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

MOD-ITP-XL_220 Rev.1	**RELEASE OF SPOOLS FROM WORKSHOP**	Report n° **IP-WSR-P-310-000345_RFI4721_MOD-ITP-XL_220**	
		RFI Nr.:	Date :
Unit	-		
Plant Area	-		
Isometric Number			
Inspection Package Number	**IP-WSR-P-310-000345_RFI4721 - IP Spool Release From Workshop**		

The Present Inspection Package contains the following Elements:

7111-IA91F63-1-SP02-00050;7111-IA91F63-1-SP01-00049;1126-LO32005-1-SP01-00837;1126-LO32004-1-SP01-00835;2121-LO40B03-2-SP05-01000;1126-LO32005-1-SP04-00840;1126-LO32005-1-SP02-00838;1126-LO32004-1-SP02-00836;2121-LO40B03-2-SP04-00999;2211-LO70A08-1-SP03-00381;2211-LO70A08-1-SP02-00380;1127-PN52021-1-SP03-01039;1126-LO32005-1-SP03-00839;2211-LO70A08-1-SP01-00379

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 Tecnimont / R
Piping Supervisor
Cristi Sandu
17.09.2024

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

	Date [DD-MMM-YYYY]	Name	Signature
SUBCONTRACTOR	17-09-2024	Sergio Morales Collantes	
CONTRACTOR			
COMPANY			
(Free)			

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

MOD-ITP-XL_220 Rev.1	**RELEASE OF SPOOLS FROM WORKSHOP**	Report n° **IP-WSR-P-310-000345_RFI4721_MOD-ITP-XL_220**	
		RFI Nr.:	Date :
Unit	-		
Plant Area	-		
Isometric Number			
Inspection Package Number	**IP-WSR-P-310-000345_RFI4721 - IP Spool Release From Workshop**		

The Present Inspection Package contains the following Elements:

7111-IA91F63-1-SP02-00050;7111-IA91F63-1-SP01-00049;1126-LO32005-1-SP01-00837;1126-LO32004-1-SP01-00835;2121-LO40B03-2-SP05-01000;1126-LO32005-1-SP04-00840;1126-LO32005-1-SP02-00838;1126-LO32004-1-SP02-00836;2121-LO40B03-2-SP04-00999;2211-LO70A08-1-SP03-00381;2211-LO70A08-1-SP02-00380;1127-PN52021-1-SP03-01039;1126-LO32005-1-SP03-00839;2211-LO70A08-1-SP01-00379

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
17.09.2024 C. Sandu

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

	Date [DD-MMM-YYYY]	Name	Signature
SUBCONTRACTOR	17-09-2024	Sergio Morales Collantes	
CONTRACTOR			
COMPANY			
(Free)			

Tecnimont	Punch List **PUNCH LIST**	IDENTIFICATION CODE SHEET 1 / 1 | DOC.CLASS 1 | ISSUE 01
MECWIDE	**ISO ID:** 2121-LO40B03-2	

No.	Field	Descripton	Date	Completed
		NO COMMENTS		

NOTES AND REMARKS

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
14.09.2024 C. Sandu

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

0

REV	DATE	REVISION DESCRIPTION	DRAWN UP	CHKD UP	APP'D
01	19-01-2024	ISSUED FOR CONSTRUCTION	TG	MW	TM
00	25-09-2023	ISSUED FOR CONSTRUCTION	TG	MW	TM

REPSOL

LINE DATA

FLUID CODE: LO — LINE NO. 2"-LO-40B03-QXB-55 (P)

PIPING MATERIAL CLASS	INSULATION	WELD CLASS	HEAT TREATMENT	PAINTING CODE	P&ID No.
QXB-55	P / 50	M	N	NR	19-A-19-000-1-01-00001 sheet 29B

Tecnimont — PIPING ISOMETRIC

IDENTIFICATION CODE			
Job	E C T	Area	N
4274	XHDL	2121	LO40B03
UNIT	19	SHEET 2	REV 01

PLANT: SINES INDUSTRIAL COMPLEX — CLIENT REF: REPSOL POLYMEROS

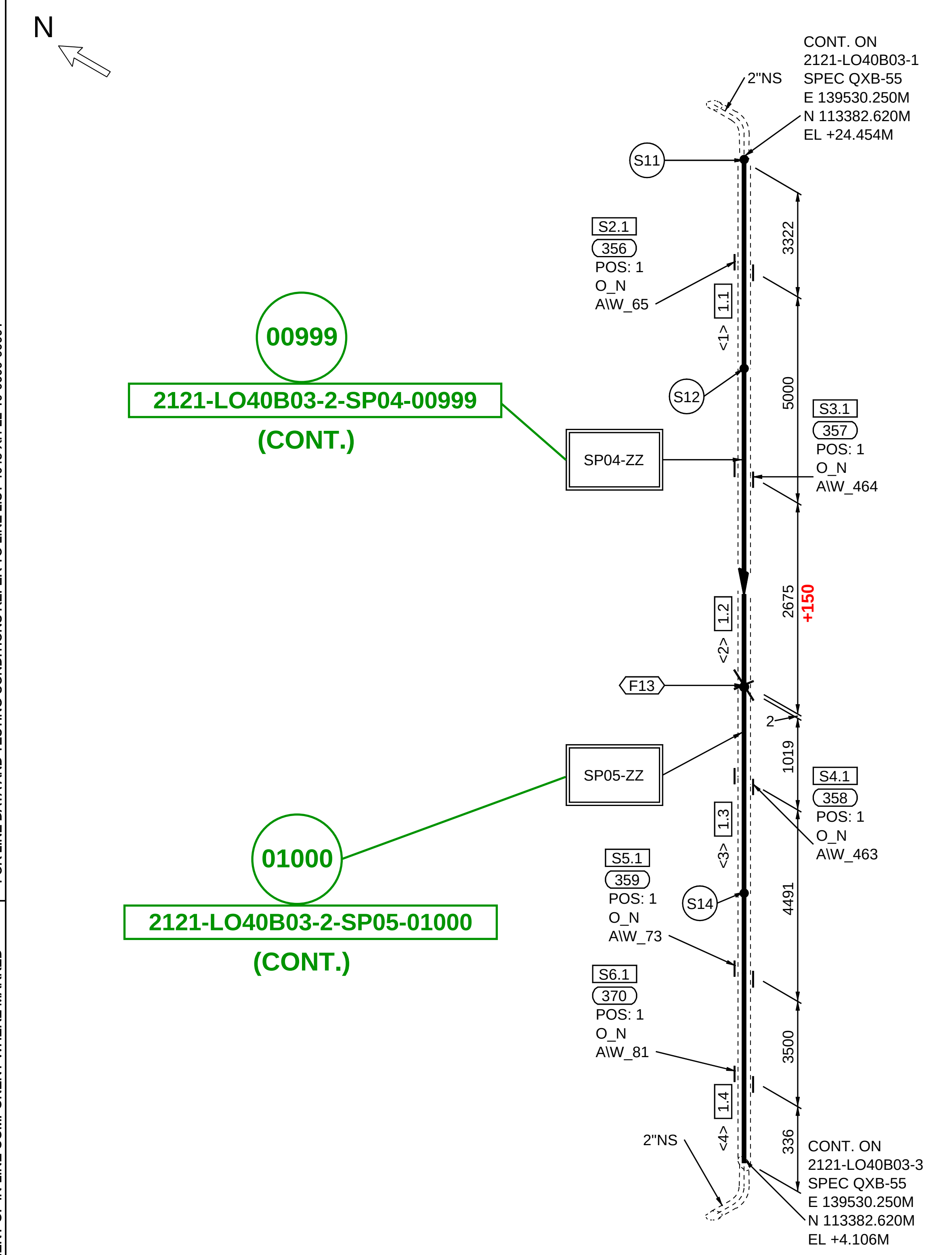
REFERENCES

PIPING ASSEMBLY DRAWING	19-L-19-000-2-00-86196 sheet 4	PIPING SUPPORT SPECIFICATION	XH-SG-00000002	PIPING STANDARD SUPPORT SUMMARY	XH-LP-00000001
PIPING ISOMETRIC LIST	XH-LD-21210001	PIPING TYPICAL INSTALLATIONS	XH-SL-00000002	WELDING SPECIFICATION	XH-SW-00000001

LINES 1.1/2" AND SMALLER SHALL BE SUPPORTED IN FIELD IF NOT OTHERWISE INDICATED — ALL DIMENSION AND PROPER CONFIGURATION FOR LINES NPS 1.1/2" AND SMALLER SHALL BE CHECKED IN FIELD BEFORE CONSTRUCTION

FOR THE COMPONENT MARKED AS FIELD WELDED ONE WELDED FOR ADJUSTMENT OF INLINE COMPONENT MUST BE LEFT — GUSSETING TO BE IMPLEMENTED BY MECHANICAL SUBCONTRACTOR AS PER SPECIFICATION 4048-XH-SG-00000000004

FIELD WELD SYMBOL FOR ADJUSTMENT OF IN-LINE COMPONENT WHERE MARKED — FOR LINE DATA AND TESTING CONDITIONS REFER TO LINE LIST 4048-XH-LL-10-0000-00001



Sergio Morales

Date: 12-09-24

RECEIVED

19 / 04 / 2024

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

MECWIDE ENGINEERING CHALLENGES — TG — PCL 22635 — IFC — 19-01-2024 — 01

AUTHORISED FOR CONSTRUCTION

SIGNED FOR CONSTRUCTION IS SHOWN ON ISO LIST FOR RELEVANT PIPING AREA

LEGENDS

JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT
BW	G	SW	S	LET	LET	SOB	B
FW	S	SIB	B	LF	RF	SOF	S
L4	RF	SLW	S	MTW	M	THD	TH

BILL OF MATERIALS

FABRICATION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	PIPE				
1	PIPE - A312-TP304/304L DUAL GR BE SMLS T01AL2CV02 S-10S <PIPB04DB2210S> (L-PIP113).	2	I3364302	20.4 M	

ERECTION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	SUPPORTS				
2	U BOLT (FOR GUIDE)-P02D	2	356	1	
3	U BOLT (FOR GUIDE)-P02D	2	357	1	
4	U BOLT (FOR GUIDE)-P02D	2	358	1	
5	U BOLT (FOR GUIDE)-P02D	2	359	1	
6	U BOLT (FOR GUIDE)-P02D	2	370	1	

CUT LIST

PIECE NO	LENGTH (MM)	SIZE (IN)
~~<1>~~	~~5497~~	~~2"~~
~~<2>~~	~~5498~~	~~2"~~
~~<3>~~	~~5498~~	~~2"~~
~~<4>~~	~~3847~~	~~2"~~
<1>	6153	2"
<2>	4990	2"
<3>	6212	2"
<4>	3130	2"

WELD LIST

WELD NO	WELD CAT.	SIZE (IN)	WELD TYPE
S11	S	2"	BW
S12	S	2"	BW
F13	F	2"	BW
S14	S	2"	BW

BOLT LIST

BOLT NO	FLANGE SIZE(IN)	SIZE (IN)	LENGTH (MM)

INCH METER

PIPE NS (IN)	CL LENGTH (M)
2	20.3

Notes. 1 DENOTES PARTS LIST NO

PIPE SUPPORT: A = RESTING SUPPORT G = GUIDE F = AXIAL RESTRAINT B = GUIDE + STOP M = SPRING
WHERE A WITHOUT NUMBERING IS INDICATED THIS MEANS THAT THERE IS A REST DIRECTLY ON STEEL STRUCTURE

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

ISOMETRIC NO. 4274-SP-XH-DL-2121-LO40B03-2-IS01 — SPOOLING REV NO. 01

REV	DATE	REVISION DESCRIPTION	DRAWN UP	CHKD UP	APP'D
01	19-01-2024	ISSUED FOR CONSTRUCTION	TG	MW	TM
00	25-09-2023	ISSUED FOR CONSTRUCTION	TG	MW	TM

LINE DATA

FLUID CODE: LO | LINE NO. 2"-LO-40B03-QXB-55 (P)

PIPING MATERIAL CLASS	INSULATION	WELD CLASS	HEAT TREATMENT	PAINTING CODE	P&ID No.
QXB-55	P / 50	M	N	NR	19-A-19-000-1-01-00001 sheet 29B

Tecnimont

PIPING ISOMETRIC

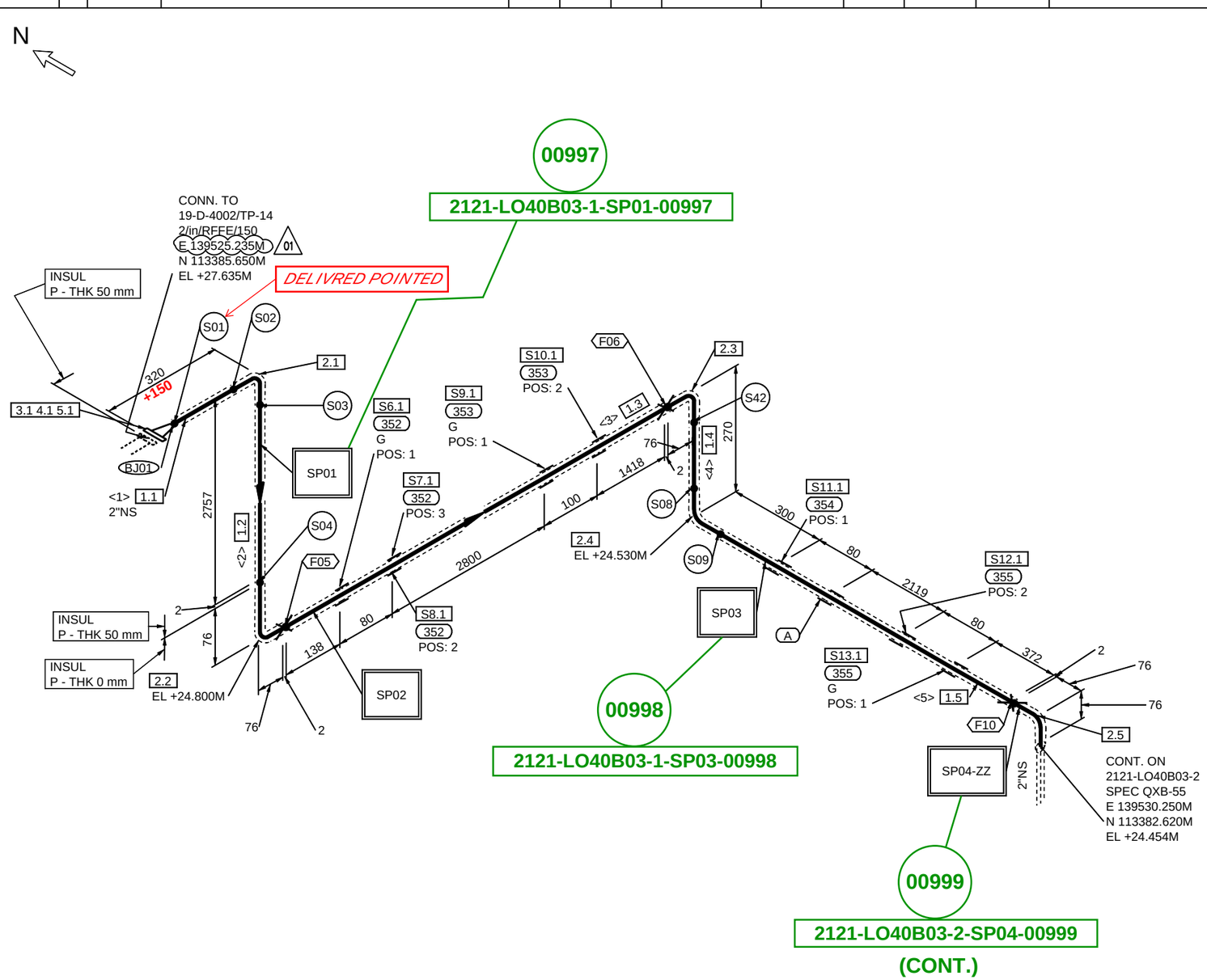
IDENTIFICATION CODE

Job	E I C I T	Area	N
4274	XHDL	2121	LO40B03

PLANT: SINES INDUSTRIAL COMPLEX | CLIENT REF: REPSOL POLYMEROS | UNIT 19 | SHEET 1 | REV 01

REFERENCES

PIPING ASSEMBLY DRAWING	19-L-19-000-2-00-86196 sheet 7	PIPING SUPPORT SPECIFICATION	XH-SG-00000002	PIPING STANDARD SUPPORT SUMMARY	XH-LP-00000001
PIPING ISOMETRIC LIST	XH-LD-21210001	PIPING TYPICAL INSTALLATIONS	XH-SL-00000002	WELDING SPECIFICATION	XH-SW-00000001



BILL OF MATERIALS

FABRICATION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	PIPE				
1	PIPE - A312-TP304/304L DUAL GR BE SMLS T01AL2CV02 S-10S <PIPB04DB2210S> (L-PIP113).	2	I3364302	10.4 M	
	FITTINGS				
2	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS C01DL2FV01 S-10S <90LB23DF3210S> (L-8052).	2	I2259133	5	
	FLANGES				
3	WN FLANGE ASME B16.5 150# A182-F304/304L DUAL GR RF BE 125 - 250 AARH F01CDL2ABV05 S-10S <WNFB450R15210S> (L-WNF55).	2	I2260686	1	

ERECTION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	GASKETS				
4	SPIRAL WOUND GASKET ASME B16.20 150# RFTBE 316/GRAP SS 316 SS 316 ASME B16.5 G03GDP1IA10 <N/A> (N/A)	2	I1176455	1	
	BOLTS				
5	STUD BOLTS&NUTS ASME B18.31.2/ B18.2.2 A320-B8 CL2/A194-8 INCH SIZE I01OB0901 <SB2R54G5/831/2> - 2 NUTS PER BOLT - 85 mm Length	5/8	I63615909	4	
	SUPPORTS				
6	SUPPORT HOR.NOT INS.PIP.N4G1	2	352	1	
7	PIPING SUPPORT - BEAMS- BE03 HEA100	2	352	1	
8	VERTICAL STAKES WELDED TO STR. ST42 L80X80X10	2	352	1	
9	SUPPORT HOR.NOT INS.PIP.N4G1	2	353	1	
10	VERTICAL STAKES WELDED TO STR. ST42 L100X100X10	2	353	1	
11	VERTICAL STAKES WELDED TO STR. ST42 L80X80X10	2	354	1	
12	VERTICAL STAKES WELDED TO STR. ST42 L80X80X10	2	355	1	
13	SUPPORT HOR.NOT INS.PIP.N4G1	2	355	1	

CUT LIST

PIECE NO	LENGTH (MM)	SIZE (IN)
<1>	176	2"
<2>	2679	2"
<3>	4536	2"
<4>	114	2"
<5>	2874	2"

WELD LIST

WELD NO	WELD CAT.	SIZE (IN)	WELD TYPE
S01	S	2"	BW
S02	S	2"	BW
S03	S	2"	BW
S04	S	2"	BW
F05	F	2"	BW
F06	F	2"	BW
S42	S	2"	BW
S08	S	2"	BW
S09	S	2"	BW
F10	F	2"	BW

BOLT LIST

BOLT NO	FLANGE SIZE(IN)	SIZE (IN)	LENGTH (MM)
BJ01	2"	5/8"	85

INCH METER

PIPE NS (IN)	CL LENGTH (M)
2	11.5

ISOMETRIC NO. 4274-SP-XH-DL-2121-LO40B03-1-IS01 | SPOOLING REV NO. 01

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

RECEIVED
19 / 04 / 2024

MECWIDE ENGINEERING CHALLENGES		TG		PCL 22635
		IFC	19-01-2024	01

AUTHORISED FOR CONSTRUCTION

SIGNED FOR CONSTRUCTION IS SHOWN ON ISO LIST FOR RELEVANT PIPING AREA

LEGENDS

JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT
BW	G	SW	S	LET	LET	SOB	B
FW	S	SIB	B	LF	RF	SOF	S
L4	RF	SLW	S	MTW	M	THD	TH

Notes.

1 DENOTES PARTS LIST NO

PIPE SUPPORT: A = RESTING SUPPORT G = GUIDE F = AXIAL RESTRAINT B = GUIDE + STOP M = SPRING

WHERE A WITHOUT NUMBERING IS INDICATED THIS MEANS THAT THERE IS A REST DIRECTLY ON STEEL STRUCTURE

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

LINES 1.1/2" AND SMALLER SHALL BE SUPPORTED IN FIELD IF NOT OTHERWISE INDICATED
FOR THE COMPONENT MARKED AS FIELD WELDED,ONE WELDED FOR ADJUSTMENT OF INLINE COMPONENT MUST BE LEFT
FIELD WELD SYMBOL FOR ADJUSTMENT OF IN-LINE COMPONENT WHERE MARKED

ALL DIMENSION AND PROPER CONFIGURATION FOR LINES NPS 1.1/2" AND SMALLER SHALL BE CHECKED IN FIELD BEFORE CONSTRUCTION
GUSSETING TO BE IMPLEMENTED BY MECHANICAL SUBCONTRACTOR AS PER SPECIFICATION 4048-XH-SG-00000000004
FOR LINE DATA AND TESTING CONDITIONS REFER TO LINE LIST 4048-XH-LL-10-0000-00001

REV	DATE	REVISION DESCRIPTION	DRAWN UP	CHKD UP	APP'D
01	19-01-2024	ISSUED FOR CONSTRUCTION	TG	MW	TM
00	25-09-2023	ISSUED FOR CONSTRUCTION	TG	MW	TM

LINE DATA

FLUID CODE: LO — LINE NO. 2"-LO-40B03-QXB-55 (P)

PIPING MATERIAL CLASS	INSULATION	WELD CLASS	HEAT TREATMENT	PAINTING CODE	P&ID No.
QXB-55	P / 50	M	N	NR	19-A-19-000-1-01-00001 sheet 29B

Tecnimont

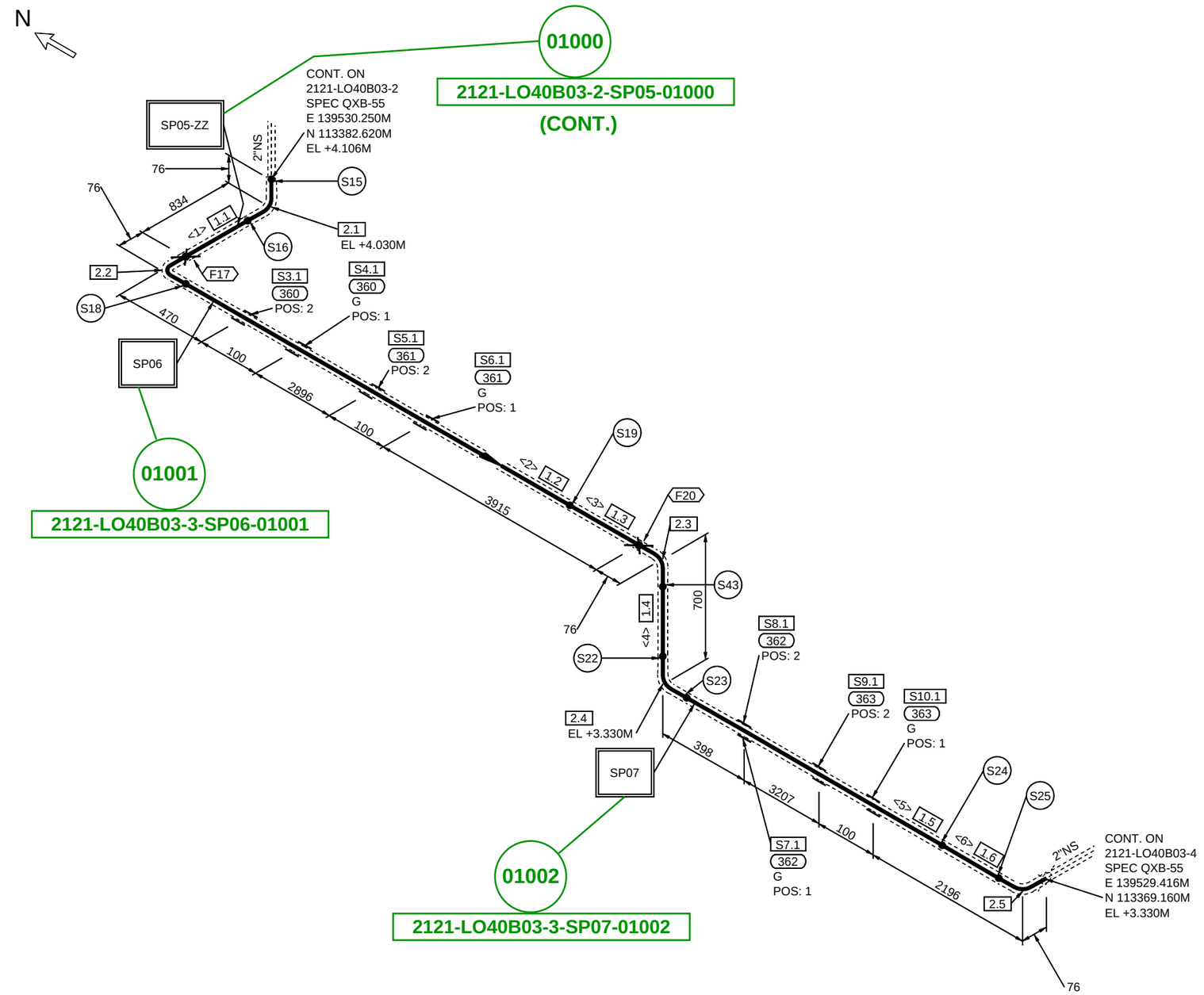
PIPING ISOMETRIC

IDENTIFICATION CODE						
Job	E C T	Area	N			
4274	XHDL	2121	LO40B03			
UNIT	19	SHEET	3	REV	01	

PLANT: SINES INDUSTRIAL COMPLEX — CLIENT REF: REPSOL POLYMEROS

REFERENCES

	E C T N		E C T N		E C T N
PIPING ASSEMBLY DRAWING	19-L-19-000-2-00-86196 sheet 2	PIPING SUPPORT SPECIFICATION	XH-SG-00000002	PIPING STANDARD SUPPORT SUMMARY	XH-LP-00000001
PIPING ISOMETRIC LIST	XH-LD-21210001	PIPING TYPICAL INSTALLATIONS	XH-SL-00000002	WELDING SPECIFICATION	XH-SW-00000001



BILL OF MATERIALS

FABRICATION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	PIPE				
1	PIPE - A312-TP304/304L DUAL GR BE SMLS T01AL2CV02 S-10S <PIPB04DB2210S> (L-PIP113).	2	I3364302	14.5 M	
	FITTINGS				
2	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS C01DL2FV01 S-10S <90LB23DF3210S> (L-8052).	2	I2259133	5	

ERECTION MATERIALS

PS NO	DESCRIPTION	NS (MM)	ITEM CODE	QTY.	HOLD
	SUPPORTS				
3	VERTICAL STAKES WELDED TO STR. ST42 L100X100X10	2	360	1	
4	SUPPORT HOR.NOT INS.PIP.N4G1	2	360	1	
5	VERTICAL STAKES WELDED TO STR. ST42 L100X100X10	2	361	1	
6	SUPPORT HOR.NOT INS.PIP.N4G1	2	361	1	
7	SUPPORT HOR.NOT INS.PIP.N4G1	2	362	1	
8	WELDED BRACKET TO STRUCT. SB01 L100X100X10	2	362	1	
9	VERTICAL STAKES WELDED TO STR. ST42 L100X100X10	2	363	1	
10	SUPPORT HOR.NOT INS.PIP.N4G1	2	363	1	

CUT LIST

PIECE NO	LENGTH (MM)	SIZE (IN)
<1>	758	2"
~~<2>~~	~~5500~~	~~2"~~
~~<3>~~	~~1906~~	~~2"~~
<4>	548	2"
<5>	5500	2"
<6>	250	2"
<2>	6099	2"
<3>	1302	2"

WELD LIST

WELD NO	WELD CAT.	SIZE (IN)	WELD TYPE
S15	S	2"	BW
S16	S	2"	BW
F17	F	2"	BW
S18	S	2"	BW
S19	S	2"	BW
F20	F	2"	BW
S43	S	2"	BW
S22	S	2"	BW
S23	S	2"	BW
S24	S	2"	BW
S25	S	2"	BW

BOLT LIST

BOLT NO	FLANGE SIZE(IN)	SIZE (IN)	LENGTH (MM)

INCH METER

PIPE NS (IN)	CL LENGTH (M)
2	15.4

ISOMETRIC NO. 4274-SP-XH-DL-2121-LO40B03-3-IS01 — SPOOLING REV NO. 01

Sergio Morales

Date: 12-09-24

RECEIVED
19 / 04 / 2024

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

MECWIDE ENGINEERING CHALLENGES		TG		PCL 22635
		IFC	19-01-2024	01

AUTHORISED FOR CONSTRUCTION

SIGNED FOR CONSTRUCTION IS SHOWN ON ISO LIST FOR RELEVANT PIPING AREA

LEGENDS

JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT	JOINT TYPE	HMEL TYPE OF JOINT
BW	G	SW	S	LET	LET	SOB	B
FW	S	SIB	B	LF	RF	SOF	S
L4	RF	SLW	S	MTW	M	THD	TH

Notes.

1 DENOTES PARTS LIST NO

PIPE SUPPORT — A = RESTING SUPPORT G = GUIDE F = AXIAL RESTRAINT B = GUIDE + STOP M = SPRING

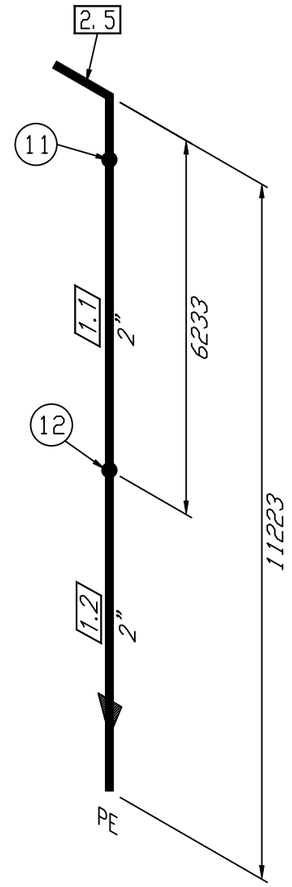
WHERE A WITHOUT NUMBERING IS INDICATED THIS MEANS THAT THERE IS A REST DIRECTLY ON STEEL STRUCTURE

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

LINES 1.1/2" AND SMALLER SHALL BE SUPPORTED IN FIELD IF NOT OTHERWISE INDICATED
FOR THE COMPONENT MARKED AS FIELD WELDED,ONE WELDED FOR ADJUSTMENT OF INLINE COMPONENT MUST BE LEFT
X FIELD WELD SYMBOL FOR ADJUSTMENT OF IN-LINE COMPONENT WHERE MARKED

ALL DIMENSION AND PROPER CONFIGURATION FOR LINES NPS 1.1/2" AND SMALLER SHALL BE CHECKED IN FIELD BEFORE CONSTRUCTION
GUSSETING TO BE IMPLEMENTED BY MECHANICAL SUBCONTRACTOR AS PER SPECIFICATION 4048-XH-SG-00000000004
FOR LINE DATA AND TESTING CONDITIONS REFER TO LINE LIST 4048-XH-LL-10-0000-00001

N



BILL OF MATERIAL

PIPE

ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE
1.1	6,153	2"	S-10S	PIPE - A312-TP304/304L DUAL GR BE SMLS, BExBE	I3364302
1.2	4,990	2"	S-10S	PIPE - A312-TP304/304L DUAL GR BE SMLS, BExPE	I3364302

WELD FITTINGS

ITEM	QT	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE
2.5	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133

Sergio Morales

Date: 12-09-24

Rev.	Date	DRW	Check 1	Check 2		
					Marking Color:	GREEN
					Weld Class:	QXB-55-M
01	25/04/2024	AOM	LRG	PCO	Paint System:	NR

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Weld Map Sticker

P2308S 00999

2121-LO40B03-2-SP04-00999

Boccard Alliance for success
Boccard Portugal, Lda.

Construction Code:	ASME B31.3	% RT -	YES	% UT -	NO	Hydro:	NO	ID Cleaning:	YES	
Acc Criteria:	ASME B31.3	% PT -	YES	% FE -	NO	PWHT:	NO	OD Cleaning:	YES	
Metal Tag:	YES	% MT -	NO	% PMI -	YES	BHN% -	NO	Tolerances:	ASME B31.3	

Piece Mark	Ref. Drawing	Job #	Spool #	Project
2121-LO40B03-2-SP04-00999	2121-LO40B03-2	P2308S	00999	REPSOL PROJETO ALBA NERVION

F324-302-0

Spool Material List

Contract : P2308 **Client** NERVION

Job : P2308S **Project** ALBA

Job	Spool	Piece Mark	Drawing	Rev
P2308S	00999	2121-LO40B03-2-SP04-00999	2121-LO40B03-2	01

Item No / Tag No / ID No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No / MTR No / Folder No	Unit Weight Kgs	Weight Kgs
1.1 40391	6,153	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	24,18
1.2 40391	4,99	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	19,61
2.5 42965	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Number of Items : **3** Total Weight : **44,28**

	QA	Client
Signature	QA / QC	Sergio Morales Date: 12-09-24
Date	2024-09-06 09:25:18	

CTA Group	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

Inv. No. 356

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

SURAJ LIMITED

(AN ISO 9001 : 2015 COMPANY)
(AN ISO 14001 : 2015 COMPANY)
(AN ISO 45001 : 2018 COMPANY)
(AN PED 2014/68/EU APPROVED COMPANY)

F / QA / 24 REV. NO. 10

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

INSPECTION CERTIFICATE

In Accordance with EN 10204/3.1

Customer: Commerciale Tubi Acciaio S.P.A. **T.C No** : 680 **Date:** 26.03.2022

Product : Austenitic S.S Seamless Cold Finish,Solution Annealed,Pickled & Passivated Pipes. **P.O.No** : OS-0000175 **Date:** 14.10.2021

W.O.No : 2122/OEP400035 **Date:** 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 Rp0.2% Mpa	Yield strength Rp 1 % Mpa	Elongation % GL 5.65√A					
MAX	690	--	--	--			Max-90 HRB	100 Joule Min.(AVG)	ASTM A-262 Practice"E" & ISO 3651-2 Method "A"
MIN	515	205	230	40					
S-23594	624.31	316.22	322.57	55.21	25.40	Satisfactory	76-78	N/A	Satisfactory
	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 requirment 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.**

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

SURAJ LTD. THOL

Prepared by

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

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

Customer: TECNIMONT S.p.A.

Description: CURVE 90° LR 2" SCH.10/S SEAMLESS 1259133

Heat num. or Pcs. marking: M220696 - Qty.71,00

Order: 7500118979 - 26.01.24 - Item n.: 61 - Project: 4274 - PP+PE Shnes (Portugal) EPC - Our ref.: OCVEIT20240000474

Protocol: CTCERC20240000104 * CERTIFIED TRUE COPY * Issued 03-04-2024

CTCERT20230000328 6.1.0001

INSPECTION CERTIFICATE

Page (頁) : 3

Cert. to RACCORTUBI S.P.A

S.P. UNITED INDUSTRY SDN. BHD.
(COMPANY NO. 368524 W)
P.T. 741/745, KAWASAN PERUSAHAAN NILAI,
71800 NILAI, NEGERI SEMBILAN DARUL KHUSUS, MALAYSIA.
TEL: 606-7993577, 7993676, 7993677 FAX: 606-7994366
E-mail: contactus@spunited.com.my

LRQA CERTIFIED ISO 9001
Approval No:ISO9001-0065006
PED Cert No:0343/PED/MUM/101003/3

Order No.: 22TEC003 (注文番号)

Date (日付) : JUNE 22, 2023

P.O. No. : 00000150 S

Certificate No. : 23-06-1169 (書類番号)

Product (形状)	Product Specification (規格)	Specification for Pipe (Raw Material) (材料規格)
STAINLESS STEEL 90 DEG LONG RADIUS ELBOW (SEAMLESS)	ASTM A403-2022 / ASME SA403-2019 / ASME B16.9-2018 MSS SP-43-2019 / ASME BPVC II PART A-2019 WP-S 304/304L	ASTM A312 TP 304/304L

*	Size (寸法)	Dimension in mm (寸法) Outside Dia (外径)	Dimension in mm (寸法) Thickness (厚さ)	Heat No. (溶解番号)	Quantity (数量)	Surface Inspection (外観検査)	Dimension Inspection (寸法検査)	S. P. I. Code No.	Manufacturing Method
1	2"x10S	60.33	2.77	M220696	500	GOOD	GOOD	24812000	COLD FORMED

YS=Yield Strength (0.2%), EL=Elongation, H=Hardness Test
TS= Tensile Strength, GL=Gauge Length, HT=Hydrostatic Test

Chemical Composition of Pipe (Raw Material) % (化学成分) (材料)

*	Raw Pipe Heat No.	C x 100	Si x 100	Mn x 100	P x 1000	S x 1000	Ni x 100	Cr x 100	Mo x 100	
1	L220330	2.3	35.8	138	38	1	804	1817		
Specification		MAX 3.0	MAX 100	MAX 200	MAX 45	MAX 30	800 1100	1800 2000		

Mechanical Properties of Pipe (Raw Material) (機械的性質)

Type of Specimen (試験片)	YS Mpa (耐力)	TS Mpa (引張強さ)	EL% (伸び) (GL:50mm)	EL% (伸び) Standard (規格値)	Flattening Test (へん平試験)	HT Mpa (水圧試験)	Hardness Test HRB	
	230	540	56		GOOD	GOOD	79	
	MIN 205	MIN 515	MIN 28					

Remarks * Hardness acc. to NACE MR0175 / ISO 15156-3: 2015, MR0103:2015
INTERGRANULAR CORROSION TEST (ASTM A262/E) - OK. PMI CHECK GOOD. ISO 9001 / EN 10204-3.1 PED 2014/68/EU ANNEX I SECTION 4.3
HEAT TREATMENT 1050 DEGREE CELCIUS QUENCHED IN WATER WITHIN 1 MINUTES TO BELOW 40°C.
MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH INDICATED SPECIFICATIONS AND WAS FOUND TO MEET THE REQUIREMENTS. NO WELD REPAIR WAS PERFORMED AND ALL ITEMS SUPPLIED ARE FREE OF WELD REPAIR.
MATERIAL IS FREE OF MERCURY CONTAMINATION AND RADIOACTIVITY.

We herewith certify that the above products meet the requirements of the relevant standard and of the customer order.
(上記の製品は,当該規格及び,で注文の要求事項に適合するてとを証明します.)

Head of QA/QC Dept.
質量/品質管理課長

Welding and QC Report Per Spool

Contract : P2308 | Drawing : 2121-LO40B03-2 | Job : P2308S | Material : Stainless Steel 304, 316, 317

Client : NERVION | Revision : 01 | Spool : 00999 | Spec : QXB-55-M

Project : ALBA | Piece Mark : 2121-LO40B03-2-SP04-00999

Weld data					Welding						Control																					
Weld No.	Type	Dia	Sch /Thk	Weld Proc.	1st Pass	Pass 1	1st MTR	Final Pass	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	Ferite	Date Ferrite	PWHT	Date PWHT	BHN	Date BHN	Ultra	Date UT	Xray	Date Xray			
0011	BW	2	S10S	MW.26_BW	AY	22/07/2024	4712055	AY	22/07/2024	4712055			000807	20/08/2024					000784	22/08/2024									000294	02/09/2024			
0012	BW	2	S10S	MW.26_BW	AY	31/07/2024	4712055	AY	31/07/2024	4712055			000807	20/08/2024					000784	22/08/2024													

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Notes:

	Boccard Portugal QC	Client
Signature	QA / QC	Sergio Morales Date: 12-09-24
Date	06/09/2024 09:25:18	

Shop QC Inspection Report

P2308-000832

Client : NERVION
Job number: P2308S
Contract : P2308 / Project : ALBA
Spool Nº: 00999
Material: Stainless Steel 304, 316, 317
Piece Mark: 2121-LO40B03-2-SP04-00999

Procedure / Instruction reference: 20.2 IT 011 MF 324 - Rev: A
Control Date: 20/08/2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)
Date: 20/08/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 06/09/2024 09:25:18
Signature

Customer Inspection:
Sergio Morales
Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Visual Examination Report (Welds)

P2308-000807

Contract : P2308
Client : NERVION
Project : ALBA

Job number: P2308S
Spool Nº: 00999
Piece Mark: 2121-LO40B03-2-SP04-00999

Material: Stainless Steel 304, 316, 317
Procedure & Instructions: 4274-LZ-VD-FW31010370QAC04 - Rev: 1
Testing Date: 20/08/2024

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

Identification			Temp. (ºF/ºC)	Accepted	Rejected	Defect	Technique Used	Comments
Weld No.	Weld Desc.	Welder						
0011	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	25	X			Direct	
0012	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	25	X			Direct	

Sketch / Photo:

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

Test Performed by: MATOS, MARCO (N2 VT/PT)
Date: 20/08/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 06/09/2024 09:25:18
Signature

Customer Inspection:
Sergio Morales
Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Positive Material Identification Report (PMI)

P2308-000784

Client : NERVION
Contract : P2308 / Project : ALBA

Job number: P2308S
Spool Nº: 00999
Piece Mark: 2121-LO40B03-2-SP04-00999
Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC11 - Rev: 1
PMI Equipment : Niton XL3t800 Serial Nº 32735 (FP01)
Equipment Deviation : + - 5%
Testing Date: 22/08/2024

Remarks: The results refer to the controlled items

Weld / Item No	Description	Reading number Longitudinal	Chemical Elements %Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V	Accepted	Rejected	Comments
0011	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	167	0	0	0	8	69	1	19	0	0	0	X		
0012	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	166	0	0	0	9	68	1	19	0	0	0	X		
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	165	0	0	0	8	70	1	18	0	0	0	X		
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	164	0	0	0	8	71	1	17	0	0	0	X		
2.5	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	163	0	0	0	8	71	1	17	0	0	0	X		

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Test Performed by: GONCALVES(QA), J. (N2 PT/RT)
Date: 22/08/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 06/09/2024 09:25:18
Signature

Customer Inspection:
Date: Sergio Morales
Signature
Date: 12-09-24

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

Certificate of PMI Reading

XL3t-32735

Reading No	167
Mode	ALLOY
Time	2024-08-22 15:34
Duration	8.81
Sequence	Final
Alloy1	304SS : 0.16
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.043
Sn	< LOD	:	0.055
Pd	< LOD	:	0.042
Ag	< LOD	:	0.211
Al	< LOD	:	80.000
Mo	0.042	±	0.008
Nb	< LOD	:	0.008
Zr	< LOD	:	0.004
Bi	< LOD	:	0.016
Pb	< LOD	:	0.017
Se	< LOD	:	0.008
W	< LOD	:	0.084
Zn	< LOD	:	0.039
Cu	< LOD	:	0.160
Ni	8.827	±	0.320
Co	< LOD	:	0.525
Fe	69.468	±	0.484
Mn	1.817	±	0.221
Cr	19.014	±	0.282
V	0.153	±	0.076
Ti	< LOD	:	0.163

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	166
Mode	ALLOY
Time	2024-08-22 15:33
Duration	7.87
Sequence	Final
Alloy1	304SS : 0.15
Alloy2	No Match : *2.10
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.043
Sn	< LOD	:	0.055
Pd	< LOD	:	0.043
Ag	< LOD	:	0.167
Al	< LOD	:	80.000
Mo	0.061	±	0.010
Nb	< LOD	:	0.009
Zr	< LOD	:	0.004
Bi	< LOD	:	0.009
Pb	< LOD	:	0.020
Se	< LOD	:	0.007
W	< LOD	:	0.088
Zn	< LOD	:	0.028
Cu	< LOD	:	0.184
Ni	9.306	±	0.349
Co	< LOD	:	0.561
Fe	68.806	±	0.516
Mn	1.860	±	0.239
Cr	19.331	±	0.304
V	< LOD	:	0.161
Ti	< LOD	:	0.153

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	165
Mode	ALLOY
Time	2024-08-22 15:33
Duration	9.70
Sequence	Final
Alloy1	304SS : 0.95
Alloy2	No Match : *2.32
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.042
Sn	< LOD	:	0.053
Pd	< LOD	:	0.039
Ag	< LOD	:	0.189
Al	< LOD	:	80.000
Mo	0.202	±	0.015
Nb	< LOD	:	0.009
Zr	< LOD	:	0.006
Bi	< LOD	:	0.002
Pb	< LOD	:	0.011
Se	< LOD	:	0.011
W	< LOD	:	0.088
Zn	< LOD	:	0.039
Cu	0.191	±	0.083
Ni	8.201	±	0.301
Co	< LOD	:	0.509
Fe	70.997	±	0.462
Mn	1.400	±	0.205
Cr	18.070	±	0.266
V	0.176	±	0.075
Ti	< LOD	:	0.163

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	164
Mode	ALLOY
Time	2024-08-22 15:33
Duration	8.22
Sequence	Final
Alloy1	321SS : 1.10
Alloy2	No Match : 2.12
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.047
Sn	< LOD	:	0.050
Pd	< LOD	:	0.043
Ag	< LOD	:	0.118
Al	< LOD	:	80.000
Mo	0.035	±	0.008
Nb	< LOD	:	0.005
Zr	< LOD	:	0.004
Bi	< LOD	:	0.020
Pb	< LOD	:	0.010
Se	< LOD	:	0.007
W	< LOD	:	0.122
Zn	< LOD	:	0.042
Cu	0.208	±	0.092
Ni	8.250	±	0.329
Co	< LOD	:	0.549
Fe	71.536	±	0.505
Mn	1.312	±	0.220
Cr	17.901	±	0.288
V	< LOD	:	0.150
Ti	< LOD	:	0.196

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	163
Mode	ALLOY
Time	2024-08-22 15:32
Duration	10.80
Sequence	Final
Alloy1	321SS : 0.33
Alloy2	No Match : *1.92
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.037
Sn	< LOD	:	0.050
Pd	< LOD	:	0.034
Ag	< LOD	:	0.206
Al	< LOD	:	80.000
Mo	0.012	±	0.005
Nb	< LOD	:	0.007
Zr	< LOD	:	0.006
Bi	< LOD	:	0.011
Pb	< LOD	:	0.016
Se	< LOD	:	0.008
W	< LOD	:	0.104
Zn	< LOD	:	0.036
Cu	0.260	±	0.081
Ni	8.133	±	0.282
Co	< LOD	:	0.471
Fe	71.437	±	0.435
Mn	1.524	±	0.193
Cr	17.795	±	0.248
V	< LOD	:	0.126
Ti	0.198	±	0.089

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Radiographic Examination Report

P2308-000294

Contract : P2308
Client : NERVION
Project : ALBA

Spool Nº: P2308S-00999
Isometric Nº: 2121-LO40B03-2
Piece Mark: 2121-LO40B03-2-SP04-00999

Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:
4274-LZ-VD-FW31010370QAC02 - Rev.1	ASME B.31.3 – Table 341.3.2	02/09/2024	Stainless Steel 304, 316, 317

Equipment

Type: G-RAY
Source Equip: Ir192
Source Dim: 2x1,4
Activity (Ci): 30,1

Film

Normal Fluid
Brand: FUJI
Type: IX50
Class: C3
Lead Sheets: 0,5
Films/Casette: Single

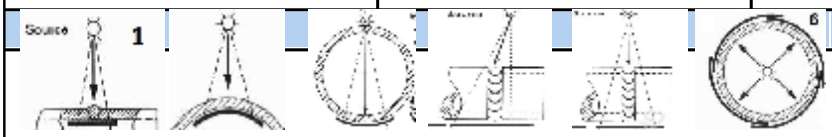
IQI

Type: ASTM-1A
Position: Film Side
Sensitivity: 4
Ø of visible wire/hole: 0,0063(0,16)

Development

Equipment: GE M ECO
Type: Auto
Temperature: 29
Developer: G135
Fixer: G335

Testing Technique



1 2 3 4 5 6

Indication Codes (ISO 6520)

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

General Remarks

The results refer to the controlled items

Notations / Symbology

- 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
0011	2.0000 S10S BW (MW.26_BW)	AY	A	500	0	NA	4	360s	3.1	4		-	
0011	2.0000 S10S BW (MW.26_BW)	AY	B	500	0	NA	4	360s	3.1	4		-	

Radiographic Examination Report

P2308-000294

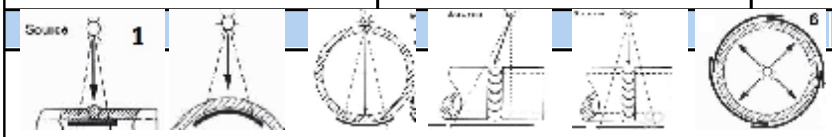
Contract : P2308
Client : NERVION
Project : ALBA

Spool Nº: P2308S-00999
Isometric Nº: 2121-LO40B03-2
Piece Mark: 2121-LO40B03-2-SP04-00999

Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:
4274-LZ-VD-FW31010370QAC02 - Rev.1	ASME B.31.3 – Table 341.3.2 Normal Fluid	02/09/2024	Stainless Steel 304, 316, 317

Equipment		Film		IQI		Development	
Type:	G-RAY	Brand:	FUJI	Type:	ASTM-1A	Equipment:	GE M ECO
Source Equip:	Ir192	Type:	IX50	Position:	Film Side	Type:	Auto
Source Dim:	2x1,4	Class:	C3	Sensitivity:	4	Temperature:	29
Activity (Ci):	30,1	Lead Sheets:	0,5	Ø of visible wire/hole	0,0063(0,16)	Developer:	G135
		Films/Casette:	Single			Fixer:	G335

Testing Technique



1 2 3 4 5 6

Indication Codes (ISO 6520)

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

General Remarks

The results refer to the controlled items

Notations / Symbology

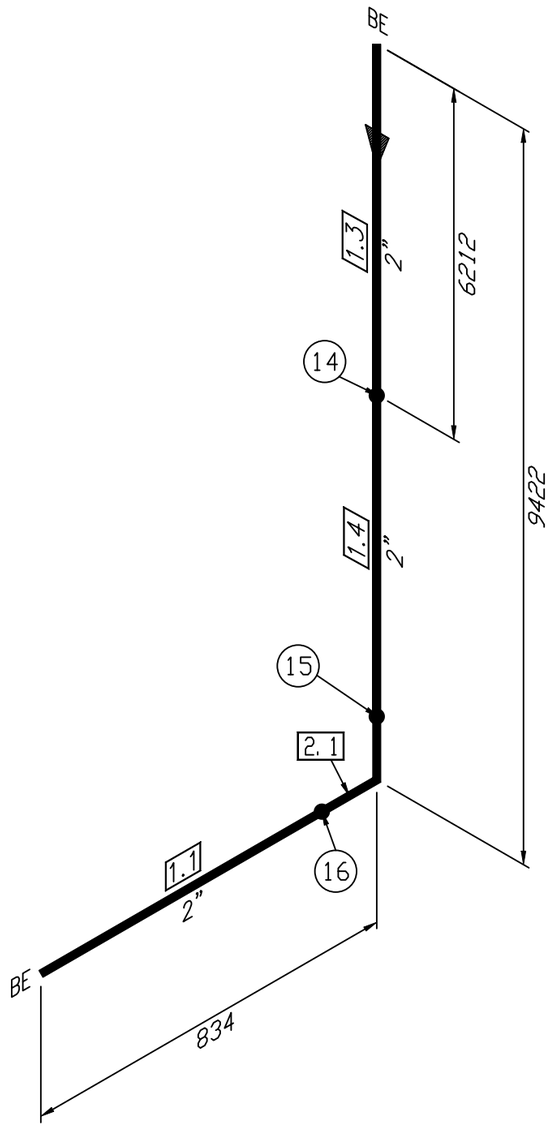
- Good / Acceptable + Repair = Good after Repair x Acceptable after Repair SFD = Source Film Distance SOD = Source Object Distance

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

	Performed by:	Examined by:	QA/QC Inspection:	Customer Inspection:
Name:	GONCALVES(QA), J. (N2 PT/RT)	FERREIRA(QA), V. (N3 PT/RT)	GIL, MIGUEL	
Date:	02/09/2024	02/09/2024	06/09/2024 09:25:18	
Signature:			QA / QC	Sergio Morales Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

N



BILL OF MATERIAL

PIPE

ITEM	LENGTH	DIAMETER	SCH/mm	DESCRIPTION / MATERIAL	ITEM CODE
1.1	0,756	2"	S-10S	PIPE - A312-TP304/304L DUAL GR BE SMLS, BExBE	I3364302
1.3	6,212	2"	S-10S	PIPE - A312-TP304/304L DUAL GR BE SMLS, BExBE	I3364302
1.4	3,130	2"	S-10S	PIPE - A312-TP304/304L DUAL GR BE SMLS, BExBE	I3364302

WELD FITTINGS

ITEM	QT	DIAMÉTRE	SCH/mm	DESCRIPTION / MATÉRIEL	ITEM CODE
2.1	1	2"	S-10S	90 LR ELBOW ASME B16.9 A403-WP304/304L DG BE SMLS	I2259133

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu C. Sandu
13.09.2024

Rev.	Date	DRW	Check 1	Check 2		
					Marking Color:	GREEN
					Weld Class:	QXB-55-M
01	25/04/2024	AOM	LRG	PCO	Paint System:	NR

Sergio Morales

Date: 12-09-24

Weld Map Sticker

P2308S 01000

2121-LO40B03-2-SP05-01000

boccard Alliance for success
Boccard Portugal, Lda.

Construction Code:	ASME B31.3	% RT -	YES	% UT -	NO	Hydro:	NO	ID Cleaning:	YES
Acc Criteria:	ASME B31.3	% PT -	YES	% FE -	NO	PWHT:	NO	OD Cleaning:	YES
Metal Tag:	YES	% MT -	NO	% PMI -	YES	BHN% -	NO	Tolerances:	ASME B31.3

Piece Mark	Ref. Drawing	Job #	Spool #	Project
2121-LO40B03-2-SP05-01000	2121-LO40B03-2	P2308S	01000	REPSOL PROJETO ALBA NERVION

F324-302-0

Spool Material List

Contract : P2308 Client NERVION

Job : P2308S Project ALBA

Job	Spool	Piece Mark	Drawing	Rev
P2308S	01000	2121-LO40B03-2-SP05-01000	2121-LO40B03-2	01

Item No / Tag No / ID No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No / MTR No / Folder No	Unit Weight Kgs	Weight Kgs
1.1 40391	,756	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	2,97
1.3 40391	6,212	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	24,41
1.4 40391	3,13	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	S-23594 0357	3,93	12,30
2.1 42965	1	2.0000	S10S	0.0000	NA	90 LR ELL, SEAMLESS, A403-WP304L	M220696 0410	0,49	0,49

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Number of Items : 4 Total Weight : 40,18

	QA	Client
Signature	QA / QC	Sergio Morales Date: 12-09-24
Date	2024-09-10 14:54:49	

Welding and QC Report Per Spool

Contract : P2308 | Drawing : 2121-LO40B03-2 | Job : P2308S | Material : Stainless Steel 304, 316, 317

Client : NERVION | Revision : 01 | Spool : 01000 | Spec : QXB-55-M

Project : ALBA | Piece Mark : 2121-LO40B03-2-SP05-01000

Weld data					Welding						Control																					
Weld No.	Type	Dia	Sch /Thk	Weld Proc.	1st Pass	Pass 1	1st MTR	Final Pass	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	Ferite	Date Ferrite	PWHT	Date PWHT	BHN	Date BHN	Ultra	Date UT	Xray	Date Xray			
0014	BW	2	S10S	MW.26_BW	AY	31/07/2024	4712055	AY	31/07/2024	4712055			000808	20/08/2024					000830	07/09/2024													
0015	BW	2	S10S	MW.26_BW	AY	22/07/2024	4712055	AY	22/07/2024	4712055			000808	20/08/2024					000830	07/09/2024													
0016	BW	2	S10S	MW.26_BW	AY	22/07/2024	4712055	AY	22/07/2024	4712055			000808	20/08/2024					000830	07/09/2024													

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Notes:

	Boccard Portugal QC	Client
Signature	QA / QC	Sergio Morales Date: 12-09-24
Date	10/09/2024 14:54:49	

Shop QC Inspection Report

P2308-000833

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

Job number: P2308S
Spool Nº: 01000
Piece Mark: 2121-LO40B03-2-SP05-01000

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

Control Date: 20/08/2024

Remarks: The results refer to the controlled items

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

Comments:

Performed by: MATOS, MARCO (N2 VT/PT)
Date: 20/08/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 10/09/2024 14:54:49
Signature

Customer Inspection:
Sergio Morales
Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Visual Examination Report (Welds)

P2308-000808

Contract : P2308
Client : NERVION
Project : ALBA

Job number: P2308S
Spool Nº: 01000
Piece Mark: 2121-LO40B03-2-SP05-01000

Material: Stainless Steel 304, 316, 317
Procedure & Instructions: 4274-LZ-VD-FW31010370QAC04 - Rev: 1
Testing Date: 20/08/2024

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

Identification			Temp. (ºF/ºC)	Accepted	Rejected	Defect	Technique Used	Comments
Weld No.	Weld Desc.	Welder						
0014	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	25	X			Direct	
0015	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	25	X			Direct	
0016	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	AY	25	X			Direct	

Sketch / Photo:

Defects

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

Test Performed by: MATOS, MARCO (N2 VT/PT)
Date: 20/08/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 10/09/2024 14:54:49
Signature

Customer Inspection:
Sergio Morales
Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Positive Material Identification Report (PMI)

P2308-000830

Client : NERVION
Contract : P2308 / Project : ALBA

Job number: P2308S
Spool Nº: 01000
Piece Mark: 2121-LO40B03-2-SP05-01000
Material: Stainless Steel 304, 316, 317

Procedure / Instruction reference: 4274-LZ-VD-FW31010370QAC11 - Rev: 1
PMI Equipment : Niton XL3t800 Serial Nº 32735 (FP01)
Equipment Deviation : + - 5%
Testing Date: 07/09/2024

Remarks: The results refer to the controlled items

Weld / Item No	Description	Reading number	Chemical Elements										Accepted	Rejected	Comments
		Longitudinal	%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V			
0014	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	655	0	0	0	8	69	1	19	0	0	0	X		
0015	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	653	0	0	0	8	70	1	18	0	0	0	X		
0016	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	651	0	0	0	8	70	1	19	0	0	0	X		
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	650	0	0	0	8	71	1	17	0	0	0	X		
1.3	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	656	0	0	0	8	70	1	18	0	0	0	X		
1.4	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (S-23594)	654	0	0	0	8	71	1	18	0	0	0	X		
2.1	2.0000 S10S 90 LR ELL, SEAMLESS, A403-WP304L (M220696)	652	0	0	0	7	68	1	21	0	0	0	X		

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

Test Performed by: GONCALVES(QA), J. (N2 PT/RT)
Date: 07/09/2024
Signature

QA/QC Inspection: GIL, MIGUEL
Date: 10/09/2024 14:54:49
Signature

Customer Inspection:
Date: Sergio Morales
Signature
Date: 12-09-24

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

Certificate of PMI Reading

XL3t-32735

Reading No	655
Mode	ALLOY
Time	2024-09-07 12:49
Duration	7.09
Sequence	Final
Alloy1	304SS : 0.44
Alloy2	No Match : 1.72
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.050
Sn	< LOD	:	0.067
Pd	< LOD	:	0.051
Ag	< LOD	:	0.205
Al	< LOD	:	80.000
Mo	0.060	±	0.012
Nb	< LOD	:	0.012
Zr	< LOD	:	0.006
Bi	< LOD	:	0.008
Pb	< LOD	:	0.024
Se	< LOD	:	0.008
W	< LOD	:	0.135
Zn	< LOD	:	0.047
Cu	< LOD	:	0.193
Ni	8.513	±	0.384
Co	< LOD	:	0.634
Fe	69.939	±	0.588
Mn	1.570	±	0.265
Cr	19.350	±	0.346
V	< LOD	:	0.170
Ti	< LOD	:	0.210

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	653
Mode	ALLOY
Time	2024-09-07 12:48
Duration	6.52
Sequence	Final
Alloy1	304SS : 0.90
Alloy2	No Match : *2.08
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.057
Sn	< LOD	:	0.068
Pd	< LOD	:	0.054
Ag	< LOD	:	0.179
Al	< LOD	:	80.000
Mo	0.064	±	0.012
Nb	< LOD	:	0.010
Zr	< LOD	:	0.005
Bi	< LOD	:	0.020
Pb	< LOD	:	0.028
Se	< LOD	:	0.016
W	< LOD	:	0.125
Zn	< LOD	:	0.054
Cu	< LOD	:	0.221
Ni	8.724	±	0.404
Co	< LOD	:	0.663
Fe	70.416	±	0.606
Mn	1.642	±	0.274
Cr	18.350	±	0.350
V	< LOD	:	0.177
Ti	< LOD	:	0.204

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	651
Mode	ALLOY
Time	2024-09-07 12:48
Duration	5.73
Sequence	Final
Alloy1	304SS : 0.37
Alloy2	No Match : 1.73
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.060
Sn	< LOD	:	0.076
Pd	< LOD	:	0.052
Ag	< LOD	:	0.126
Al	< LOD	:	80.000
Mo	0.026	±	0.010
Nb	< LOD	:	0.012
Zr	< LOD	:	0.004
Bi	< LOD	:	0.022
Pb	< LOD	:	0.040
Se	< LOD	:	0.018
W	< LOD	:	0.159
Zn	< LOD	:	0.060
Cu	< LOD	:	0.202
Ni	8.514	±	0.431
Co	< LOD	:	0.712
Fe	70.035	±	0.658
Mn	1.735	±	0.301
Cr	19.192	±	0.387
V	< LOD	:	0.186
Ti	< LOD	:	0.232

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	650
Mode	ALLOY
Time	2024-09-07 12:47
Duration	17.86
Sequence	Final
Alloy1	304SS : 2.16
Alloy2	No Match : *2.39
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.029
Sn	< LOD	:	0.037
Pd	< LOD	:	0.028
Ag	< LOD	:	0.198
Al	< LOD	:	80.000
Mo	< LOD	:	0.005
Nb	< LOD	:	0.003
Zr	< LOD	:	0.002
Bi	< LOD	:	0.011
Pb	< LOD	:	0.007
Se	< LOD	:	0.004
W	< LOD	:	0.060
Zn	< LOD	:	0.026
Cu	< LOD	:	0.107
Ni	8.085	±	0.214
Co	0.542	±	0.182
Fe	71.650	±	0.329
Mn	1.482	±	0.146
Cr	17.833	±	0.188
V	0.133	±	0.050
Ti	< LOD	:	0.108

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	656
Mode	ALLOY
Time	2024-09-07 12:49
Duration	6.53
Sequence	Final
Alloy1	304SS : 1.64
Alloy2	No Match : *2.55
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.056
Sn	< LOD	:	0.068
Pd	< LOD	:	0.056
Ag	< LOD	:	0.120
Al	< LOD	:	80.000
Mo	0.030	±	0.010
Nb	< LOD	:	0.007
Zr	< LOD	:	0.008
Bi	< LOD	:	0.010
Pb	< LOD	:	0.004
Se	< LOD	:	0.014
W	< LOD	:	0.102
Zn	< LOD	:	0.050
Cu	< LOD	:	0.220
Ni	8.298	±	0.398
Co	< LOD	:	0.673
Fe	70.645	±	0.612
Mn	1.548	±	0.273
Cr	18.346	±	0.352
V	< LOD	:	0.196
Ti	< LOD	:	0.208

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	654
Mode	ALLOY
Time	2024-09-07 12:49
Duration	5.31
Sequence	Final
Alloy1	304SS : 0.54
Alloy2	No Match : 2.32
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.055
Sn	< LOD	:	0.076
Pd	< LOD	:	0.057
Ag	< LOD	:	0.142
Al	< LOD	:	80.000
Mo	0.085	±	0.015
Nb	< LOD	:	0.009
Zr	< LOD	:	0.006
Bi	< LOD	:	0.011
Pb	< LOD	:	0.021
Se	< LOD	:	0.009
W	< LOD	:	0.156
Zn	< LOD	:	0.056
Cu	< LOD	:	0.228
Ni	8.174	±	0.424
Co	< LOD	:	0.718
Fe	71.349	±	0.652
Mn	1.261	±	0.286
Cr	18.144	±	0.375
V	< LOD	:	0.206
Ti	< LOD	:	0.194

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024

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

Certificate of PMI Reading

XL3t-32735

Reading No	652
Mode	ALLOY
Time	2024-09-07 12:48
Duration	24.82
Sequence	Final
Alloy1	304SS : *3.67
Alloy2	No Match : *4.59
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.035
Sn	< LOD	:	0.043
Pd	< LOD	:	0.034
Ag	< LOD	:	0.163
Al	< LOD	:	80.000
Mo	< LOD	:	0.007
Nb	< LOD	:	0.006
Zr	< LOD	:	0.005
Bi	< LOD	:	0.010
Pb	< LOD	:	0.014
Se	< LOD	:	0.008
W	< LOD	:	0.087
Zn	< LOD	:	0.029
Cu	< LOD	:	0.125
Ni	7.459	±	0.245
Co	0.597	±	0.203
Fe	68.805	±	0.388
Mn	1.387	±	0.160
Cr	21.202	±	0.308
V	0.266	±	0.069
Ti	< LOD	:	0.092

Sergio Morales

Date: 12-09-24

On behalf of Tecnimont / R
Piping Supervisor
Cristi Sandu
13.09.2024