



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.

REPSOL POLIMEROS  
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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	-		
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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

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)						

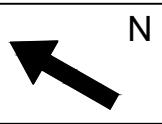
 <b>Tecnimont</b>	<p style="text-align: center;"><b>Punch List</b></p> <p style="text-align: center;"><b>PUNCH LIST</b></p>	<p style="text-align: center;"><b>IDENTIFICATION CODE</b></p>			
		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>SHEET 1 / 1</td> <td>DOC.CLASS 1</td> <td>ISSUE 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 Services</small>	<p><b>ISO ID:</b> <b>2121-IA91F63-7</b></p>				

## NOTES AND REMARKS

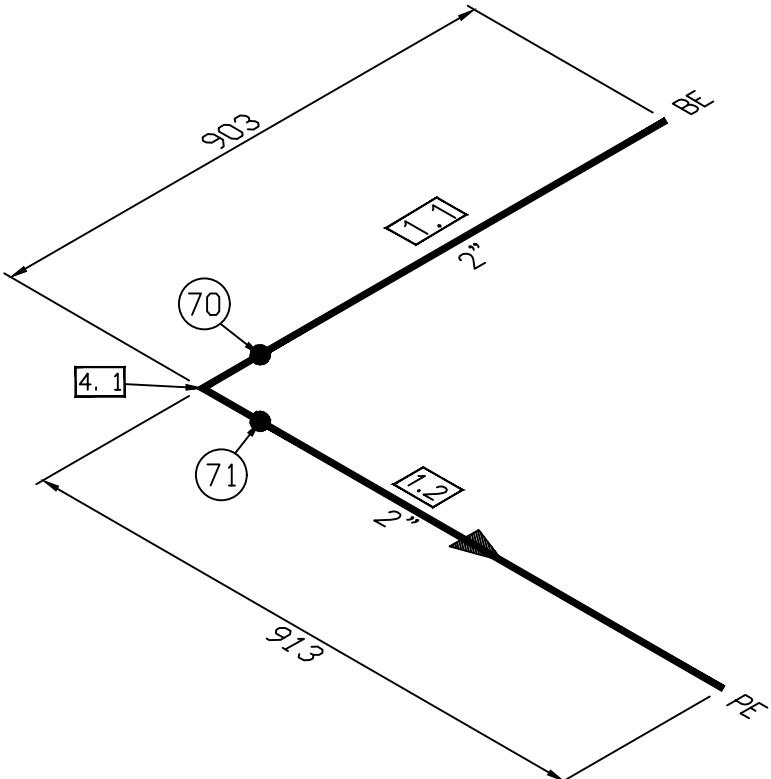
On behalf of Tecnimont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 C. Sandu

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





N



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

Rev.	Date	DRW	Check 1	Check 2	
					<b>Marking Color:</b> GREEN
					<b>Weld Class:</b> 6C4-M
00	04/03/2024	ANP	LRG	PCO	<b>Paint System:</b> NR

Sergio Morales

Date: 15-10-24



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-IA91F63-7-SP14-00495	2121-IA91F63-7	P2308S	00495	REPSOL PROJETO ALBA NERVION
Metal Tag:	YES	% MT -	NO	% PMI -	YES	BHN% -	NO	Tolerances:	ASME B31.3					

Weld Map Sticker

P2308S 00495



2121-1A91E63-7-SP14-00495



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 00495 2121-IA91F63-7-SP14-00495</b>		<b>2121-IA91F63-7</b>		<b>00</b>			
1.1	,825 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	3,24
40391							
1.2	,835 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	3,28
40391							
4.1	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 : **7,01**

Signature	QA	Client
	Date	Date
	 <b>QA / QC</b>	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

**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





Contract : P2300

Drawing : 2121-IA91F63-7

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00495

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F63-7-SP14-00495

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	
0070	BW	2	S10S	MW.26_BW	AE	12-07-2024	4712055	AE	12-07-2024	4712055						000900	04-09-2024					000886	07-09-2024						
0071	BW	2	S10S	MW.26_BW	AE	12-07-2024	4712055	AE	12-07-2024	4712055						000900	04-09-2024					000886	07-09-2024						

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

Notes:

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Signature	Boccard Portugal QC	Client
		Sergio Morales Date: 15-10-24
Date	12-09-2024 08:36:52	



# Shop QC Inspection Report

P2308-000932

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

Job number: P2308S  
 Spool N°: 00495  
 Piece Mark: 2121-IA91F63-7-SP14-00495

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

Control Date: 04-09-2024

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:

Performed by: MATOS, MARCO (N2 VT/PT)  Date: 04-09-2024  Signature 	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 12-09-2024 08:36:52  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)

P2308-000900

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00495

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

Project : ALBA

Piece Mark: 2121-IA91F63-7-SP14-00495

Testing Date: 04-09-2024

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

## Identification

Weld No.	Weld Desc.	Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
0070	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AE	26	X			Direct	
0071	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	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: 04-09-2024

Date: 12-09-2024 08:36:52

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)

P2308-000886

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00495

Piece Mark: 2121-IA91F63-7-SP14-00495

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: 07-09-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0070	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	74	0	0	0	8	69	1	18	0	0	0	X		
0071	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	76	0	0	0	8	69	1	19	0	0	0	X		
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	73	0	0	0	8	71	1	17	0	0	0	X		
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	78	0	0	0	7	71	1	18	0	0	0	X		
4.1	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	75	0	0	0	8	71	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: 12-09-2024 08:36:52

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

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Reading No	74
Mode	ALLOY
Time	2024-09-07 06:17
Duration	6.82
Sequence	Final
Alloy1	304SS : 0.55
Alloy2	No Match : 1.69
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.049
Sn	< LOD	:	0.063
Pd	< LOD	:	0.044
Ag	< LOD	:	0.105
Al	< LOD	:	80.000
Mo	0.029	±	0.009
Nb	< LOD	:	0.010
Zr	< LOD	:	0.005
Bi	< LOD	:	0.025
Pb	< LOD	:	0.027
Se	< LOD	:	0.007
W	< LOD	:	0.108
Zn	< LOD	:	0.043
Cu	< LOD	:	0.199
Ni	8.980	±	0.382
Co	< LOD	:	0.617
Fe	69.819	±	0.573
Mn	1.799	±	0.262
Cr	18.838	±	0.333
V	< LOD	:	0.166
Ti	< LOD	:	0.206

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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	76
Mode	ALLOY
Time	2024-09-07 06:18
Duration	9.94
Sequence	Final
Alloy1	304SS : 0.25
Alloy2	No Match : *2.12
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.051
Pd	< LOD	:	0.036
Ag	< LOD	:	0.190
Al	< LOD	:	80.000
Mo	0.037	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.002
Pb	< LOD	:	0.021
Se	< LOD	:	0.007
W	< LOD	:	0.093
Zn	< LOD	:	0.036
Cu	< LOD	:	0.151
Ni	8.940	±	0.304
Co	< LOD	:	0.499
Fe	69.361	±	0.457
Mn	1.863	±	0.210
Cr	19.060	±	0.267
V	< LOD	:	0.134
Ti	< LOD	:	0.131

---

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	73
Mode	ALLOY
Time	2024-09-07 06:17
Duration	8.09
Sequence	Final
Alloy1	304SS : 1.31
Alloy2	No Match : 1.92
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.058
Pd	< LOD	:	0.041
Ag	< LOD	:	0.177
Al	< LOD	:	80.000
Mo	< LOD	:	0.011
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.017
Pb	0.042	±	0.017
Se	< LOD	:	0.007
W	< LOD	:	0.112
Zn	< LOD	:	0.031
Cu	< LOD	:	0.163
Ni	8.092	±	0.334
Co	< LOD	:	0.565
Fe	71.656	±	0.515
Mn	1.426	±	0.228
Cr	17.943	±	0.295
V	< LOD	:	0.157
Ti	< LOD	:	0.178

---

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	78
Mode	ALLOY
Time	2024-09-07 06:18
Duration	10.53
Sequence	Final
Alloy1	304SS : 1.37
Alloy2	No Match : 2.35
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.050
Pd	< LOD	:	0.038
Ag	< LOD	:	0.155
Al	< LOD	:	80.000
Mo	< LOD	:	0.007
Nb	< LOD	:	0.007
Zr	< LOD	:	0.003
Bi	< LOD	:	0.002
Pb	< LOD	:	0.029
Se	< LOD	:	0.005
W	< LOD	:	0.094
Zn	< LOD	:	0.029
Cu	< LOD	:	0.146
Ni	7.983	±	0.288
Co	0.509	±	0.246
Fe	71.507	±	0.445
Mn	1.510	±	0.198
Cr	18.085	±	0.256
V	< LOD	:	0.133
Ti	< LOD	:	0.148

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	75
Mode	ALLOY
Time	2024-09-07 06:17
Duration	9.73
Sequence	Final
Alloy1	304SS : 1.13
Alloy2	No Match : 1.84
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.047
Sn	< LOD	:	0.054
Pd	< LOD	:	0.043
Ag	< LOD	:	0.110
Al	< LOD	:	80.000
Mo	< LOD	:	0.007
Nb	< LOD	:	0.005
Zr	< LOD	:	0.006
Bi	< LOD	:	0.006
Pb	< LOD	:	0.010
Se	< LOD	:	0.006
W	< LOD	:	0.088
Zn	< LOD	:	0.030
Cu	< LOD	:	0.153
Ni	8.024	±	0.308
Co	< LOD	:	0.521
Fe	71.856	±	0.476
Mn	1.426	±	0.210
Cr	17.967	±	0.273
V	< LOD	:	0.147
Ti	< LOD	:	0.169

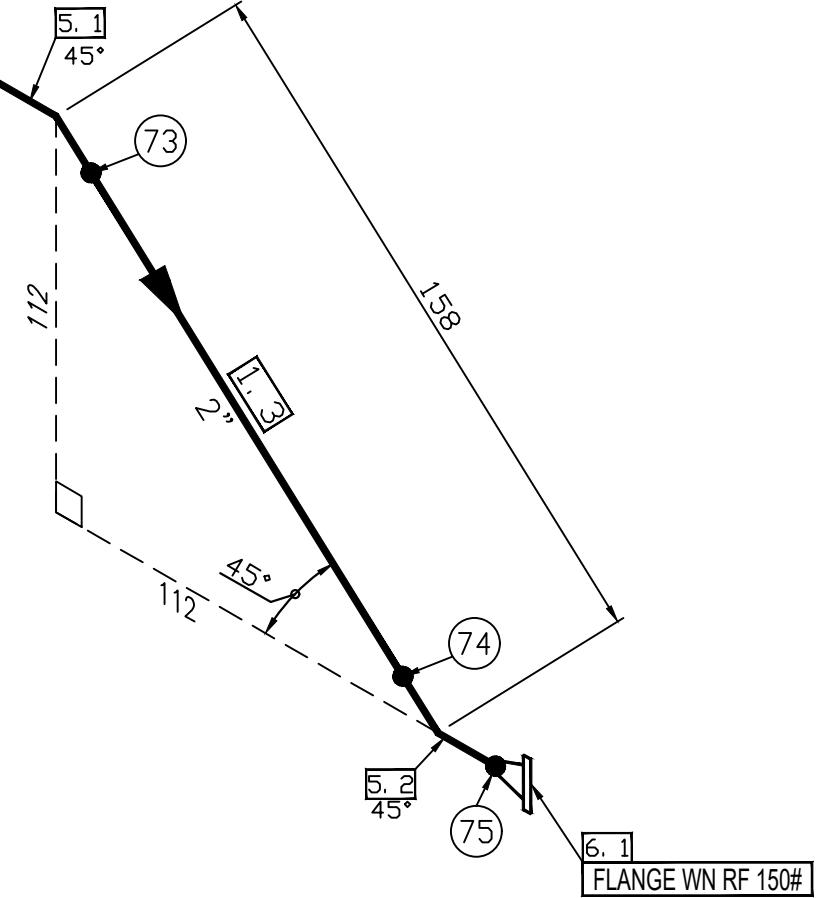
---

Sergio Morales



Date: 15-10-24

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

<div style="text-align: center; padding: 10px;">   <b>N</b> </div>	<div style="margin-bottom: 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>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>0,084</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> </tbody> </table> </div> <div style="margin-bottom: 10px;"> <p><b>FLANGES</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>PRESSION</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIEL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>6.1</td> <td>1</td> <td>2"</td> <td>150#</td> <td>S-10S</td> <td>WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH</td> <td>I2260686</td> </tr> </tbody> </table> </div> <div style="margin-bottom: 10px;"> <p><b>WELD FITTINGS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <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>5.1</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>5.2</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> <div style="text-align: right; margin-top: 10px;"> <span>P2308S 00496</span>    <span>2121-IA91F63-7-SP15-00496</span> </div> <div style="text-align: right; margin-top: 10px;">  <b>boccard</b>  Alliance for success  Boccard Portugal, Lda. </div>	PIPE						ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.3	0,084	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	ITEM	QT	DIAMÉTRE	PRESSION	SCH/mm	DESCRIPTION / MATERIEL	ITEM CODE	6.1	1	2"	150#	S-10S	WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH	I2260686	ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	5.1	1	2"	S-10S	45 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259145	5.2	1	2"	S-10S	45 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259145
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Rev.	Date	DRW	Check 1	Check 2	Marking Color:	GREEN																																													
					Weld Class:	6C4-M																																													
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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
P2308S	00496	2121-IA91F63-7-SP15-00496		2121-IA91F63-7		00	
1.3	,084 2.0000 S10S	0.0000 NA		PIPE, SEAMLESS, A312-TP304L	63981 0101	3,93	0,33
40391							
6.1	1 2.0000 S10S	0.0000 NA		WN FLG, RAISED FACE, 150#, A182-F304L	DA182 0117	2,72	2,72
37867							
5.1	1 2.0000 S10S	0.0000 NA		45 ELL, SEAMLESS, A403-WP304L	S1030418 0014	0,24	0,24
42790							
5.2	1 2.0000 S10S	0.0000 NA		45 ELL, SEAMLESS, A403-WP304L	S1030418 0014	0,24	0,24
42790							

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

Number of Items : 4 Total Weight : 3,53

Signature	QA	Client
		Sergio Morales Date: 15-10-24
Date	2024-05-03 14:02:34	



CTA Group

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Customer : TECNIMONT SPA AFC

Kg	168	Mt	40,73	Pz No.:	7
Heat No.:	63981	Cta's job:	OC0000657	Date:	20/03/2023
P.O. No.:	PO:			Item:	I3364302

3

7500110798 DTD: 20230301 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC

JINDAL SAW LTD.

INSPECTION CERTIFICATE (CERTIFICATION AS PER EN 10204: 2004 Type 3.1)									
CLIENT / CUSTOMER		CERTIFICATE NO. : JSAN/CTA/327/TC/22/01 Rev.00							
END CLIENT		DATE : 26/05/2022							
P. O. NO.		P. O. ORDER QTY. : 300 Meter							
PROJECT		---							
SPECIFICATION		AUSTENITIC STAINLESS STEEL SEAMLESS PIPES IN ACCORDANCE WITH ASTM A312/ASME SA312 EDITION 2022// EN 10216-5 TC 1 EDITION 2013							
PRODUCT:		AUSTENITIC STAINLESS STEEL COLD FINISHED SEAMLESS PIPE							
HEAT NO.	GRADE	SIZE IN INCH / mm	FIX / RANDOM LENGTH (mm)	NOS	TOTAL LENGTH (meter)	TOTAL WEIGHT (MT)	LOT NO	END FINISH (PE / BE)	DELIVERY CONDITIONS
63981	TP 304/304L 1.4301/1.4307	NPS 2 SCH 10S (60.30 mm OD x 2.77 mm WT.)	5000 - 7000	49	282.530	1.212	1	PE	SOLUTION ANNEALED, PICKLED & PASSIVATED
CHEMICAL COMPOSITION %									
ELEMENTS	C	Mn	P	S	Si	Ni	Cr	Nb	Mo
REQUIRED	MIN.	--	--	--	--	8.0	18.0	--	--
REQUIRED	MAXIMUM	0.030	2.00	0.040	0.015	10.0	19.5	--	--
RAW MATERIAL	Leadie	63981	0.027	1.75	0.037	0.26	8.13	16.11	--
Product I	63981	0.027	1.76	0.038	0.009	0.28	8.13	18.12	--
Product II		0.025	1.72	0.035	0.012	0.26	8.11	18.10	--
DESTRUCTIVE TEST RESULT									
TENSILE TEST (SPECIMEN - RECTANGULAR LONGITUDINAL DIRECTION) (SAMPLE WIDTH 25.4 mm FOR ASTM A370 - 2021 & 200 mm FOR ISO 6892-1:2019)									
REQUIRED	YIELD STRENGTH AT 0.2 % PROOF STRENGTH (MPa) AS per ASTM A370 - 2021	YIELD STRENGTH AT 0.2 % PROOF STRENGTH (MPa) AS per ASTM A370 - 2021	ULTIMATE TENSILE STRENGTH (MPa) AS per ISO 6892-1:2019	ULTIMATE TENSILE STRENGTH (MPa) AS per ISO 6892-1:2019	% ELONGATION (GAUGE LENGTH 50mm) AS PER ISO 6892-1:2019	FLATTENING TEST AS PER ASTM A370 - 2021	HARDNESS TEST AS PER ASTM E 18:2020	IGC TEST AS PER ASTM A 262 : PRACTICE E'	FLANGE TEST/DRASTIC EXPANSION TEST AS PER EN ISO 845 : 1998 OTHER DESTRUCTIVE TEST
REQUIRED	205 (min.)	205 (min.) / 230 (min.)	515 - 680	515 - 680	40 (min.)	H = 22.21 mm MAXIMUM NO CRACK OR BREAK OBSERVED ON INSIDE & OUTSIDE SURFACE	90 HRB MAXIMUM	NO CRACK OR FISSURE, AT 20X MAGNIFICATION	OUTER DIA EXPANSION 17 % WITH 80° CONICAL TOOL, NO CRACK ACCEPTABLE
63981	326	336 / 372	632	648	46	44	TESTED SAMPLE = 03 NOS. RESULT FOUND SATISFACTORY	60- 65 (HRB)	SATISFACTORY
REVIEWED BY IN-CHARGE LABORATORY Format No.: JSW/SNG/SMS/QAYFR-17	Dinesh Parmar IN-CHARGE QA	Nilesh Soni APPROVED BY HEAD QA/QC	Date: 01.01.2022	CLIENT / CLIENT REPRESENTATIVE					





CTA Group

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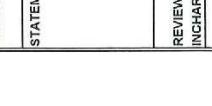
Customer : TECNIMONT SPA AFC

Kg 168 Mt 40,73 Pz No.: 7  
Heat No.: 63981 Cta's job: OC0000657 Date: 20/03/2023  
P.O. No.: PO: Item: I3364302

3

7500110798 DTD: 20230301 N.PRO: 4274 - PP+PE SINES (PORTUGAL) EPC

JINDAL SAW LTD.

INSPECTION CERTIFICATE (CERTIFICATION AS PER EN 10204: 2004 Type 3.1)				Kg 168	Mt 40,73	Pz No.: 7
CLIENT / CUSTOMER	: M/s COMMERCIALE TUBI ACCIAIO S.P.A.	CERTIFICATE NO.	USA/W/CTA/327/T/TC22/01 Rev 00	Heat No.: 63981	Cta's job: OC0000657	Date: 20/03/2023
END CLIENT	-	DATE	28/05/2022	P.O. No.: PO:	Item: I3364302	
P. O. NO.	: OS-0000212 DATED 29/12/2021 (P.O. LINE ITEM NO.- 7)	P.O. ORDER QTY.	: 300 Meter			
PROJECT						
SPECIFICATION	: AUSTENITIC STAINLESS STEEL SEAMLESS PIPES IN ACCORDANCE WITH ASTM A312/ASME SA312 EDITION 2021/ EN 10216-5 TC 1 EDITION 2013					
PRODUCT:	: AUSTENITIC STAINLESS STEEL COOL FINISHED SEAMLESS PIPE					
-	HYDRO TEST (ASTM A99 : 2018)	SURFACE CONDITION	PNI	VISUAL & DIMENSION INSPECTION	EDDY CURRENT	NON DESTRUCTIVE TEST
REQUIREMENT	EACH PIPE TESTED AT MIN 11.0 MPa, HOLDING TIME 5 SEC. CHLORIDE CONTENT OF HYDRO TEST WATER ≤ 50 ppm	EACH PIPE PICKLED & PASSIVATED, FREE FROM RUST, DIRT & FOREIGN PARTICLES	EACH PIPE	EACH PIPE	NOT APPLICABLE	NOT APPLICABLE
RESULT	NO SWEATS, LEAKAGE AND NO PRESSURE DROP OBSERVED AT 11.0 MPa, HOLDING TIME 5 SEC., CHLORIDE CONTENT OF HYDRO TEST WATER LESS THAN 50 ppm	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	NOT APPLICABLE	NOT APPLICABLE
ABBREVIATED: MIN. = MINIMUM, MAXIMUM = MAXIMUM						
REMARKS:						
1. RAW MATERIAL ORIGIN : INDIA 2. STEEL MAKING PROCESS - EIF-AOD-CCM. 3. ALL PIPES ARE BUNDLED, PACKED WITH HOPE WOVEN FABRIC & SUPPLIED WITH PLASTIC END CAPS. 4. ALL PIPE HAS BEEN SOLUTION ANNEALED AT MINIMUM TEMPERATURE 1040 °C & QUENCHED IN WATER. 5. MATERIAL COMPLIED TO NACE MR 0175/ISO 1563-3 : 2015 & NACE MR0103 : 2015". 6. "ISSUED IN AGREEMENT WITH TUV SUD INDUSTRIES SERVICE GMBH (DECEMBER, 2023)" "QMS APPROVED ACC TO PED, ANNEX I, PARA. 4.3 BY NOTIFIED BODY 0036" "(CERTIFICATION NO. DGR-0036-QSW-B24/2017/MUC-001)"						
MARKING:						
JINDAL LOGO JINDAL SAW LTD PE NPS 2 SCH 10S X 5000 - 7000 MM LONG ASTM A312/ASME SA312/EN 10216-5 TC 1 CFD SMLS PIPE TP 304/304L/1 430/1/4307 HEAT NO..... MADE IN INDIA NS THIS IS TO CERTIFIED THAT THE MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH REQUIREMENTS OF THE MATERIAL SPECIFICATION AND HAS BEEN FOUND TO MEET THE REQUIREMENTS OF SPECIFICATION & PURCHASE ORDER.						
  						
REVIEWED BY INCHARGE LAB	Dinesh Parmar REVIEWED BY INCHARGE QA	Nilesh Soni APPROVED BY HEAD QA/QC	Version 2.0	Date: 01/01/2022	CLIENT / CLIENT REPRESENTATIVE	
Format No:-JSW/SMG/SMLS/QA/FR-17						



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

Village : Samaghogha, Taluka : Mundra, Kutch - 370415, Gujarat, India

ORIGINAL  
Page 2 of 2

**Viraj Profiles Private Limited (Forgings Div.)**

 Survey No. 140/1 & G-75, MIDC Tarapur Ind. Area, Distt.- Palghar, Maharashtra - 401506, India  
 E: vflqc@viraj.com | W: www.viraj.com

**(A02) INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1**

<b>(A06) CUSTOMER :</b> M/S CUNADO SA (ESQUINA CALLE MEXICO) 28806 ALCALA DE HENARES (MADRID) CALLE CAMINO DEL OLIVAR, 2 SPAIN	Manufacturer's Symbol (A04)	(A03) MTR NO.	100017332/ 13 Rev.1
		INVOICE NUMBER	
		(Z02) DATE	12.09.2023
		MATERIAL SPEC	ASTM A182/A182M-21 / ASME SA182/SA182M-21
		(B02) GRADE	F304/304L
		DIMENSIONAL SPEC	ASME B16.5-2020

**(B01) STAINLESS STEEL FORGED FLANGES**
**(B04) DELIVERY CONDITION : HOT FORGED AND FULLY MACHINED**

ISO 9001:2015-TUV NORD REG.No-04100031210/05 EXPIRY DATE: 22.07.2024 &amp; APPROVED ACCORDING TO AD 2000 MERKBLATT W0 &amp; CERTIFIED ACCORDING TO PRESSURE EQUIPMENT DIRECTIVE(PED) 2014/68/EU,CERTIFYING BODY-TUV NORD SYSTEMS (NOTIFIED BODY REGISTRATION No. 0045)

(A07) ORDER NO: PC0159958 - PROJECT 4274 ALBA									(A08) Sales Order No.	100017332/160	ITEM NO & COMMUNITY CODE	6 / I2260686
(B09-B11) ITEM DESCRIPTION									(B08) QUANTITY(PCS)	(B07) HEAT NUMBER		
2" WNRF S10S 150#									12	DA182		

**(C71-C92) CHEMICAL ANALYSIS**

ELEMENT	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%N			
MIN						18.00	8.00	-				
MAX	0.030	2.00	1.00	0.030	0.045	20.00	11.00	-	0.1100			
HEAT	0.016	1.58	0.42	0.024	0.036	18.18	8.06	-	0.0780			

**MECHANICAL PROPERTIES**
**Test Specification ASTM - A370**

(C01) Sample location : Mid thickness-forging		(C03) Test Temp : RT	(C02) Test Direction : Tr	(C10) Specimen Shape - Round		ASTM E10					
Test Values	(C12) Tensile Strength	(C11) Yield Strength		(C13) Elongation%	Reduction of Area	(C32) Hardness (Hardness ≤ 22 HRC)		(C40) Charpy V-Notch 10x10x55mm (Values in Joules)			
		Rp=0.2%	Rp = 1%			BHN-1	BHN -2	AVG.	1	2	3
Req.	515 MIN	205 MIN		30 MIN							
T	553.72	280.69	324.18	57.80	70.40	158	157	158	174	182	162
											173

**Other applicable Specifications :: NACE MR 0175 / ISO 15156-2015 & NACE MR 0103-2015**

Remark: Materials is suitable for min. design temperature TS min = -50°C for 304/304L as permitted by ASME B31.3:2018 without verification

**Melting Process :** Induction furnace/Aragon Oxygen Decarburisation (AOD-IRS), Concast

**Heat Treatment** : Solution Annealed at 1080°C and water Quenched

**Dimension** : Conform with the specification (100% inspected)

**Surface Inspection** : Satisfactory Roughness Value Ra 3.2 To 6.3 μm

**Inter Granular Corrosion Test** : Passed IGC Test in Accordance With ASTM A262 Practice E

**PMI Test** : No objection (100% tested with mobile spectro)

**Liquid Penetrant Test** : No Objection Tested as per Astm E165

**ULTRASONIC TEST** : No Objection Tested as per ASTM E-388 & ASME V

**Radioactivity Test** : We here by certify that all the material is free from radioactive contamination

**Mercury Contamination** : Free from Mercury Contamination

We certify that the above material has been inspected and tested and complies with the order/contract and is of Indian origin

**Prime4 OBO Technimont**


VIJAY KUMAR PILLAI (GM, QAD)



INSPECTION CERTIFICATE EN 10204/3.1																					
CE23007015_3.1_01																					
<b>Customer Order</b> 7500107591 AM.2-Proj.4274 Your Item Ref. Sines 595-12259145																					
<b>Article/Specification</b> Seamless elbows WP304/304L-S ASTM/ASME A/SA-403-17 ASME B16.9/18																					
<b>Heat Treatment</b> Cold formed - Solution annealed at 1050°Cx1,5/mm																					
<b>Marking</b> IT - CENA - SA 403 WP304/304L-S - Heat Nr - Od. x Th.																					
<b>Extent of material delivered</b> Our pos. Quantity Article																					
OV23000256/2110000 NR 4 LR 45° 2" Sch.10s																					
<b>Heat</b> S1030418		<b>Marking code</b> S1030418	<b>Certificate</b> 21-03-0111 *		<b>Supplier</b> HUADI STEEL GROUP CO., LTD																
<b>Raw material</b> Seamless pipe ASTM/ASME A/SA 312 Gr.TP304																					
<b>Results of chemical analysis %</b> Ceq: C+ (Mn/6) + (Cr +Mo + V)/5 + (Cu + Ni)/15																					
min.	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	Ti	Nb	V	N	B	Ceq	Pcm	Jfact.			
						8,0000	18,0000														
max.	0,0800	2,0000	1,0000	0,0450	0,0300		11,0000	20,0000													
Ladle	0,022	1,35	0,31	0,027	0,002		8,05	18,03													
Check	0,021	1,34	0,32	0,026	0,003		8,06	18,04													
<b>Mechanical Tests: On fittings</b>																					
<b>Specimen</b>  0103711.0.0	<b>Position</b>  A	<b>Direction</b>  L	<b>Temperature °C</b>  20	<b>Dimension mm</b>  235	<b>Yield Point N/mm²</b>  540	<b>Tensile Strength N/mm²</b>  46	<b>Elongation %</b>  0,44	<b>Hardness</b>  143-145	<b>Impact Test - Specimen = KV</b>												
									<b>Position</b>  235	<b>Direction</b>  540	<b>Temperature °C</b>  46	<b>Dimension mm</b>  143-145	<b>Obtained energy Joule</b>				<b>Shear Area %</b>				
													<b>Values</b>  143-145	<b>Average</b>  540	<b>Values</b>  143-145				<b>%</b>  540		
<b>The pipes are tested on tightness.</b>																					
<b>Steel making process:</b>																					
<b>Specimen position:</b> A=neutral axis of base material; W=weld; E=extrados of base material; I=intrados of base material; Z=heat affected zone																					
<b>Results of visual and dimensional inspection of fittings: SATISFACTORY</b> Controllo visivo e dimensionale dei pezzi speciali / Results of visual and dimensional inspection of fittings: Soddisfacente / Satisfactory Il materiale fornito è in accordo ai requisiti dell'ordine / The product supplied is in compliance with the requirements of the order Documento redatto a fronte delle prove eseguite o della documentazione in ns.possesso. / Edited document on the strength of the made examinations or our own documents. Prodotti decapati e passivati / Products pickled and passivated Controllo PMI / Alloy steel verification (PMI):soddisfacente / satisfactory Prova di corrosione intergranulare secondo ASTM A 262 E / IGC test according to ASTM A262 E: soddisfacente/satisfactory --- La società VIRGILIO CENA S.p.A. garantisce que tous le produits, objet du certificat susdit, respectent en leur totalité les spécifications de l'article 15 de l'Arrêté Ministeriel du 24 mars 1978. Materiale esente da radiazioni / Material radiation free Material compliant with PED2014/68/EU																					

Date  
06/06/23

Inspection


  
 GAUDIO  
 FRANCESCO  
 ON BEHALF OF:  
 KEX-TOM  
 19-LUG-2023

Quality Control Manager  
BUTTURINI RICCARDO

THIS DOCUMENT HAS BEEN ISSUED WITH THE INFORMATIC HELP  
AND IT IS VALID WITHOUT A SIGNATURE.  
MODIFICATIONS OR ELSE OTHER PRODUCTS USE WILL BE PERSECUTED ACCORDING TO THE LAW  
AS FALSIFICATION OF DOCUMENTS OR FRAUD.

21-21-03-011



华迪钢业集团有限公司  
HUADI STEEL GROUP CO., LTD  
工 检 验 证 书  
MILL TEST CERTIFICATE (EN 10204/3.1)

NO.MD00/3209/0001/4 Industrie Service

DESCRIPTION OF GOODS: SEAMLESS STAINLESS STEEL PIPE DELIVERY CONDITION: COLD FINISHED PICKLED&SOLUTION ANNEALED AT 1050 DEG. C COOLING MEDIUM:WATER STEELMAKING: AOD FURNACE NO WELD REPAIR AND MERCURY FREE										Date (日期) :21.03.07 No. (编号) :21-03-011	Surface condition (表面情况)	Size tolerance (尺寸公差)	Lot No. (批号)
No.	Heat No. (炉号)	Grade (钢种)	Elements	C	S	Mn	P	S	Ni	Cr	Mo	Ti	
		Specification	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	8.0-13.0	18.0-20.0	--	--	--	
1	S1030418	TP304L	Results (Heat)	0.022	0.31	1.35	0.027	0.002	8.05	18.03	--	--	HD2021022060
		Results (product)	0.021	0.32	1.34	0.026	0.003	8.06	18.04	--	--	--	
No.	Size (尺寸)	QTY 数量	T. S. 抗拉伸强度	Y. S. 屈服强度	EL. GL=50mm 延伸率 (%) GW=25.4mm	IGC 晶间腐蚀 ASTM A262 E	Flattening Test 压扁 Continuous Heating Furnace	Hardness HB 硬度	PMI Test 材质鉴定 Gradual Pcs	Eddy Current Test 涡流 Gradual Pcs	Hydrostatic Test 水压 Gradual Pcs	Ultrasonic Test 超声 Gradual Pcs	
	MTS (Mpa)	(Mpa)	(Mpa)	(%)	(%)								
1	60.3*3	420	540	235	46	ACCEPTABLE	ACCEPTABLE	145	ACCEPTABLE	ACCEPTABLE	—	—	—

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

Country of melt and Country of manufacture:  
Zhejiang China

ISSUED BY YEHE JIE JUDGED BY

ADD: 24-32 ZHENBIAO ROAD, YOUNGZHONG TOWN, WENZHOU, ZHEJIANG, CHINA TEL: 86-577-55982882 FAX: 86-577-28806686





Contract : P2300

Drawing : 2121-IA91F63-7

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00496

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F63-7-SP15-00496

## 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
0073	BW	2	S10S	MW.26_BW	AH	26/03/2024	4712055	AH	26/03/2024	4712055			000338	28/03/2024				000252	05/04/2024										
0074	BW	2	S10S	MW.26_BW	AH	26/03/2024	4712055	AH	26/03/2024	4712055			000338	28/03/2024				000252	05/04/2024										
0075	BW	2	S10S	MW.26_BW	AH	26/03/2024	4712055	AH	26/03/2024	4712055			000338	28/03/2024				000252	05/04/2024								000105	29/03/2024	

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

Notes:

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Signature	Boccard Portugal QC	Client
		Sergio Morales Date: 15-10-24
Date	03/05/2024 14:02:34	



# Shop QC Inspection Report

P2308-000347

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

Job number: P2308S  
 Spool N°: 00496  
 Piece Mark: 2121-IA91F63-7-SP15-00496

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

Control Date: 28/03/2024

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: RODRIGUES, JOSE  Date: 28/03/2024  Signature 	QA/QC Inspection: GIL, MIGUEL  Date: 03/05/2024 14:02:34  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)

P2308-000338

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00496

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

Project : ALBA

Piece Mark: 2121-IA91F63-7-SP15-00496

Testing Date: 28/03/2024

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			Welder	Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
Weld No.	Weld Desc.								
0073	2.0000 S10S BW-Buttweld Straight (MW.26_BW)		AH	15	X			Direct	
0074	2.0000 S10S BW-Buttweld Straight (MW.26_BW)		AH	15	X			Direct	
0075	2.0000 S10S BW-Buttweld Straight (MW.26_BW)		AH	15	X			Direct	

Sketch / Photo:

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

Test Performed by: RODRIGUES, JOSE

QA/QC Inspection: GIL, MIGUEL

Customer Inspection:

Date: 28/03/2024

Date: 03/05/2024 14:02:34

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)

P2308-000252

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00496

Piece Mark: 2121-IA91F63-7-SP15-00496

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: 05/04/2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0073	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	125	0	0	0	8	69	1	19	0	0	0	X		
0074	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	124	0	0	0	8	70	1	18	0	0	0	X		
0075	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	123	0	0	0	9	69	1	18	0	0	0	X		
1.3	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (63981)	119	0	0	0	7	70	2	17	0	0	0	X		
5.1	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (S1030418)	120	0	0	0	8	70	1	17	0	0	0	X		
5.2	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (S1030418)	122	0	0	0	7	72	1	17	0	0	0	X		
6.1	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (DA182)	121	0	0	0	7	71	1	17	0	0	0	X		

On behalf of Tecnimont / R  
 Piping Supervisor  
 Cristi Sandu  
 18.10.2024

Test Performed by: FIGUEIRAS(QA), RUI (N2 PT/RT) QA/QC Inspection:

Date: 05/04/2024

Signature

GIL, M. Gómez

Date:

Signature

Customer Inspection:

Sergio Morales

Date:

Date: 15-10-24



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

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Reading No	125
Mode	ALLOY
Time	2024-04-05 10:16
Duration	3.13
Sequence	Final
Alloy1	304SS : 0.30
Alloy2	No Match : *2.06
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.095
Sn	< LOD	:	0.117
Pd	< LOD	:	0.076
Ag	< LOD	:	0.189
Al	< LOD	:	80.000
Mo	0.061	±	0.019
Nb	< LOD	:	0.021
Zr	< LOD	:	0.010
Bi	< LOD	:	0.035
Pb	< LOD	:	0.048
Se	< LOD	:	0.011
W	< LOD	:	0.137
Zn	< LOD	:	0.051
Cu	< LOD	:	0.314
Ni	8.878	±	0.637
Co	< LOD	:	1.050
Fe	69.301	±	0.963
Mn	1.809	±	0.444
Cr	19.225	±	0.565
V	< LOD	:	0.308
Ti	< LOD	:	0.298

Supervised By:

Sergio Morales



Date: 15-10-24

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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

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Reading No	124
Mode	ALLOY
Time	2024-04-05 10:16
Duration	3.14
Sequence	Final
Alloy1	304SS : 0.72
Alloy2	No Match : 2.45
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.066
Sn	< LOD	:	0.112
Pd	< LOD	:	0.081
Ag	< LOD	:	0.142
Al	< LOD	:	80.000
Mo	0.070	±	0.019
Nb	< LOD	:	0.012
Zr	< LOD	:	0.009
Bi	< LOD	:	0.002
Pb	< LOD	:	0.034
Se	< LOD	:	0.011
W	< LOD	:	0.203
Zn	< LOD	:	0.089
Cu	< LOD	:	0.329
Ni	8.065	±	0.603
Co	< LOD	:	1.023
Fe	70.863	±	0.937
Mn	1.893	±	0.434
Cr	18.411	±	0.540
V	< LOD	:	0.265
Ti	< LOD	:	0.298

Supervised By:

Sergio Morales

Date: 15-10-24



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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

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Reading No	123
Mode	ALLOY
Time	2024-04-05 10:16
Duration	3.96
Sequence	Final
Alloy1	304SS : 0.46
Alloy2	No Match : *2.06
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.084
Sn	< LOD	:	0.093
Pd	< LOD	:	0.077
Ag	< LOD	:	0.133
Al	< LOD	:	80.000
Mo	0.361	±	0.037
Nb	< LOD	:	0.016
Zr	< LOD	:	0.012
Bi	< LOD	:	0.016
Pb	< LOD	:	0.053
Se	< LOD	:	0.018
W	< LOD	:	0.171
Zn	< LOD	:	0.079
Cu	< LOD	:	0.322
Ni	9.069	±	0.563
Co	< LOD	:	0.906
Fe	69.883	±	0.833
Mn	1.648	±	0.380
Cr	18.346	±	0.482
V	< LOD	:	0.253
Ti	< LOD	:	0.245

Supervised By:

Sergio Morales

Date: 15-10-24



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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

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Reading No	119
Mode	ALLOY
Time	2024-04-05 10:14
Duration	2.90
Sequence	Final
Alloy1	301SS : 1.80
Alloy2	No Match : 2.63
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.081
Sn	< LOD	:	0.127
Pd	< LOD	:	0.083
Ag	< LOD	:	0.213
Al	< LOD	:	80.000
Mo	0.233	±	0.036
Nb	< LOD	:	0.025
Zr	< LOD	:	0.010
Bi	< LOD	:	0.040
Pb	< LOD	:	0.066
Se	< LOD	:	0.031
W	< LOD	:	0.194
Zn	< LOD	:	0.065
Cu	< LOD	:	0.412
Ni	7.632	±	0.643
Co	< LOD	:	1.128
Fe	70.479	±	1.014
Mn	2.252	±	0.481
Cr	17.914	±	0.581
V	< LOD	:	0.277
Ti	< LOD	:	0.376

Supervised By:

Sergio Morales

Date: 15-10-24



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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

---

Reading No	120
Mode	ALLOY
Time	2024-04-05 10:15
Duration	3.14
Sequence	Final
Alloy1	321SS : 0.63
Alloy2	No Match : 1.85
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.084
Sn	< LOD	:	0.111
Pd	< LOD	:	0.088
Ag	< LOD	:	0.163
Al	< LOD	:	80.000
Mo	0.561	±	0.054
Nb	< LOD	:	0.022
Zr	< LOD	:	0.006
Bi	< LOD	:	0.029
Pb	< LOD	:	0.050
Se	< LOD	:	0.018
W	< LOD	:	0.208
Zn	< LOD	:	0.049
Cu	0.486	±	0.212
Ni	8.528	±	0.649
Co	< LOD	:	1.069
Fe	70.139	±	0.984
Mn	1.785	±	0.451
Cr	17.908	±	0.563
V	< LOD	:	0.270
Ti	< LOD	:	0.393

Supervised By:

Sergio Morales



Date: 15-10-24

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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

---

Reading No	122
Mode	ALLOY
Time	2024-04-05 10:15
Duration	3.16
Sequence	Final
Alloy1	301SS : 0.45
Alloy2	No Match : *2.38
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

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	%	±	Error
Sb	< LOD	:	0.075
Sn	< LOD	:	0.116
Pd	< LOD	:	0.083
Ag	< LOD	:	0.152
Al	< LOD	:	80.000
Mo	< LOD	:	0.020
Nb	< LOD	:	0.019
Zr	< LOD	:	0.010
Bi	< LOD	:	0.045
Pb	< LOD	:	0.053
Se	< LOD	:	0.013
W	< LOD	:	0.199
Zn	< LOD	:	0.082
Cu	< LOD	:	0.335
Ni	7.344	±	0.620
Co	< LOD	:	1.104
Fe	72.297	±	0.990
Mn	1.468	±	0.441
Cr	17.725	±	0.563
V	< LOD	:	0.299
Ti	< LOD	:	0.269

Supervised By:

Sergio Morales

Date: 15-10-24



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



BOCCARD PORTUGAL LDA

### Certificate of Verification

XL3t-32735

---

Reading No	121
Mode	ALLOY
Time	2024-04-05 10:15
Duration	3.39
Sequence	Final
Alloy1	301SS : 1.35
Alloy2	304SS : 1.79
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.100
Sn	< LOD	:	0.105
Pd	< LOD	:	0.081
Ag	< LOD	:	0.154
Al	< LOD	:	80.000
Mo	< LOD	:	0.015
Nb	< LOD	:	0.011
Zr	< LOD	:	0.011
Bi	< LOD	:	0.026
Pb	< LOD	:	0.021
Se	< LOD	:	0.017
W	< LOD	:	0.222
Zn	< LOD	:	0.077
Cu	< LOD	:	0.324
Ni	7.885	±	0.612
Co	< LOD	:	1.041
Fe	71.664	±	0.955
Mn	1.868	±	0.439
Cr	17.916	±	0.546
V	< LOD	:	0.306
Ti	< LOD	:	0.339

Supervised By:

Sergio Morales

Date: 15-10-24



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

Contract : P2308  
Client : NERVION  
Project : ALBA

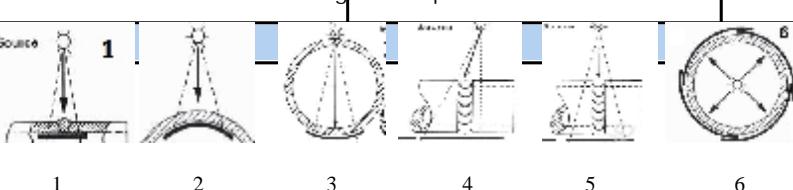
Spool N°: P2308S-00496  
Isometric N°: 2121-IA91F63-7  
Piece Mark: 2121-IA91F63-7-SP15-00496

## Procedure/ Instruction:

## Acceptance Criteria:

## Testing Date:

## Material:

4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		29/03/2024		Stainless Steel 304, 316, 317																															
Equipment		Normal Fluid Film		IQI																															
Type: G-RAY		Brand: FUJI		Type: ASTM-1A																															
Source Equip: Ir192		Type: IX50		Position: Film Side																															
Source Dim: 2x0,875		Class: C3		Sensitivity: 4																															
Activity (Ci): 27,1		Lead Sheets: 0,5		Ø of visible wire/hole 0,0063(0,16)																															
Films/Casette:Single		Testing Technique		Indication Codes (ISO 6520)																															
				<table border="1"> <tr> <td>BB-Back Bevel</td> <td>EP-Excess Penetration (504)</td> <td>SB-Suck Back</td> </tr> <tr> <td>FA-Film Artifact</td> <td>ST-Sugared Tack</td> <td></td> </tr> <tr> <td>BW-Back Weld</td> <td>GR-Grind Repair</td> <td>SU-Surface</td> </tr> <tr> <td>BT-Burn Through (510)</td> <td>HL-Hi-LO</td> <td>T-Tungsten</td> </tr> <tr> <td>C-Cap</td> <td>LC-Lack of Cleanup</td> <td>UC-Undercut (5011)</td> </tr> <tr> <td>CP-Clustered Porosity (2012)</td> <td>LF-Lack of Fusion (401)</td> <td>UP-Unformity Porosity (2013)</td> </tr> <tr> <td>CL-Cold Lap</td> <td>LP-Lack of Penetration (402)</td> <td>V-Valley in Cap</td> </tr> <tr> <td>CR-Crack</td> <td>P-Porosity (2011)</td> <td>W-Wire</td> </tr> <tr> <td>CC-Crater Crack (104)</td> <td>R-Root</td> <td>WH-Worm Hole (2016)</td> </tr> <tr> <td>DI-Dimensional</td> <td>S-Slag (301)</td> <td>XN-Xray Film Non-Conform</td> </tr> </table>		BB-Back Bevel	EP-Excess Penetration (504)	SB-Suck Back	FA-Film Artifact	ST-Sugared Tack		BW-Back Weld	GR-Grind Repair	SU-Surface	BT-Burn Through (510)	HL-Hi-LO	T-Tungsten	C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)	CP-Clustered Porosity (2012)	LF-Lack of Fusion (401)	UP-Unformity Porosity (2013)	CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap	CR-Crack	P-Porosity (2011)	W-Wire	CC-Crater Crack (104)	R-Root	WH-Worm Hole (2016)	DI-Dimensional	S-Slag (301)	XN-Xray Film Non-Conform
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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
0075	2.0000 S10S BW (MW.26_BW)	AH	A	500	440	NA	4	394s	2.8	W4	-	RX165
0075	2.0000 S10S BW (MW.26_BW)	AH	B	500	440	NA	4	394s	2.8	W4	-	RX165

Contract : P2308  
Client : NERVION  
Project : ALBA

Spool N°: P2308S-00496  
Isometric N°: 2121-IA91F63-7  
Piece Mark: 2121-IA91F63-7-SP15-00496

## Procedure/ Instruction:

## Acceptance Criteria:

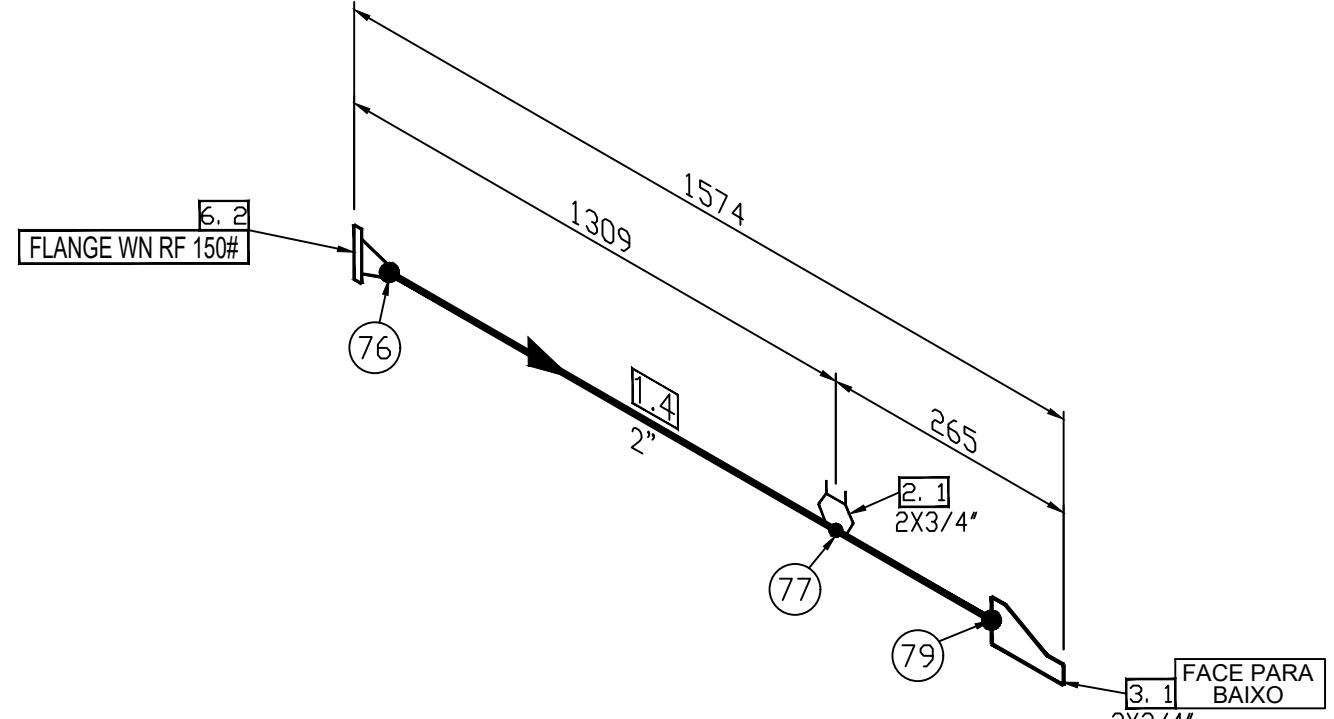
## Testing Date:

## Material:

4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		29/03/2024		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: 2x0,875	Class: C3	Sensitivity: 4		Temperature: 29	
Activity (Ci): 27,1	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					
1	2	3	4	5	6
Source					
BB-Back Bevel	EP-Excess Penetration (504)	SB-Suck Back			
FA-Film Artifact		ST-Sugared Tack			
BW-Back Weld	GR-Grind Repair	SU-Surface			
BT-Burn Through (510)	HL-Hi-LO	T-Tungsten			
C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)			
CP-Clustered Porosity (2012)	LF-Lack of Fusion (401)	UP-Uniformity Porosity (2013)			
CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap			
CR-Crack	P-Porosity (2011)	W-Wire			
CC-Crater Crack (104)	R-Root	WH-Worm Hole (2016)			
DI-Dimensional	S-Slag (301)	XN-Xray Film Non-Conform			
General Remarks					
The results refer to the controlled items	- Good	/ Acceptable	+ Repair	= Good after Repair	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	Density	IQI	Indication	Decision	Remarks Code
	Performed by:	Examined by:			QA/QC Inspection:			Customer Inspection:					
Name:	GONCALVES(QA), J. (N2 PT/RT)	FIGUEIRAS(QA), RUI (N2 PT/RT)			GIL, MIGUEL								
Date:	29/03/2024	29/03/2024			03/05/2024 14:02:34								
Signature:								Sergio Morales Date: 15-10-24 					

On behalf of Tecnicmont / R  
Piping Supervisor  
Cristi Sandu  
18.10.2024 

<div style="text-align: center; padding: 10px;">    <b>N</b> </div> <div style="text-align: center; margin-top: 10px;">  <p>1309      1574      2"</p> <p>6.2 FLANGE WN RF 150#      1.4      2X3/4"</p> <p>76      77      79      3.1 FACE PARA BAIXO 2X3/4"</p> </div>	<div style="text-align: center; margin-bottom: 10px;"> <b>BILL OF MATERIAL</b> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>PIPE</b> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <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>1.4</td> <td>1,342</td> <td>2"</td> <td>S-10S</td> <td>PIPE - A312-TP304/304L DUAL GR SMLS, BExBE</td> <td>I3364302</td> </tr> </tbody> </table> <div style="text-align: center; margin-bottom: 10px;"> <b>FLANGES</b> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ITEM</th> <th>QT</th> <th>DIAMÉTRE</th> <th>PRESSION</th> <th>SCH/mm</th> <th>DESCRIPTION / MATERIEL</th> <th>ITEM CODE</th> </tr> </thead> <tbody> <tr> <td>6.2</td> <td>1</td> <td>2"</td> <td>150#</td> <td>S-10S</td> <td>WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH</td> <td>I2260686</td> </tr> </tbody> </table> <div style="text-align: center; margin-bottom: 10px;"> <b>WELD FITTINGS</b> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <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>3.1</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> </tbody> </table> <div style="text-align: center; margin-bottom: 10px;"> <b>FORGINGS</b> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <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>2.1</td> <td>1</td> <td>2" x 3/4"</td> <td>3000#</td> <td>REDUCING SOCKOLET MSS-SP-97 3000# A182-F304/304L DUAL GR BE SWE</td> <td>I2258338</td> </tr> </tbody> </table> <div style="text-align: right; margin-top: 10px;"> <span style="font-size: 10px;">P2308S 00497</span>    <span style="font-size: 10px;">2121-IA91F63-7-SP16-00497</span> </div> <div style="text-align: center; margin-top: 10px;"> <b>Weld Map Sticker</b> </div> <div style="text-align: center; margin-top: 10px;">  <span style="font-size: 10px;">boccard Alliance for success Boccard Portugal, Lda.</span> </div> <div style="text-align: left; margin-top: 10px;"> <p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu 18.10.2024 <i>C. Sandu</i></p> </div> <div style="text-align: left; margin-top: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Rev.</td> <td>Date</td> <td>DRW</td> <td>Check 1</td> <td>Check 2</td> <td>Marking Color: GREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Weld Class: 6C4-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> </table> </div> <div style="text-align: left; margin-top: 10px;"> <p>Sergio Morales Date: 15-10-24</p> </div> <div style="text-align: center; margin-top: 10px;">  </div> <div style="text-align: left; margin-top: 10px;"> <p>On behalf of Tecnimont / R Piping Supervisor Cristi Sandu 18.10.2024 <i>C. Sandu</i></p> </div> <div style="text-align: left; margin-top: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <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-IA91F63-7-SP16-00497</td> <td rowspan="2">2121-IA91F63-7</td> <td rowspan="2">P2308S</td> <td rowspan="2">00497</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>	ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	1.4	1,342	2"	S-10S	PIPE - A312-TP304/304L DUAL GR SMLS, BExBE	I3364302	ITEM	QT	DIAMÉTRE	PRESSION	SCH/mm	DESCRIPTION / MATERIEL	ITEM CODE	6.2	1	2"	150#	S-10S	WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125-250 AARH	I2260686	ITEM	QT	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE	3.1	1	2" x 3/4"	S-10S x S-40S	ECCENTRIC SWAGE MSS SP-95 - A403-WP304/304L DG BE PE SMLS	I2495783	ITEM	QT	DIAMETER	SCH/PRESS.	DESCRIPTION / MATERIAL	ITEM CODE	2.1	1	2" x 3/4"	3000#	REDUCING SOCKOLET MSS-SP-97 3000# A182-F304/304L DUAL GR BE SWE	I2258338	Rev.	Date	DRW	Check 1	Check 2	Marking Color: GREEN						Weld Class: 6C4-M	00	04/03/2024	ANP	LRG	PCO	Paint System: NR	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-IA91F63-7-SP16-00497	2121-IA91F63-7	P2308S	00497	REPSOL PROJETO ALBA NERVION	Metal Tag: YES	% MT - NO	% PMI - YES	BHN% - NO	Tolerances: ASME B31.3
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# Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

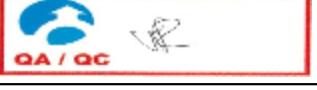
Project ALBA

Job	Spool	Piece Mark	Drawing	Rev					
Item No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No	Unit	Weight
Tag No							MTR No	Weight	Kgs
ID No							Folder No		
P2308S	00497	2121-IA91F63-7-SP16-00497	2121-IA91F63-7	00					
1.4	1,342	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	NY231216AS15	3,93	5,27
40391							0391		
6.2	1	2.0000	S10S	0.0000	NA	WN FLG, RAISED FACE, 150#, A182-F304L	CH-18449	2,72	2,72
37867							0393		
2.1	1	2.0000	NA	0.7500	NA	SOCKOLET, 3000#, A182-F304L	N220606AV04	0,15	0,15
88696							0297		
3.1	1	2.0000	S10S	0.7500	S40S	ECC SWAGE NIPPLE, LEB-SEP, A403-WP304L	N220606AV04	1,97	1,97
73272							0512		

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

Number of Items : 4

Total Weight : 10,12

Signature	QA	Client
		Sergio Morales Date: 15-10-24 
Date	2024-10-08 14:40:22	

 Stainless Steel Experience				 DNV				<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.



**CHANDAN STEEL LIMITED**  
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001:2015 CERTIFICATE No. 04100011022

**ADM. OFFICE:** 504, SUGHISAGAR, N. S. PATKAR MARG,  
MUMBAI 400 007, INDIA  
Tel: 91-22-66150600, Fax: 91-22-66150633/34  
Website: [www.chandansteel.net](http://www.chandansteel.net)  
Email: [rcv@chandansteel.net](mailto:rcv@chandansteel.net)  
L/c. No. :  
L/c. Date:

**WORKS:** Plot No. 35, G. I. D. C., Umbergaon  
Dist. Vadodara, Gujarat - 396 171, INDIA  
Tel.: 91-260-256 2066/4267/1166, Fax: 91-260-256 2287  
E-mail: [export@chandansteel.net](mailto:export@chandansteel.net)

**INSPECTION CERTIFICATE 3.1**  
ACCORDING TO EN 10204

RACCORDUBI SPA  
VIALE DE GASPERI, 194  
20010 MARCALLO CON CASONE  
(MILANO) - ITALIA

Test Certificate No. : EXP/22-23/01571 - 32  
Date of Issue : 18.03.2023  
P. O. No. : 00000350 Dt. 02-12-2022  
Invoice No. & Date : EXP/22-23/01571 Date- 18.03.2023

**ITEM DESCRIPTION**  
STAINLESS STEEL FORGED & FULLY MACHINED FLANGES

Po Sr No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Item	Process Route
9	CH-18449	158	5 & 7	409.41	ASTM/ASME A/SA182 F304/304L	2" WNRF150 LBS 10S	
-	-	-	-	-	-	-	Electric Induction Melting, A.O.D. Refining, Continuous Casting & Hot Forging
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

CHEMICAL COMPOSITION (Weight %)

Po Sr No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
9	0.023	0.52	1.74	0.036	0.005	18.23	-	8.07	-	-	0.077	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

MECHANICAL PROPERTIES

Po Sr No.	0.2% Yield Strength N/mm <sup>2</sup> (Rp0.2)	Tensile Strength N/mm <sup>2</sup> (R <sub>m</sub> )	Elongation %	Reduction of Area %	Hardness (H. B. W.)
9	261	566	57	74	162-166
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

**Remarks:**

1. The material is solution annealed at minimum 1050 °C and water quenched.
2. Visual and Dimensions inspection OK.
3. PMI Test 100%- Satisfactory.
4. No welding was performed on this material.
5. Material is free from mercury and radio-active contamination and is found within the limits of the background radiation.
6. Inter-Granular Corrosion Test (ASTM A262- 17 (Pt.B))- Satisfactory.
7. The material conforms to ASTM A 182 - 22, ASME SECTION II PART A SA 182 - 21 & Dimension confirms to ASME B16.5-20 Specification.
8. The material hardness conforms to NACE MR0175/ISO 15156-3:2015 & NACE MR0103-2015.
9. Surface roughness quality checked by comparator & found 125 - 250 AARH
10. Visual , Dimension and PMI performed by CSL.
11. Mechanical Testing performed by CSL.

We hereby certify that, the material described herein,  
and supplied are in compliance with the requirements of the order.



*V.Y. Narayanan*  
**V.Y.NARAYANAN**  
WORKS INSPECTOR

Customer: TECNIMONT S.p.A.  
Description: W.N. 2" S.150 RF SCH.10/S  
I2260686

Order: 7500118979 - 26.01.24 - Item n.: 184 - Project: 4274 - PP+PE Sines (Portugal) EPC - Our ref.: OCVEIT202400000475

Protocol: CTCERC202400003069 \* CERTIFIED TRUE COPY

\* Issued 14-03-2024



Heat num. or Pcs. marking: CH-18449 - Qty:22,00

Protocol: CTCERC202400003069 \* CERTIFIED TRUE COPY

\* Issued 14-03-2024



Zongnan Heavy Industries

江阴中南重工有限公司

Jiangyin Zhongnan Heavy Industries Co.,Ltd.

产品品质证明书 Quality Certificate EN10204-3.1

用户(Purchaser): (印度)TECNIMONT S.P.A

订单号:PO 7500110919

质量证明书编号 (Certificate No.): 2023-03-225-71

表号: ZNHI/W400-34-1  
修订号: 0

材质(Material): ASTM A182-2021 F304/304L DUL GR												化学成分 Chemical Composition (%)												机械性能 Mechanical Properties											
生产批号 Batch No.	品名 Designation	规格型号 Dimension	单位 Unit	数量 Qty	炉号 Heat No.	C	Si	Mn	P	Cr	Ni	T	Mo	V	Cu	Nb	Al	N	CE	R <sub>0.2</sub> R <sub>u</sub> (Mpa)	屈服强度 R <sub>u0.2</sub> R <sub>u</sub> (Mpa)	延伸 率 A%	断面 收缩 率 Z%	冲击试验(J) Impact Test Report 0°C (10*10*55mm)	硬度 HBW	PO item No.	备注 Remark								
2023-03-225-306	SOCKOLET SWE	SIZE:1.2 SIZE:2.0:0.5 2"0.5"**3000LB	件	5	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	306	Ident Code: 2258337							
2023-03-225-307	SOCKOLET SWE	SIZE:1.2 SIZE:2.0:0.75 2"0.75"**3000LB	件	5	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	307	Ident Code: 2258338							
2023-03-225-308	SOCKOLET SWE	SIZE:1.3 SIZE:2.0:0.75 3"0.75"**3000LB	件	10	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	308	Ident Code: 2258415							
2023-03-225-309	SOCKOLET SWE	SIZE:1.3 SIZE:2.1 3"1"**3000LB	件	5	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	309	Ident Code: 2258416							
2023-03-225-310	SOCKOLET SWE	SIZE:1.4 SIZE:2.0:0.75 4"0.75"**3000LB	件	5	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	310	Ident Code: 2258477							
2023-03-225-311	SOCKOLET SWE	SIZE:1.6 SIZE:2.0:0.75 6"0.75"**3000LB	件	5	N220606AV04	0.023	0.35	1.30	0.002	0.029	18.19	8.08							0.047	61.5	309	54.5	77	-	-	172/169/174	311	Ident Code: 2258518							
其他检测结果(Other examination and test)																																			
尺寸检查 Dimension Inspection	外观检查 Visual Inspection	硬度 Hardness (H13W≤201)	无损检测(NDT) MT	磁粉 MT	着色 PT	超声波 UT	X射线 RT	晶间腐蚀 Intergranular Corrosion Test	备注 Remark	交货状态 Delivery condition												兹证明上述产品制造、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.													
合格 OK	合格 OK	合格 OK	-	合格 OK	-	-	-	合格 OK	PMI OK	固溶 Solution Annealing												1.1 Heat treatment: Solution Annealing 1050°C in the water cooling.													
检验员(Inspector): 华洋	质检工程师(QA Engineer): 陈晓	签发日期(Date of issue): 2023.05.29												电话(Tel): 0510-8696009 传真(Fax): 0510-8696035												质量部门 Stamp of Quality Department 检验专用章									



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

生产批号 Batch No.	产品名称 Designation	规格型号 Dimension	单位 Unit	数量 Qty	炉号 Heat No.	化学成分 Chemical Composition (%)								机械性能 Mechanical Properties						产品执行标准(Product standards):		MSS SP-95-2018				
						C	Si	Mn	S	P	Cr	Ni	Ti	Mo	V	Cu	Nb	Al	N	CE	抗拉强度 $R_{m}$ (MPa)	屈服强度 $R_{p0.2}$ (MPa)	断面收缩率 Z %	延伸率 A %	冲击试验(J) 0°C (10*10.5mm)	硬度 HBW
2024-01-43-130	ECCENTRIC SWAGE	SIZE:1.2 SCHED.1 S-10S SIZE:2.0-7.5 SCHED.2 S-40S	PCS	3	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B495783
2024-01-43-131	ECCENTRIC SWAGE	SIZE:1.4 SCHED.1 S-10S SIZE:2.1 SCHED.2 S-40S	PCS	1	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B495816
2024-01-43-132	ECCENTRIC SWAGE	SIZE:1.2 SCHED.1 S-40S SIZE:2.1 SCHED.2 S-80S	PCS	2	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B496327
2024-01-43-154	CONCENTRIC SWAGE	SIZE:1.2 SCHED.1 S-10S SIZE:2.0-7.5 SCHED.2 S-40S	PCS	7	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B495660
2024-01-43-160	CONCENTRIC SWAGE	SIZE:1.4 SCHED.1 S-10S SIZE:2.1 SCHED.2 S-40S	PCS	3	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B495688
2024-01-43-162	ECCENTRIC SWAGE	SIZE:1.2 SCHED.1 S-80S SIZE:2.1 SCHED.2 S-80S	PCS	3	N220606AV04	0.021	0.38	1.34	0.003	0.032	18.29	8.11								57.9	265	57.5	-	-	-	Ident Code: B256804
其他检测结果(Other examination and test)																								其他(others):		
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	无损检测(NDT)			晶间腐蚀 Intergranular Corrosion Test			交货状态 Delivery condition			备注 Remark								
合格 OK	合格 OK	合格 OK	-	合格 OK	-	-	-	合格 OK	PMI OK	Solution Annealing	固溶 固溶															

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

印  
薛  
凯

检验员(Inspector): 印  
薛  
凯 质保工程师(QA Engineer):

签发日期(Date of issue):  
2024.04.22

地址: 江阴市高新技术产业开发区金山路788号  
Add: 788 Jinshan Rd, High and New Technology Industrial Development, JiangYin City, JiangSu P.R. China

电话(Tel): 0510-86996009  
传真(Fax): 0510-86996035

检验部门(章) Stamp of Quality Department

检验专用章



Contract : P2300

Drawing : 2121-IA91F63-7

## Welding and QC Report Per Spool

Job : P2300S

Material : Stainless Steel 304, 316, 317

Client : NERVION

Revision : 00

Spool : 00497

Spec : 6C4-M

Project : ALBA

Piece Mark : 2121-IA91F63-7-SP16-00497

## 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	
0076	BW	2	S10S	MW.26_BW	AY	01-10-2024	4712055	AY	01-10-2024	4712055			001050	03-10-2024			001047	07-10-2024												
0077	SOL	0,75	S10S	MW.26_SBR	AY	30-09-2024	4712055	AY	30-09-2024	4712055			001050	03-10-2024	000199	03-10-2024			001047	07-10-2024										
0079	BW	2	S10S	MW.26_BW	AY	01-10-2024	4712055	AY	01-10-2024	4712055			001050	03-10-2024			001047	07-10-2024									000335	04-10-2024		

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
08-10-2024 14:40:22	



# Shop QC Inspection Report

P2308-001087

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

Job number: P2308S  
 Spool N°: 00497  
 Piece Mark: 2121-IA91F63-7-SP16-00497

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

Control Date: 03-10-2024

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	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	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: GOIS, REINALDO (N2 VT)  Date: 03-10-2024  Signature	QA/QC Inspection: RAIMUNDO, MARIANA  Date: 08-10-2024 14:40:22  Signature	Customer Inspection: <b>Sergio Morales</b>  Date: 15-10-24  
---	---	--

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

# Visual Examination Report (Welds)

P2308-001050

Contract : P2308

Job number: P2308S

Material: Stainless Steel 304, 316, 317

Client : NERVION

Spool Nº: 00497

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

Project : ALBA

Piece Mark: 2121-IA91F63-7-SP16-00497

Testing Date: 03-10-2024

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

Weld No.	Weld Desc.	Identification		Temp. (°F/°C)	Accepted	Rejected	Defect	Technique Used	Comments
		Welder							
0076	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	22	X				Direct	
0077	0.7500 S10S SOL-Sockolet to Header Weld (MW.26_SBR)	AY	22	X				Direct	
0079	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	22	X				Direct	

Sketch / Photo:

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

Test Performed by: GOIS, REINALDO (N2 VT)

QA/QC Inspection: RAIMUNDO, MARIANA

Customer Inspection:

Date: 03-10-2024

Date: 08-10-2024 14:40:22

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

P2308-000199

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°: 00497

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

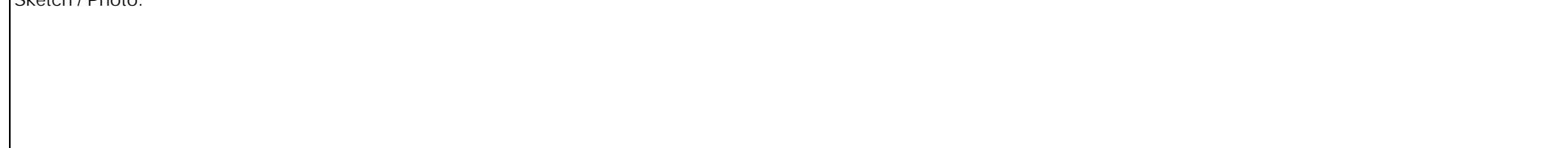
Piece Mark: 2121-IA91F63-7-SP16-00497

Testing Date: 03-10-2024

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				
0077	0.7500 S10S SOL-Socket to Header Weld (MW.26_SBR)	AY	21	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: REINALDO (N2 VT), GOIS

QA/QC Inspection: RAIMUNDO, MARIANA

Customer Inspection:

Date: 03-10-2024

Date: 03-10-2024

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)

P2308-001047

Client : NERVION

Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S

Spool N°: 00497

Piece Mark: 2121-IA91F63-7-SP16-00497

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: 07-10-2024

Weld / Item No	Description	Reading Number	Chemical Elements										Accepted	Rejected	Comments
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0076	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	134	0	0	0	9	69	1	19	0	0	0	X		
0077	0.7500 S10S SOL-Sockolet to Header Weld (MW.26_SBR)	135	0	0	0	9	69	1	19	0	0	0	X		
0079	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	136	0	0	0	8	69	1	19	0	0	0	X		
1.4	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (NY231216AS15)	131	0	0	0	7	71	1	17	0	0	0	X		
2.1	2.0000 NA 0.7500 NA SOCKOLET, 3000#, A182-F304L (N220606AV04)	132	0	0	0	8	71	1	18	0	0	0	X		
3.1	2.0000 S10S 0.7500 S40S ECC SWAGE NIPPLE, LEB-SEP, A403-WP304L (N220606AV04)	130	0	0	0	8	71	1	17	0	0	0	X		
6.2	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (CH-18449)	133	0	0	0	7	71	1	17	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:

Sergio Morales

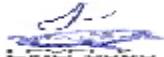
Date: 07-10-2024

Date: 08-10-2024 14:40:22

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	134
Mode	ALLOY
Time	2024-10-07 10:38
Duration	9.33
Sequence	Final
Alloy1	304SS : 0.04
Alloy2	No Match : *2.09
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.042
Sn	< LOD	:	0.051
Pd	< LOD	:	0.038
Ag	< LOD	:	0.145
Al	< LOD	:	80.000
Mo	0.083	±	0.010
Nb	< LOD	:	0.009
Zr	< LOD	:	0.003
Bi	< LOD	:	0.008
Pb	< LOD	:	0.023
Se	< LOD	:	0.007
W	< LOD	:	0.100
Zn	< LOD	:	0.030
Cu	< LOD	:	0.162
Ni	9.001	±	0.306
Co	< LOD	:	0.488
Fe	69.640	±	0.458
Mn	1.775	±	0.210
Cr	19.000	±	0.268
V	< LOD	:	0.137
Ti	< LOD	:	0.158

---

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	135
Mode	ALLOY
Time	2024-10-07 10:38
Duration	14.69
Sequence	Final
Alloy1	304SS : 0.00
Alloy2	No Match : *2.11
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.034
Sn	< LOD	:	0.042
Pd	< LOD	:	0.030
Ag	< LOD	:	0.171
Al	< LOD	:	80.000
Mo	0.041	±	0.006
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.011
Pb	< LOD	:	0.015
Se	< LOD	:	0.007
W	< LOD	:	0.074
Zn	< LOD	:	0.028
Cu	< LOD	:	0.121
Ni	9.144	±	0.251
Co	< LOD	:	0.405
Fe	69.469	±	0.373
Mn	1.768	±	0.171
Cr	19.100	±	0.219
V	< LOD	:	0.106
Ti	< LOD	:	0.122

---

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	136
Mode	ALLOY
Time	2024-10-07 10:39
Duration	9.45
Sequence	Final
Alloy1	304SS : 0.28
Alloy2	No Match : *2.12
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.040
Sn	< LOD	:	0.056
Pd	< LOD	:	0.041
Ag	< LOD	:	0.187
Al	< LOD	:	80.000
Mo	0.044	±	0.008
Nb	< LOD	:	0.009
Zr	< LOD	:	0.003
Bi	< LOD	:	0.015
Pb	< LOD	:	0.021
Se	< LOD	:	0.008
W	< LOD	:	0.096
Zn	< LOD	:	0.047
Cu	< LOD	:	0.163
Ni	8.593	±	0.313
Co	< LOD	:	0.521
Fe	69.571	±	0.476
Mn	1.797	±	0.219
Cr	19.153	±	0.279
V	< LOD	:	0.138
Ti	< LOD	:	0.148

---

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	131
Mode	ALLOY
Time	2024-10-07 10:37
Duration	12.82
Sequence	Final
Alloy1	301SS : 1.84
Alloy2	304SS : 2.30
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.038
Sn	< LOD	:	0.045
Pd	< LOD	:	0.034
Ag	< LOD	:	0.159
Al	< LOD	:	80.000
Mo	0.017	±	0.005
Nb	< LOD	:	0.006
Zr	< LOD	:	0.003
Bi	< LOD	:	0.006
Pb	< LOD	:	0.015
Se	< LOD	:	0.007
W	< LOD	:	0.090
Zn	< LOD	:	0.037
Cu	< LOD	:	0.132
Ni	7.906	±	0.261
Co	0.527	±	0.223
Fe	71.812	±	0.405
Mn	1.446	±	0.179
Cr	17.904	±	0.232
V	< LOD	:	0.121
Ti	< LOD	:	0.133

---

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	132
Mode	ALLOY
Time	2024-10-07 10:38
Duration	10.53
Sequence	Final
Alloy1	304SS : 0.64
Alloy2	No Match : *2.21
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.035
Sn	< LOD	:	0.050
Pd	< LOD	:	0.038
Ag	< LOD	:	0.156
Al	< LOD	:	80.000
Mo	0.038	±	0.007
Nb	< LOD	:	0.007
Zr	< LOD	:	0.004
Bi	< LOD	:	0.002
Pb	< LOD	:	0.011
Se	< LOD	:	0.007
W	< LOD	:	0.095
Zn	< LOD	:	0.035
Cu	0.168	±	0.078
Ni	8.025	±	0.287
Co	< LOD	:	0.489
Fe	71.062	±	0.444
Mn	1.414	±	0.197
Cr	18.485	±	0.258
V	< LOD	:	0.134
Ti	< LOD	:	0.149

---

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	130
Mode	ALLOY
Time	2024-10-07 10:37
Duration	10.02
Sequence	Final
Alloy1	304SS : 1.68
Alloy2	No Match : *1.98
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.041
Sn	< LOD	:	0.049
Pd	< LOD	:	0.038
Ag	< LOD	:	0.131
Al	< LOD	:	80.000
Mo	0.074	±	0.010
Nb	0.009	±	0.004
Zr	< LOD	:	0.004
Bi	< LOD	:	0.018
Pb	< LOD	:	0.013
Se	< LOD	:	0.007
W	< LOD	:	0.076
Zn	< LOD	:	0.034
Cu	0.165	±	0.080
Ni	8.107	±	0.293
Co	< LOD	:	0.496
Fe	71.789	±	0.451
Mn	1.336	±	0.198
Cr	17.851	±	0.257
V	< LOD	:	0.126
Ti	< LOD	:	0.153

---

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	133
Mode	ALLOY
Time	2024-10-07 10:38
Duration	9.82
Sequence	Final
Alloy1	301SS : 0.82
Alloy2	No Match : 2.26
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

---

	%	±	Error
Sb	< LOD	:	0.044
Sn	< LOD	:	0.054
Pd	< LOD	:	0.040
Ag	< LOD	:	0.148
Al	< LOD	:	80.000
Mo	0.308	±	0.018
Nb	0.016	±	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.017
Pb	< LOD	:	0.019
Se	< LOD	:	0.008
W	< LOD	:	0.096
Zn	< LOD	:	0.042
Cu	0.491	±	0.096
Ni	7.775	±	0.291
Co	< LOD	:	0.496
Fe	71.047	±	0.452
Mn	1.886	±	0.210
Cr	17.893	±	0.261
V	0.141	±	0.070
Ti	< LOD	:	0.150

---

Sergio Morales

Date: 15-10-24



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

Contract : P2308  
Client : NERVION  
Project : ALBA

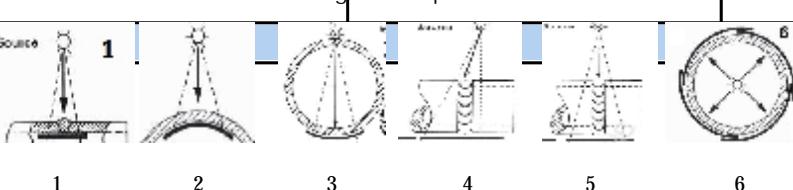
Spool N°: P2308S-00497  
Isometric N°: 2121-IA91F63-7  
Piece Mark: 2121-IA91F63-7-SP16-00497

## Procedure/ Instruction:

## Acceptance Criteria:

## Testing Date:

## Material:

4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		04-10-2024		Stainless Steel 304, 316, 317																															
Equipment		Normal Fluid Film		IQI																															
Type: G-RAY		Brand: FUJI		Type: ASTM-1A																															
Source Equip: Ir192		Type: IX50		Position: Film Side																															
Source Dim: 2x1.4		Class: C3		Sensitivity: 4																															
Activity (Ci): 22.3		Lead Sheets: 0,5		Ø of visible wire/hole 0,0063(0,16)																															
Films/Casette:Single		Testing Technique		Indication Codes (ISO 6520)																															
				<table border="1"> <tr> <td>BB-Back Bevel</td> <td>EP-Excess Penetration (504)</td> <td>SB-Suck Back</td> </tr> <tr> <td>FA-Film Artifact</td> <td>ST-Sugared Tack</td> <td></td> </tr> <tr> <td>BW-Back Weld</td> <td>GR-Grind Repair</td> <td>SU-Surface</td> </tr> <tr> <td>BT-Burn Through (510)</td> <td>HL-Hi-LO</td> <td>T-Tungsten</td> </tr> <tr> <td>C-Cap</td> <td>LC-Lack of Cleanup</td> <td>UC-Undercut (5011)</td> </tr> <tr> <td>CP-Clustered Porosity (2012)</td> <td>LF-Lack of Fusion (401)</td> <td>UP-Uniformity Porosity (2013)</td> </tr> <tr> <td>CL-Cold Lap</td> <td>LP-Lack of Penetration (402)</td> <td>V-Valley in Cap</td> </tr> <tr> <td>CR-Crack</td> <td>P-Porosity (2011)</td> <td>W-Wire</td> </tr> <tr> <td>CC-Crater Crack (104)</td> <td>R-Root</td> <td>WH-Worm Hole (2016)</td> </tr> <tr> <td>DI-Dimensional</td> <td>S-Slag (301)</td> <td>XN-Xray Film Non-Conform</td> </tr> </table>		BB-Back Bevel	EP-Excess Penetration (504)	SB-Suck Back	FA-Film Artifact	ST-Sugared Tack		BW-Back Weld	GR-Grind Repair	SU-Surface	BT-Burn Through (510)	HL-Hi-LO	T-Tungsten	C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)	CP-Clustered Porosity (2012)	LF-Lack of Fusion (401)	UP-Uniformity Porosity (2013)	CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap	CR-Crack	P-Porosity (2011)	W-Wire	CC-Crater Crack (104)	R-Root	WH-Worm Hole (2016)	DI-Dimensional	S-Slag (301)	XN-Xray Film Non-Conform
BB-Back Bevel	EP-Excess Penetration (504)	SB-Suck Back																																	
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C-Cap	LC-Lack of Cleanup	UC-Undercut (5011)																																	
CP-Clustered Porosity (2012)	LF-Lack of Fusion (401)	UP-Uniformity Porosity (2013)																																	
CL-Cold Lap	LP-Lack of Penetration (402)	V-Valley in Cap																																	
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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
0079	2.0000 S10S BW (MW.26_BW)	AY	A	500	440	NA	4	475	3.1	W4	-	RX437
0079	2.0000 S10S BW (MW.26_BW)	AY	B	500	440	NA	4	475	3.4	W4	-	RX437

Contract : P2308  
Client : NERVION  
Project : ALBA

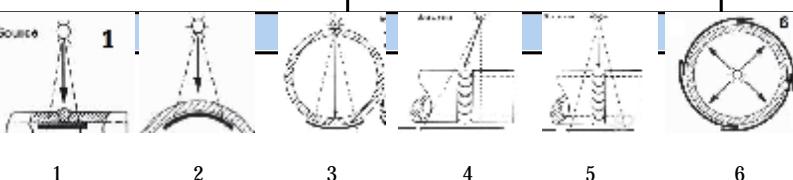
Spool N°: P2308S-00497  
Isometric N°: 2121-IA91F63-7  
Piece Mark: 2121-IA91F63-7-SP16-00497

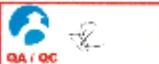
## Procedure/ Instruction:

## Acceptance Criteria:

## Testing Date:

## Material:

4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		04-10-2024		Stainless Steel 304, 316, 317	
Equipment		Normal Fluid Film		IQI	
Type: G-RAY		Brand: FUJI		Type: ASTM-1A	
Source Equip: Ir192		Type: IX50		Position: Film Side	
Source Dim: 2x1.4		Class: C3		Sensitivity: 4	
Activity (Ci): 22.3		Lead Sheets: 0,5		Ø of visible wire/hole 0,0063(0,16)	
Films/Casette:Single		Testing Technique		Indication Codes (ISO 6520)	
		BB-Back Bevel BW-Back Weld BT-Burn Through (510) C-Cap CP-Clusterd Porosity (2012) CL-Cold Lap CR-Crack CC-Crater Crack (104) DI-Dimensional		EP-Excess Penetration (504) FA-Film Artifact SB-Suck Back ST-Sugared Tack 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)	
General Remarks		Notations / Symbology		x Acceptable after Repair      SFD = Source Film Distance      SOD = Source Object Distance	
The results refer to the controlled items	- Good	/ Acceptable	+ Repair	= Good after Repair	

Weld No.	Weld Desc. (WPS)	Welder	Position	SFD	SOD	Weld Reinf	Testing Technique	Exposure Density	IQI	Indication	Decision	Remarks Code
	Performed by:	Examined by:								QA/QC Inspection:	Customer Inspection:	
Name:	GONCALVES(QA), J. (N2 PT/RT)	FIGUEIRAS(QA), RUI (N2 PT/RT)								RAIMUNDO, MARIANA		
Date:	04-10-2024		04-10-2024				08-10-2024 14:40:22					
Signature:										Sergio Morales	Date: 15-10-24	

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