< LOD	:	0.046
Sn	< LOD	:	0.060
Pd	< LOD	:	0.048
Ag	< LOD	:	0.183
Al	< LOD	:	80.000
Mo	0.131	±	0.013
Nb	< LOD	:	0.007
Zr	< LOD	:	0.005
Bi	< LOD	:	0.010
Pb	< LOD	:	0.018
Se	< LOD	:	0.012
W	< LOD	:	0.119
Zn	< LOD	:	0.047
Cu	0.609	±	0.110
Ni	8.327	±	0.313
Co	< LOD	:	0.516
Fe	70.998	±	0.475
Mn	1.509	±	0.211
Cr	17.807	±	0.271
V	< LOD	:	0.144
Ti	< LOD	:	0.151

---

Sergio Morales  
Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

		<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>1.5</td> <td>3,143</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" 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> </thead> <tbody> <tr> <td>2.2</td> <td>1</td> <td>2" x 2"</td> <td>S-10S</td> <td>STRAIGHT TEE ASME B16.9 A403-WP304/304L DG BE SMLS</td> <td>I2259149</td> </tr> <tr> <td>4.1</td> <td>1</td> <td>2" x 3/4"</td> <td>S-10S x S-40S</td> <td>ECCENTRIC SWAGE MSS SP-95 - A403-WP304/304L DG BE PE SMLS</td> <td>I2495783</td> </tr> <tr> <td>5.2</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> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">FORGINGS</th> </tr> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMETER</th> <th>SCH/PRESS.</th> <th>DESCRIPTION / MATERIAL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>3.1</td> <td>1</td> <td>2" x 1 1/2"</td> <td>3000#</td> <td>REDUCING SOCKOLET MSS-SP-97 3000# A182-F304/304L DUAL GR BE SWE</td> <td>I2258341</td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>P2308S 00475</p>  <p>2121-IA91F62-5-SP12-00475</p> </div> <div style="width: 45%;"> <p>Weld Map Sticker</p> </div> </div>	BILL OF MATERIAL						PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.5	3,143	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	WELD FITTINGS						ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	2.2	1	2" x 2"	S-10S	STRAIGHT TEE ASME B16.9 A403-WP304/304L DG BE SMLS	I2259149	4.1	1	2" x 3/4"	S-10S x S-40S	ECCENTRIC SWAGE MSS SP-95 - A403-WP304/304L DG BE PE SMLS	I2495783	5.2	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133	FORGINGS						ITEM	QT	DIAMETER	SCH/PRESS.	DESCRIPTION / MATERIAL	ITEM CODE	3.1	1	2" x 1 1/2"	3000#	REDUCING SOCKOLET MSS-SP-97 3000# A182-F304/304L DUAL GR BE SWE	I2258341
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						F324-302-0																																																																				

# 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
P2308S	00475	2121-IA91F62-5-SP12-00475		2121-IA91F62-5		01	
1.5	3,143	2.0000 S10S	0.0000 NA	PIPE, SEAMLESS, A312-TP304L	NY231216AS15 0391	3,93	12,35
40391							
5.2	1	2.0000 S10S	0.0000 NA	90 LR ELL, SEAMLESS, A403-WP304L	NY230506AT08 0462	0,49	0,49
42965							
2.2	1	2.0000 S10S	0.0000 NA	TEE, SEAMLESS, A403-WP304L	MN012-1 0430	0,78	0,78
44252							
3.1	1	2.0000 NA	1.5000 NA	SOCKOLET, 3000#, A182-F304L	514786 0301	0,45	0,45
85701							
4.1	1	2.0000 S10S	0.7500 S40S	ECC SWAGE NIPPLE, LEB-SEP, A403-WP304L	N220606AV04 0512	1,97	1,97
73272							

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 *C. Sandu*

Number of Items : 5 Total Weight : 16,04

Signature	QA	Client
		Sergio Morales Date: 15-10-24
Date	2024-10-08 14:32:26	

 Stainless Steel Experience				 DNV GL GROUP				<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																															

**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

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## MATERIAL TEST CERTIFICATE

EN10204 3.1

MANUFACTURER: Yingkou Guangming Pipeline Industry Co.,Ltd

MATERIAL: ASTM A403 WP304/304L

DIMENSION: ASME B16.9

WORK NO: GMPPFCP2312363

DATE: April.10th,2024

PAGE NO: 20/29

CUSTOMER: Chero Piping S.p.A.

NO.	POS .No.	CHERO CODE	COMMESA COMMESA	PRODUCT & SIZE	QUANTITY	MFG NO. (HEAT NO.)	CHEMICAL COMPOSITION%					
							MIN	C	Si	Mn	P	S
						PCS	MAX	0.030	1.00	2.00	0.045	0.030
74	310	C90LRB1XB 0001.ZZW	OC/2023/90 3/1040	SIZE: 2 - SCHED.S-10S 90 LR ELBOW A403- WP304/304L DG BE SMLS ASME B16.9	58	NY230506AT08	0.015	0.39	1.34	0.036	0.009	8.02
75	320	C90LRB1XB 000N.ZZW	OC/2023/90 3/1060	SIZE: 3 - SCHED.S-10S 90 LR ELBOW A403- WP304/304L DG BE SMLS ASME B16.9	16	JSG2310019	0.027	0.54	1.22	0.026	0.015	8.11
76	330	C90LRB1XB 000P.ZZW	OC/2023/90 3/1080	SIZE: 4 - SCHED.S-10S 90 LR ELBOW A403- WP304/304L DG BE SMLS ASME B16.9	4	JSG2312020	0.028	0.44	1.23	0.027	0.010	8.28
77	340	C90LRB1XB 000R.ZZW	OC/2023/90 3/1090	SIZE: 6 - SCHED.S-10S 90 LR ELBOW A403- WP304/304L DG BE SMLS ASME B16.9	2	JSG2312024	0.027	0.47	1.24	0.028	0.013	8.26
PHYSICAL TEST												
NO.	POS .No.	CHERO CODE	COMMESA COMMESA	CHARGE NO	STANDARD	YIELD STRENGTH MPA(N/mm <sup>2</sup> )	TENSILE STRENGTH MPA(N/mm <sup>2</sup> )	ELONGATION %	HARDNESS HB	VISUAL INSPECTION	DIMENSION INSPECTION	PMI TESTING
					MIN	170	485	28	-			
					MAX				-			
74	310	C90LRB1XB 0001.ZZW	OC/2023/90 3/1040	NY230506AT08	299	611	51	-	GOOD	GOOD	GOOD	OK
75	320	C90LRB1XB 000N.ZZW	OC/2023/90 3/1060	JSG2310019	256	665	54	-	GOOD	GOOD	GOOD	OK
76	330	C90LRB1XB 000P.ZZW	OC/2023/90 3/1080	JSG2312020	279	680	66	-	GOOD	GOOD	GOOD	OK
77	340	C90LRB1XB 000R.ZZW	OC/2023/90 3/1090	JSG2312024	273	674	62	Yuan Yuan	GOOD	GOOD	GOOD	OK

NOTE:

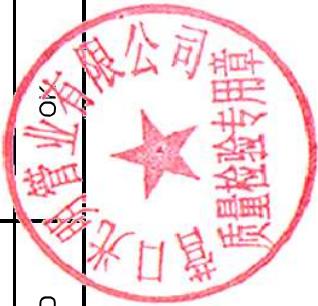
1. HEAT TREATMENT: SOLUTION ANNEALED TEMPERATURE 1050°C X 0.5HR, COOLING IN WATER.

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS CONCERNED AND ALSO WITH THE PURCHASER'S REQUIREMENTS AND THAT THE TEST RESULTS SHOWN HEREIN ARE CORRECT AND WE CONFIRM THAT P.M.I HAS BEEN DONE.

CHIEF OF INSPECTION DEPARTMENT

Prime 4 030 TCN

2024.4.7





### TEST CERTIFICATE ACCORDING TO EN 10204 3.1 - EXTENT OF MATERIAL DELIVERY

POS.	TEST No.	HEAT CODE	HEAT NUMBER	Q.TY	DESCRIPTION / MAT. REQUISIT. - TAG N. - ITEM CODE - COMPUTER CODE - UB / ENCLOSURE - NOTES
314	1	59056	E-LJ	521831	5,00 SOCKOLET SW Si/3000 A182F3/16/316L 3/4"X4" / C/C: 12250468 - CR: MR ITEM NO.9 XF/0222 - CC: R13DNL1M/107
315	1	55354	I20N	281487	5,00 SOCKOLET SW Si/3000 A182F3/16/316L 11/12"X4" / C/C: 12250549 - CR: MR ITEM NO.10 XF/0222 - CC: R13DNL1M/107
316	1	57876	I020	280455	5,00 SOCKOLET SW Si/3000 A182F3/304L 11/12"X4" / C/C: 12256337 - CR: MR ITEM NO.11 XF/0222 - CC: R13DNL2A/107
317	1	58474		515098	20,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X2" / C/C: 12256338 - CR: MR ITEM NO.12 XF/0222 - CC: R13DNL2A/107
318	1	59959	E-OE	174037	15,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X2" / C/C: 12256339 - CR: MR ITEM NO.13 XF/0222 - CC: R13DNL2A/107
319	1	588609	I160	514786	10,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X2" / C/C: 12258341 - CR: MR ITEM NO.14 XF/0222 - CC: R13DNL2A/107
320	1	57876	I020	280455	1,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X3" / C/C: 12258414 - CR: MR ITEM NO.15 XF/0222 - CC: R13DNL2A/107
321	1	59054	E-LZ	515098	25,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X3" / C/C: 12258415 - CR: MR ITEM NO.16 XF/0222 - CC: R13DNL2A/107
322	1	59859	E-OE	174037	5,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X3" / C/C: 12258416 - CR: MR ITEM NO.17 XF/0222 - CC: R13DNL2A/107
323	1	58609	I160	514786	5,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X3" / C/C: 12258418 - CR: MR ITEM NO.18 XF/0222 - CC: R13DNL2A/107
324	1	59054	E-LZ	515098	20,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X4" / C/C: 12258477 - CR: MR ITEM NO.20 XF/0222 - CC: R13DNL2A/107
325	1	588602	I210	573084	15,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X4" / C/C: 12258480 - CR: MR ITEM NO.21 XF/0222 - CC: R13DNL2A/107
326	1	59412	E-MJ	526509	1,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X6" / C/C: 12258517 - CR: MR ITEM NO.22 XF/0222 - CC: R13DNL2A/107
327	1	58474		515098	5,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X6" / C/C: 12258518 - CR: MR ITEM NO.23 XF/0222 - CC: R13DNL2A/107
328	1	58449	OJPC		5,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X6" / C/C: 12258519 - CR: MR ITEM NO.24 XF/0222 - CC: R13DNL2A/107
329	1	58474		515098	10,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X8" / C/C: 12258538 - CR: MR ITEM NO.25 XF/0222 - CC: R13DNL2A/107
330	1	58449	OJPC		1,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X8" / C/C: 12258539 - CR: MR ITEM NO.26 XF/0222 - CC: R13DNL2A/107
331	1	54285		481150	1,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X12" / C/C: 12258291 - CR: MR ITEM NO.27 XF/0222 - CC: R13DNL2A/107
332	1	52765		468165	4,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X16" / C/C: 12258314 - CR: MR ITEM NO.28 XF/0222 - CC: R13DNL2A/107
333	1	59412	E-MJ	526509	5,00 SOCKOLET SW Si/3000 A182F3/304/304L 11/12"X20" / C/C: 12258364 - CR: MR ITEM NO.29 XF/0222 - CC: R13DNL2A/107
334	1	52765		468165	6,00 SOCKOLET SW Si/3000 A182F3/304/304L 3/4"X20" / C/C: 12258355 - CR: MR ITEM NO.30 XF/0222 - CC: R13DNL2A/107
335	1	54285		481150	1,00 SOCKOLET SW Si/3000 A182F3/304/304L 11"X20" / C/C: 12258356 - CR: MR ITEM NO.31 XF/0222 - CC: R13DNL2A/107

NOTES

THIS IS TO CERTIFY THAT MATERIAL IS IN FULL COMPLIANCE TO PURCHASE ORDER AND APPLICABLE SPECIFICATIONS.  
 FITTING SUPPLIED ARE ACC. TO ASME B16.11, MSS SP-97, MSS SP-83 AS APPLICABLE AND MARKED ACCORDING TO MSS SP-25, ALL STANDARDS ARE IN LATEST EDITION.  
 MATERIAL ACC. TO ASTM IN L.I.E. AND ASME II ED.2021, MATERIAL ACC. TO NACE MR 01.75 ED.2015 AND PED 2014/68/UE ANNEX 1.  
 VISUAL, DIMENSIONAL AND MARKING CHECK HAVE BEEN CARRIED OUT WITH SATISFACTORY RESULTS.  
 STAINLESS STEEL FITTINGS ARE PICKLED AND PASSIVATED IN ACCORDANCE WITH ASTM A380.

CUSTOMER INSPECTOR

THIRD PARTS

QUALITY CONTROL

Laura Paganuzzi

J. Foggnini

CHERO PIPING S.P.A.

BUREAU VERITAS	2 <sup>nd</sup> PARTY INSPECTION ON BEHALF OF
TCT	WITNESSED <del>NOTED</del> REVIEWED
SURVEYOR: S. NEGRINI	
DATE 11 - 15 DEC 2022	

## TEST CERTIFICATE ACCORDING TO EN 10204 3.1 - EXTENT OF MATERIAL DELIVERY

### Materials Heat Number Summary

TEST No.	MATERIAL SPECIFICATION AND GRADE	HEAT NUMBER	BASE MATERIAL CERTIFICATE REF.	STEEL WORKS
39020	ASTM A182-22 F304/F304L	365767	181/334	OLARRA
46280	ASTM A182-22 F304/F304L	406025	261114	OLARRA
52765	ASTM A182-22 F304/F304L	468165	371065	OLARRA
54228	ASTM A182-22 F304/F304L	W31TE	2019/015552	ROLDAN
54285	ASTM A182-22 F304/F304L	481150	395730	OLARRA
55556	ASTM A182-22 F304/F304L	279394	MEST/52750/02020	ACCIARIE VALBRUNA
56611	ASTM A182-22 F304/F304L	072541	030226	COGNE ACCIAI SPECIALI
57429	ASTM A182-22 F304/F304L	072996	20210/0433	COGNE ACCIAI SPECIALI
57876	ASTM A182-22 F304/F304L	280455	MEST/548926/2020	ACCIARIE VALBRUNA
58313	ASTM A182-22 F304/F304L	172917	20210/23605	COGNE ACCIAI SPECIALI
58416	ASTM A182-22 F304/F304L	514059	449964	OLARRA
58449	ASTM A182-22 F304/F304L	OJPC	2021/069174	ROLDAN S.A.
58474	ASTM A182-22 F304/F304L	515098	452941	OLARRA
58602	ASTM A182-22 F304/F304L	573084	2015/061497	COGNE ACCIAI SPECIALI
58609	ASTM A182-22 F304/F304L	514786	452546	OLARRA
59054	ASTM A182-22 F304/F304L	515098	452941	OLARRA
59202	ASTM A182-22 F304/F304L	17369	20210/56230	COGNE
59269	ASTM A182-22 F304/F304L	OTNH	2021/012547	ROLDAN S.A.
59345	ASTM A182-22 F304/F304L	286338	MEST/863/112/2022	ACCIARIE VALBRUNA
59346	ASTM A182-22 F304/F304L	287142	MEST/863/113/2022	ACCIARIE VALBRUNA
59412	ASTM A182-22 F304/F304L	526509	472548	OLARRA
59538	ASTM A182-22 F304/F304L	174577	2022/066080	COGNE
59586	ASTM A182-22 F304/F304L	174578	2022/002830	COGNE
59752	ASTM A182-22 F304/F304L	174248	2021/057503	COGNE
59790	ASTM A182-22 F304/F304L	287723	MEST/883/375/2022	ACCIARIE VALBRUNA
59881	ASTM A182-22 F304/F304L	272546	2020/166559	COGNE
59959	ASTM A182-22 F304/F304L	174037	2021/048041	COGNE
60059	ASTM A182-22 F304/F304L	1VZB	2022/005128	ROLDAN S.A.
60212	ASTM A182-22 F304/F304L	538845	492348	OLARRA
60858	ASTM A182-22 F304/F304L	1RWL	2022/012165	ROLDAN S.A.
48676	ASTM A182-22 F316/F316L	273641	MEST/095863/2017	ACCIARIE VALBRUNA
55354	ASTM A182-22 F316/F316L	281487	MEST/50234/1/2019	ACCIARIE VALBRUNA
56932	ASTM A182-22 F316/F316L	072865	043593	COGNE ACCIAI SPECIALI
58450	ASTM A182-22 F316/F316L	284568	MEST/7765246/2021	ACCIARIE VALBRUNA

### NOTES

THIS IS TO CERTIFY THAT MATERIAL IS IN FULL COMPLIANCE TO PURCHASE ORDER AND APPLICABLE SPECIFICATIONS.  
 FITTING SUPPLIED ARE ACC. TO ASME B16.11, MSS SP-97, MSS SP-83 AS APPLICABLE AND MARKED ACCORDING TO MS SP-25; ALL STANDARDS ARE IN LATEST EDITION.  
 MATERIAL ACC. TO ASTM IN L.E. AND ASME II ED.2021. MATERIAL ACC. TO NACE MR 01.75 ED.2015 AND PED 2014/68/UE ANNEX 1.  
 VISUAL, DIMENSIONAL AND MARKING CHECK HAVE BEEN CARRIED OUT WITH SATISFACTORY RESULTS.  
 STAINLESS STEEL FITTINGS ARE PICKLED AND PASSIVATED IN ACCORDANCE WITH ASTM A380.

### CUSTOMER INSPECTOR

### THIRD PARTS

### QUALITY CONTROL

Laura Paganuzzi

*J. Fogarini*

CHERO PIPING S.p.A.

BUREAU VERITAS	ITALY
2 <sup>nd</sup> PARTY INSPECTION ON BEHALF OF	
WITNESSED	NOTED
SURVEYOR: S. NEGRINI	
DATE	15 DEC 2022



CERTIFICATE NR.  
**CE/2022/1606** - Rev.  
INTERNAL ORDER NR.  
**OC/2022/1021**

CUSTOMER ORDER REF.  
**7500107587 - 25/10/2022**

---

CUSTOMER  
**TECNIMONT S.P.A.**

SHEET 8/25

TEST CERTIFICATE ACCORDING TO EN 18204 3-1 - EXTENT OF MATERIAL DELIVERY

BUREAU VERITAS	WHITNESSED	NOTED	REVIEWED
ITALY			
2 <sup>nd</sup> PARTY INSPECTION			
ON BEHALF OF			
TCS			
SURVEYOR: S. NEGRINI		DATE: 15 DEC 2022	

## NOTES

CUSTOMER INSPECTOR	THIRD PARTS	QUALITY CONTROL
		Laura Paganuzzi

CHERO PIPING S.P.A.

CERTIFICATE NR.  
CE/2022/1606 - Rev. 0  
INTERNAL ORDER NR.  
OC/2022/1021

DATE  
13/12/2022  
INTERNAL ORDER REF.  
7500107587 - 25/10/2022

DATE  
26/10/2022  
CUSTOMER  
TECNIMONT S.P.A.

SHEET  
21/25

### TEST CERTIFICATE ACCORDING TO EN 10204 3.1 - EXTENT OF MATERIAL DELIVERY

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0001			
Mn %	1.423		1.455	
Cr %	18.000		18.000	
Ni %	8.068		8.000	

#### PML Test - Position 318: STOCKOLET SW S/3000 A182F304/304L 1"x2"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	174037	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	174037-0001			
Mn %	1.317		1.319	
Cr %	18.000		18.000	
Ni %	8.436		8.000	

#### PML Test - Position 319: STOCKOLET SW S/3000 A182F304/304L 11/2"x2"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	514786	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	514786-0001			
Mn %	1.539			
Cr %	18.000			
Ni %	8.173			

#### PML Test - Position 320: STOCKOLET SW S/3000 A182F304/304L 1/2"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	280455	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	280455-0001			
Mn %	1.846			
Cr %	18.000			
Ni %	8.120			

#### PML Test - Position 321: STOCKOLET SW S/3000 A182F304/304L 3/4"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0001			
Mn %	1.439		1.526	
Cr %	18.249		18.778	
Ni %	8.000		8.000	

#### PML Test - Position 322: STOCKOLET SW S/3000 A182F304/304L 1"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0002			
Mn %	1.439		1.526	
Cr %	18.249		18.778	
Ni %	8.000		8.000	

#### PML Test - Position 323: STOCKOLET SW S/3000 A182F304/304L 1/2"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0003			
Mn %	1.439		1.526	
Cr %	18.249		18.778	
Ni %	8.000		8.000	

#### PML Test - Position 324: STOCKOLET SW S/3000 A182F304/304L 3/4"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-B	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0004			
Mn %	1.439		1.526	
Cr %	18.249		18.778	
Ni %	8.000		8.000	

J. Fogorzi  
CHERO PIPING S.p.A.

NOTES  
CUSTOMER INSPECTOR  
THIRD PARTS  
QUALITY CONTROL  
Laura Paganuzzi



CERTIFICATE NR.  
CE/2022/1606 - Rev. 0  
INTERNAL ORDER NR.  
OC/2022/1021

DATE  
13/12/2022  
DATE  
26/10/2022

CUSTOMER ORDER REF.  
7500107587 - 25/10/2022  
CUSTOMER  
TECNIMONT S.P.A.

SHEET  
22/25

### TEST CERTIFICATE ACCORDING TO EN 10204 3.1 - EXTENT OF MATERIAL DELIVERY

<i>Material Spec. and Grade</i>	<i>Heat Number</i>	<i>Procedure Number</i>	<i>Applicable Standard</i>	<i>Instrument</i>
ASTM A182-22 F304/F304L	174037	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371
Serial Number	174037-0001			
Mn %	1.352			
Cr %	18.968			
Ni %	8.325			

#### PMI Test - Position 323: SOCKOLET SW S/3000 A182F304/304L 11/2"x3"

<i>Material Spec. and Grade</i>	<i>Heat Number</i>	<i>Procedure Number</i>	<i>Applicable Standard</i>	<i>Instrument</i>
ASTM A182-22 F304/F304L	514786	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371
Serial Number	514786-0001			
Mn %	1.505			
Cr %	18.000			
Ni %	8.157			

#### PMI Test - Position 324: SOCKOLET SW S/3000 A182F304/304L 3/4"x4"

<i>Material Spec. and Grade</i>	<i>Heat Number</i>	<i>Procedure Number</i>	<i>Applicable Standard</i>	<i>Instrument</i>
ASTM A182-22 F304/F304L	515098	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371
Serial Number	515098-0001			
Mn %	1.470			
Cr %	18.000			
Ni %	8.000			

#### PMI Test - Position 325: SOCKOLET SW S/3000 A182F304/304L 11/2"x4"

<i>Material Spec. and Grade</i>	<i>Heat Number</i>	<i>Procedure Number</i>	<i>Applicable Standard</i>	<i>Instrument</i>
ASTM A182-22 F304/F304L	573084	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371
Serial Number	573084-0001			
Mn %	1.313			
Cr %	18.761			
Ni %	8.153			

#### PMI Test - Position 326: SOCKOLET SW S/3000 A182F304/304L 1/2"x6"

<i>Material Spec. and Grade</i>	<i>Heat Number</i>	<i>Procedure Number</i>	<i>Applicable Standard</i>	<i>Instrument</i>
ASTM A182-22 F304/F304L	5226509	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371
Serial Number	5226509-0001			
Mn %	1.470			
Cr %	18.000			
Ni %	8.000			

#### PMI Test - Position 327: SOCKOLET SW S/3000 A182F304/304L 3/4"x6"

NOTES

CUSTOMER INSPECTOR

THIRD PARTS

QUALITY CONTROL

Laura Paganuzzi  
*J. Fogassi*

CHERO PIPING S.P.A.

<b>BUREAU VERITAS</b>	<b>2<sup>nd</sup> PARTY INSPECTION ON BEHALF OF</b>
<i>TCT</i>	<i>WITNESSED</i> <i>NOTED</i> <i>REVIEWED</i>
<b>SURVEYOR: S. NEGRINI</b>	<b>D.ITE</b>
<b>15 DEC 2022</b>	



表号: ZNNH/QM400-34-1  
修订号: 0

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

用户(Purchaser): 意大利Techinmont

材质(Material): ASTM A403-2022 WP304/304L

质量证明书编号(Certificate No.): 2024-01-43-56

产品执行标准(Product standards): MSS SP-95-2018

化学成分 Chemical Composition (%)

机械性能 Mechanical Properties

其他检测结果(Other examination and test)

尺寸检查 Dimension Inspection

外观检查 Visual Inspection

厚度 Hardness (HBW≤201)

磁粉 MT

着色 PT

超声波 UT

X射线 RT

晶间腐蚀 Intergranular Corrosion Test

备注 Remark

PMI OK

固溶 Solution Annealing

交货状态 Delivery condition

其他(others):

无损检测(NDT)

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.

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

检验员(Inspector): 印张君

质保工程师(QA Engineer): 印凯

签发日期(Date of issue): 2024.04.22

电话(Tel): 0510-86996009

传真(Fax): 0510-86996035

Add: 788 Jinshan Rd, High and New Technology Industrial Development, JiangYin City, JiangSu P.R. China

检验员(Inspector): 印张君

质保工程师(QA Engineer): 印凯

签发日期(Date of issue): 2024.04.22

电话(Tel): 0510-86996009

传真(Fax): 0510-86996035

检验部(章) Stamp of Quality Department

检验专用章



Contract : P2300

Drawing : 2121-IA91F62-5

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 01

Spool : 00475

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F62-5-SP12-00475

## 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	
0051	BW	2	S10S	MW.26_BW	BC	17-09-2024	4712055	BC	17-09-2024	4712055			001005	26-09-2024			001079	07-10-2024											
0052	SOL	1,5	S10S	MW.26_SBR	BC	13-09-2024	4712055	BC	13-09-2024	4712055			001005	26-09-2024	000184	26-09-2024			001079	07-10-2024									
0054	BW	2	S10S	MW.26_BW	BC	17-09-2024	4712055	BC	17-09-2024	4712055			001005	26-09-2024			001079	07-10-2024											
0055	BW	2	S10S	MW.26_BW	BC	17-09-2024	4712055	BC	17-09-2024	4712055			001005	26-09-2024			001079	07-10-2024											

On behalf of Techimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 *C. Sandu*

Notes:

Boccard Portugal QC	Client
	Sergio Morales Date: 15-10-24 
08-10-2024 14:32:26	

Signature

Date



# Shop QC Inspection Report

P2308-001039

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

Job number: P2308S  
 Spool N°: 00475  
 Piece Mark: 2121-IA91F62-5-SP12-00475

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

Control Date: 26-09-2024

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	X	<input type="checkbox"/>	X
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: 26-09-2024  Signature 	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 08-10-2024 14:32:26  Signature 	Customer Inspection:  <b>Sergio Morales</b>  Date: 15-10-24  
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On behalf of Tecnimon / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 

# Visual Examination Report (Welds)

P2308-001005

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00475

Procedure &amp; Instructions: 4274-LZ-VF-WF31010370QAC04 - Rev: 1

Project : ALBA

Piece Mark: 2121-IA91F62-5-SP12-00475

Testing Date: 26-09-2024

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	
0051	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	BC	19	X			Direct
0052	1.5000 S10S SOL-Sockolet to Header Weld (MW.26_SBR)	BC	19	X			Direct
0054	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	BC	19	X			Direct
0055	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	BC	19	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)				QA/QC Inspection: RAIMUNDO, MARIANA		Customer Inspection:	
Date: 26-09-2024				Date: 08-10-2024 14:32:26		Signature: Sergio Morales	
Signature: 				Signature: 		Date: 15-10-24	
							

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu



# Liquid Penetrant Examination Report

P2308-000184

Client : NERVION  
 Contract : P2308 / Project : ALBA  
 Remarks: The results refer to the controlled items

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Spool N°: 00475

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC03

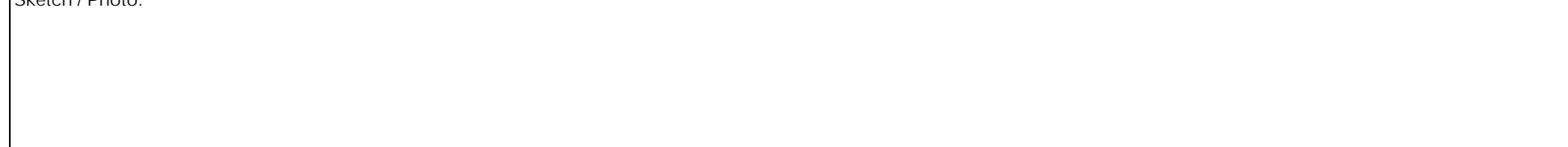
Piece Mark: 2121-IA91F62-5-SP12-00475

Testing Date: 26-09-2024

Steps	Penetrant	Cleaner	Developer	Lighting Equipment
Brand	Mr Chemie (MR68-NF)	Mr Chemie (MR85)	Mr Chemie (MR70)	Artificial > 500 lux
Type	II	C	e	-
Batch/Serial Number	*080323 (03/2026)	*150124 (01/2027)	*300124 (01/2027)	-

Weld / Item No.	Identification Description	Welder	Tem (°F/C)	Dwell Time (min)				Examin Time	Accepted yes	No Indication	Remarks
				Penetrant	Cleaner	Developer	Lighting				
0052	1.5000 S10S SOL-Socket to Header Weld (MW.26_SBR)	BC	17	20 m	-	10 m	-	-	X	<input type="checkbox"/>	

Sketch / Photo:



## Defects

Clustered Porosity	CP	Cap	C	Undercut	UC	Surface	SU	Crack	CR
Porosity	P	Slag	S	Lack of Cleanup	LC	Crater Crack	CC		

Test Performed by: MARCO (N2 VT/PT), MATOS

QA/QC Inspection: RAIMUNDO, MARIANA

Customer Inspection:

Date: 26-09-2024

Date: 26-09-2024

Sergio Morales

Signature



Signature



Date: 15-10-24



On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024 C. Sandu



# Positive Material Identification Report (PMI)

P2308-001079

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00475

Piece Mark: 2121-IA91F62-5-SP12-00475

Material: Stainless Steel 304, 316, 317

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

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

Equipment Deviation : + - 5%

Testing Date: 07-10-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0051	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	375	0	0	0	8	70	1	18	0	0	0	<input checked="" type="checkbox"/>		
0052	1.5000 S10S SOL-Sockolet to Header Weld (MW.26_SBR)	374	0	0	0	9	68	2	18	0	0	0	<input checked="" type="checkbox"/>		
0054	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	373	0	0	0	9	69	1	19	0	0	0	<input checked="" type="checkbox"/>		
0055	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	372	0	0	0	8	69	1	18	0	0	0	<input checked="" type="checkbox"/>		
1.5	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (NY231216AS15)	369	0	0	0	8	71	1	17	0	0	0	<input checked="" type="checkbox"/>		
2.2	2.0000 S10S TEE, SEAMLESS, A403-WP304L (MN012-1)	367	0	0	0	7	72	1	17	0	0	0	<input checked="" type="checkbox"/>		
3.1	2.0000 NA 1.5000 NA SOCKOLET, 3000#, A182-F304L (514786)	368	0	0	0	7	71	1	18	0	0	0	<input checked="" type="checkbox"/>		
4.1	2.0000 S10S 0.7500 S40S ECC SWAGE NIPPLE, LEB-SEP, A403-WP304L (N220606AV04)	371	0	0	0	8	71	1	18	0	0	0	<input checked="" type="checkbox"/>		
5.2	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (NY230506AT08)	370	0	0	0	7	71	1	17	0	0	0	<input checked="" type="checkbox"/>		

On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 

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

Customer Inspection:

Sergio Morales

Date: 07-10-2024

Date: 08-10-2024 14:32:26

Date:

Signature Signature 

Signature

Date: 15-10-24



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	375
Mode	ALLOY
Time	2024-10-07 12:30
Duration	9.68
Sequence	Final
Alloy1	304SS : 0.65
Alloy2	No Match : *2.22
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.041
Sn	0.065	±	0.027
Pd	< LOD	:	0.035
Ag	< LOD	:	0.118
Al	< LOD	:	80.000
Mo	0.032	±	0.007
Nb	< LOD	:	0.008
Zr	< LOD	:	0.006
Bi	< LOD	:	0.013
Pb	< LOD	:	0.014
Se	< LOD	:	0.007
W	< LOD	:	0.089
Zn	< LOD	:	0.039
Cu	< LOD	:	0.159
Ni	8.507	±	0.301
Co	< LOD	:	0.504
Fe	70.003	±	0.458
Mn	1.729	±	0.209
Cr	18.866	±	0.267
V	< LOD	:	0.129
Ti	< LOD	:	0.140

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 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	374
Mode	ALLOY
Time	2024-10-07 12:30
Duration	9.47
Sequence	Final
Alloy1	304SS : 1.43
Alloy2	No Match : 2.16
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.057
Pd	< LOD	:	0.045
Ag	< LOD	:	0.181
Al	< LOD	:	80.000
Mo	0.068	±	0.011
Nb	0.014	±	0.006
Zr	< LOD	:	0.004
Bi	< LOD	:	0.015
Pb	< LOD	:	0.010
Se	< LOD	:	0.009
W	< LOD	:	0.089
Zn	< LOD	:	0.047
Cu	< LOD	:	0.174
Ni	9.484	±	0.346
Co	< LOD	:	0.554
Fe	68.693	±	0.509
Mn	2.060	±	0.237
Cr	18.864	±	0.296
V	< LOD	:	0.150
Ti	< LOD	:	0.185

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

---

Reading No	373
Mode	ALLOY
Time	2024-10-07 12:30
Duration	11.85
Sequence	Final
Alloy1	304SS : 0.01
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.033
Sn	0.052	±	0.024
Pd	< LOD	:	0.032
Ag	< LOD	:	0.145
Al	< LOD	:	80.000
Mo	0.035	±	0.007
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.012
Pb	< LOD	:	0.021
Se	< LOD	:	0.005
W	< LOD	:	0.073
Zn	< LOD	:	0.031
Cu	< LOD	:	0.134
Ni	9.322	±	0.273
Co	< LOD	:	0.433
Fe	69.228	±	0.403
Mn	1.832	±	0.185
Cr	19.136	±	0.237
V	0.150	±	0.063
Ti	< LOD	:	0.138

---

Sergio Morales

Date: 15-10-24



On behalf of Tecimont / R  
Piping Supervisor  
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## Certificate of PMI Reading

XL3t-32735

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Reading No	372
Mode	ALLOY
Time	2024-10-07 12:29
Duration	8.36
Sequence	Final
Alloy1	304SS : 0.11
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.045
Sn	< LOD	:	0.055
Pd	< LOD	:	0.042
Ag	< LOD	:	0.145
Al	< LOD	:	80.000
Mo	0.038	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.006
Bi	< LOD	:	0.020
Pb	< LOD	:	0.018
Se	< LOD	:	0.008
W	< LOD	:	0.092
Zn	< LOD	:	0.036
Cu	< LOD	:	0.170
Ni	8.996	±	0.336
Co	< LOD	:	0.546
Fe	69.672	±	0.502
Mn	1.850	±	0.231
Cr	18.923	±	0.292
V	< LOD	:	0.136
Ti	< LOD	:	0.158

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
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18.10.2024 C. Sandu

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Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	369
Mode	ALLOY
Time	2024-10-07 12:29
Duration	10.21
Sequence	Final
Alloy1	301SS : 1.76
Alloy2	No Match : *1.94
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.037
Sn	< LOD	:	0.052
Pd	< LOD	:	0.037
Ag	< LOD	:	0.179
Al	< LOD	:	80.000
Mo	0.315	±	0.019
Nb	0.036	±	0.007
Zr	< LOD	:	0.006
Bi	< LOD	:	0.012
Pb	< LOD	:	0.029
Se	< LOD	:	0.008
W	< LOD	:	0.108
Zn	< LOD	:	0.045
Cu	0.515	±	0.098
Ni	8.066	±	0.295
Co	< LOD	:	0.491
Fe	71.378	±	0.451
Mn	1.539	±	0.203
Cr	17.714	±	0.259
V	< LOD	:	0.134
Ti	< LOD	:	0.145

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
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Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	367
Mode	ALLOY
Time	2024-10-07 12:28
Duration	10.99
Sequence	Final
Alloy1	301SS : 1.42
Alloy2	No Match : 2.01
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.039
Sn	< LOD	:	0.048
Pd	< LOD	:	0.034
Ag	< LOD	:	0.167
Al	< LOD	:	80.000
Mo	< LOD	:	0.006
Nb	< LOD	:	0.004
Zr	< LOD	:	0.003
Bi	< LOD	:	0.008
Pb	< LOD	:	0.007
Se	< LOD	:	0.008
W	< LOD	:	0.088
Zn	< LOD	:	0.032
Cu	< LOD	:	0.132
Ni	7.877	±	0.273
Co	< LOD	:	0.462
Fe	72.274	±	0.426
Mn	1.307	±	0.186
Cr	17.948	±	0.243
V	< LOD	:	0.118
Ti	< LOD	:	0.154

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
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18.10.2024 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	368
Mode	ALLOY
Time	2024-10-07 12:28
Duration	10.04
Sequence	Final
Alloy1	304SS : 1.78
Alloy2	301SS : 1.80
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.038
Sn	< LOD	:	0.051
Pd	< LOD	:	0.039
Ag	< LOD	:	0.174
Al	< LOD	:	80.000
Mo	0.024	±	0.007
Nb	< LOD	:	0.007
Zr	< LOD	:	0.004
Bi	< LOD	:	0.009
Pb	< LOD	:	0.015
Se	< LOD	:	0.009
W	< LOD	:	0.097
Zn	< LOD	:	0.037
Cu	< LOD	:	0.149
Ni	7.909	±	0.294
Co	< LOD	:	0.501
Fe	71.869	±	0.457
Mn	1.334	±	0.200
Cr	18.010	±	0.262
V	< LOD	:	0.125
Ti	< LOD	:	0.170

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
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18.10.2024 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	371
Mode	ALLOY
Time	2024-10-07 12:29
Duration	9.21
Sequence	Final
Alloy1	304SS : 0.75
Alloy2	No Match : *2.24
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.055
Pd	< LOD	:	0.038
Ag	< LOD	:	0.152
Al	< LOD	:	80.000
Mo	< LOD	:	0.008
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.012
Pb	< LOD	:	0.009
Se	< LOD	:	0.007
W	< LOD	:	0.093
Zn	< LOD	:	0.031
Cu	< LOD	:	0.154
Ni	8.208	±	0.314
Co	< LOD	:	0.532
Fe	71.185	±	0.484
Mn	1.346	±	0.213
Cr	18.432	±	0.280
V	0.158	±	0.076
Ti	< LOD	:	0.161

---

Sergio Morales

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Constância, Portugal 2250-999

## Certificate of PMI Reading

XL3t-32735

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Reading No	370
Mode	ALLOY
Time	2024-10-07 12:29
Duration	10.24
Sequence	Final
Alloy1	301SS : 1.56
Alloy2	No Match : *2.46
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.039
Sn	< LOD	:	0.050
Pd	< LOD	:	0.037
Ag	< LOD	:	0.174
Al	< LOD	:	80.000
Mo	0.025	±	0.007
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.002
Pb	< LOD	:	0.017
Se	< LOD	:	0.006
W	< LOD	:	0.096
Zn	< LOD	:	0.028
Cu	< LOD	:	0.155
Ni	7.921	±	0.292
Co	< LOD	:	0.498
Fe	71.792	±	0.453
Mn	1.595	±	0.203
Cr	17.737	±	0.258
V	0.182	±	0.072
Ti	< LOD	:	0.148

---

Sergio Morales

Date: 15-10-24



On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 *C. Sandu*