



Tecnimont S.p.A.

4274_CONST

ALBA PROJECT-PP AND PEL PLANTS



MOD-ITP-XL_220		RELEASE OF SPOOLS FROM WORKSHOP	Report n° IP-WSR-P-310-000190_RFI3162_MOD-ITP-XL_220
Rev.1			RFI Nr.: Date :
Unit	-		
Plant Area	-		
Isometric Number			
Inspection Package Number	IP-WSR-P-310-000190_RFI3162 - IP Spool Release From Workshop		

Sheet 01/01

The Present Inspection Package contains the following Elements:

1211-SA81018-2-SP01-00330;3221-SWW92031-2-SP05-00694;3221-SWW92031-2-SP01-00693;1211-PP89013-1-SP02-00329;1211-PP89013-1-SP01-00328;3211-N91014-1-SP03-00565;3211-N91014-1-SP01-00563;2211-PCW71A01-2-SP06-00418;3221-SWW91H11-1-SP01-00666;3211-SWW92025-2-SP02-00625;3211-SWW92024-1-SP01-00597;3211-SWW92004-1-SP03-00599;1111-DMW01001-3-SP08-03027;1121-LS50003-1-SP02-00176;1122-LA16030-1-SP01-00529;1111-DMW01001-3-SP19-03088;1121-LS50003-1-SP01-00175;1122-N12042-1-SP01-00533;1122-N14002-2-SP02-00535;1122-VZ16007-1-SP01-00558;1122-VZ14016-1-SP02-00557;1211-PP89008-1-SP02-00321;1211-PP89008-1-SP01-00320;3221-SWW91H09-3-SP02-00664;1122-N14023-1-SP01-00540;3221-SWW92001-1-SP02-00669;3211-N91016-1-SP01-00569;3211-SWW92028-2-SP04-00639;3211-SWW92028-2-SP02-00637;3211-SWW92005-3-SP05-00608;3211-SWW92001-1-SP02-00610;7111-DMW00B01-5-SP11-03009;7111-DMW00B01-5-SP13-03011;1111-DMW01001-8-SP13-03038;1121-LS50049-1-SP06-00201;1111-DMW6400-3-1-SP01-03046;1122-CT14001-1-SP02-00930;1122-015022-1-SP01-00549;1122-VZ12009-1-SP01-00551;3211-SWW91H05-2-SP02-00578;3211-SWW91H05-1-SP03-00576;1211-PP89007-1-SP02-00349;1211-PP89007-1-SP01-00348;3221-SWW92003-2-SP04-00680;3221-SWW92003-1-SP02-00678;3221-SWW91H01-2-SP04-00648;3221-SWW91H03-1-SP01-00653;3211-SWW92029-2-SP04-00643;3211-SWW91H16-1-SP01-00590;3211-SWW92005-1-SP06-00603;3211-SWW92005-2-SP02-00605;3211-SWW92029-2-SP02-00641;1111-DMW01001-8-SP12-03037;1122-CT14005-1-SP02-00511;7111-DMW00B01-7-SP19-03017;1111-DMW01001-5-SP17-03033;1122-N14026-1-SP01-00541;1122-DO12006-1-SP02-00516;1122-O13024-1-SP02-00544;3211-SWW91H15-2-SP03-00588;7111-DMW91Q01-1-SP01-03020;3211-SWW92029-2-SP03-00642;3211-SWW92026-2-SP02-00629;3221-SWW91H03-1-SP02-00654;3221-SWW91H01-2-SP03-00647;1211-DMW64001-2-SP04-03053;3211-N91015-1-SP01-00566;1211-PP89007-1-SP04-00351;2211-LS70A01-1-SP03-00390;3221-SWW92003-2-SP05-00681;3221-SWW92003-1-SP01-00677;3211-SWW92014-1-SP01-00561;1211-LS50006-4-SP05-00198;1122-CT14003-1-SP02-00509;1122-VZ14012-1-SP01-00554;1122-O13024-1-SP01-00543;3211-N91013-2-SP03-00561;3211-SWW91H15-2-SP04-00589;3211-SWW92005-2-SP01-00640;3211-SWW92002-1-SP01-00642;3211-SWW92012-1-SP01-00611;1111-DMW01001-5-SP16-03032;1211-LS50001-2-SP04-00144;7111-DMW00B01-4-SP08-03006;1211-PP89010-1-SP01-00325;3221-SWW92002-1-SP05-00672;1211-PP89008-1-SP03-00322;3221-SWW92001-1-SP01-00668;3221-SWW91H09-3-SP03-00665;3211-SWW92028-2-SP03-00638;3221-SWW91H03-1-SP03-00655;3211-SWW91H05-1-SP01-00586;3221-SWW92005-3-SP04-00607;3211-SWW92011-1-SP01-00609;3211-SWW92026-2-SP04-00631;7111-DMW00B01-5-SP12-03010;1111-DMW64003-1-SP02-03047;1111-DMW01001-8-SP14-03039;1122-CT14001-1-SP01-00929;1122-CT14003-1-SP03-00195;1122-VZ12010-1-SP01-00552;1122-O15022-1-SP02-00550;3211-N91020-1-SP03-00574;3211-SWW91H05-1-SP04-00577;7111-DMW00B01-5-SP10-03008;7111-DMW00B01-7-SP18-03016;2211-LS70A01-1-SP01-00388;2211-LS70A01-1-SP02-00389;2121-IA91F6-2-10-SP05-00481;1211-VA89015-2-SP01-00369;3211-N91016-1-SP02-00570;3211-N91015-1-SP03-00568;3211-SWW92026-2-SP03-00630;3211-SWW92025-2-SP04-00627;3211-SWW92012-1-SP02-00612;3211-SWW92013-1-SP02-00614;1122-VZ14012-1-SP02-00555;1122-VZ12011-1-SP01-00553;3211-N91013-2-SP04-00562;3211-N91020-1-SP02-00573;7111-DMW00B01-4-SP07-03005;7111-DMW00B01-5-SP09-03007;7111-IA00D01-8-SP16-00020;1121-LS50001-4-SP06-00146;1121-LS50001-2-SP03-00143;1121-LS50005-2-SP03-00191;1121-LS50006-4-SP06-00199;1211-DMW63006-1-SP01-03048;1211-SA81018-2-SP03-00332;3221-SWW92005-2-SP02-00685;1211-SA81018-2-SP02-00331;3221-SWW91H01-1-SP02-00646;3211-N91014-1-SP02-00564;3211-N91015-1-SP02-00567;3221-SWW92005-1-SP01-00684;3211-SWW92015-1-SP01-00617;3221-SWW91H01-1-SP01-00645;3211-SWW92004-1-SP02-00598;3211-SWW92014-1-SP02-00616;3211-SWW91H16-1-SP02-00591;3211-N91013-2-SP01-00559;3211-N91013-2-SP02-00560;1121-LS50005-2-SP02-00190;1121-LS50001-9-SP14-00152;1122-N12017-1-SP01-00531;1122-LA16030-1-SP02-00530;1111-DMW01001-3-SP20-03089;1111-DMW01001-5-SP15-03031;1211-VA81020-1-SP01-00299;2121-IA91F62-10-SP04-00480;1211-LN84001-2-SP01-00300;1211-PP83006-1-SP01-00319;3221-SWW92003-2-SP03-00679;3211-N91016-1-SP03-00571;1211-DMW63006-1-SP02-03049;3221-SWW91H02-1-SP01-00649;3211-SWW92029-2-SP05-00644;3211-SWW92025-2-SP03-00626;7111-DMW00B01-7-SP20-03018;1111-DMW01001-5-SP18-03034;7111-IA00D01-8-SP38-00932;1121-LS50006-5-SP07-00200;1122-DO12006-1-SP01-00515;1122-VZ14016-1-SP01-00556;1122-N14007-2-SP02-00538;3211-N91020-1-SP01-00572;3211-SWW91H15-1-SP02-00587;3211-SWW92005-2-SP03-00606;3211-SWW92013-1-SP01-00613

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 TCM \ R

QAE \ I. Matici
09.07.2024On behalf of Technimont / R
Piping Supervisor
Cristi Sandu
09.07.2024 C. Sandu

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
SUBCONTRACTOR	09-07-2024	Sergio Morales Collantes				
CONTRACTOR						
COMPANY						
(Free)						





Tecnimont S.p.A.

4274_CONST

ALBA PROJECT-PP AND PEL PLANTS



MOD-ITP-XL_220		RELEASE OF SPOOLS FROM WORKSHOP	Report n° IP-WSR-P-310-000190_RFI3162_MOD-ITP-XL_220
Rev.1		RFI Nr.: Date :	
Unit -			
Plant Area -			
Isometric Number			
Inspection Package Number IP-WSR-P-310-000190_RFI3162 - IP Spool Release From Workshop			

Sheet 01/01

The Present Inspection Package contains the following Elements:

1211-SA81018-2-SP01-00330;3221-SWW92031-2-SP05-00694;3221-SWW92031-2-SP01-00693;1211-PP89013-1-SP02-00329;1211-PP89013-1-SP01-00328;3211-N91014-1-SP03-00565;3211-N91014-1-SP01-00563;2211-PCW71A01-2-SP06-00418;3221-SWW91H11-1-SP01-00666;3211-SWW92025-2-SP02-00625;3211-SWW9202-2-SP02-00618;3211-SWW92004-1-SP01-00597;3211-SWW92004-1-SP03-00599;1111-DMW01001-3-SP08-03027;1121-LS50003-1-SP02-00176;1122-LA16030-1-SP01-00529;1111-DMW01001-3-SP19-03088;1121-LS50003-1-SP01-00175;1122-N12024-1-SP01-00533;1122-N14002-2-SP02-00535;1122-VZ16007-1-SP01-00558;1122-VZ14016-1-SP02-00557;1211-PP89008-1-SP02-00321;1211-PP89008-1-SP01-00320;3221-SWW91H09-3-SP02-00664;1122-N14023-1-SP01-00540;3221-SWW92001-1-SP02-00669;3211-N91016-1-SP01-00569;3211-SWW92028-2-SP04-00639;3211-SWW91H09-3-SP02-00637;3211-SWW92005-3-SP05-00608;3211-SWW92011-1-SP02-00610;7111-DMW00B01-5-SP11-03009;7111-DMW00B01-5-SP13-03011;1111-DMW01001-8-SP13-03038;1121-LS50049-1-SP06-00201;1111-DMW6400-3-1-SP01-03046;1122-CT14001-1-SP02-00930;1122-O15022-1-SP01-00549;1122-VZ12009-1-SP01-00551;3211-SWW91H05-2-SP01-00578;3211-SWW91H05-1-SP03-00576;1211-PP89007-1-SP02-00349;1211-PP89007-1-SP01-00348;3221-SWW92003-2-SP04-00680;3221-SWW92003-1-SP02-00678;3221-SWW91H01-3-SP04-00648;3221-SWW91H03-1-SP01-00653;3211-SWW92029-2-SP04-00643;3211-SWW91H16-1-SP01-00590;3211-SWW92005-1-SP06-00603;3211-SWW92005-2-SP02-00605;3211-SWW92029-2-SP02-00641;1111-DMW01001-8-SP12-03037;1122-CT14005-1-SP02-00511;7111-DMW00B01-7-SP19-03017;1111-DMW01001-5-SP17-03033;1122-N14026-1-SP01-00541;1122-DO12006-1-SP02-00516;1122-O13024-1-SP02-00544;3211-SWW91H15-2-SP03-00588;7111-DMW91Q01-1-SP01-03020;3211-SWW92029-2-SP03-00642;3211-SWW92026-2-SP02-00629;3221-SWW91H03-1-SP02-00654;3221-SWW91H01-2-SP03-00647;1211-DMW64001-2-SP04-03053;3211-N91015-1-SP01-00566;1211-PP89007-1-SP04-00351;2211-LS70A01-1-SP03-00390;3221-SWW92003-2-SP05-00681;3221-SWW92003-1-SP01-00677;3211-SWW92014-1-SP01-00561;3211-SWW91H15-2-SP04-00589;3211-SWW92005-2-SP01-00640;3211-SWW92012-1-SP01-00641;1111-DMW01001-5-SP16-03032;1121-LS50001-2-SP04-00144;7111-DMW00B01-4-SP08-03006;1211-PP89010-1-SP01-00325;3221-SWW92002-1-SP05-00672;1211-PP89008-1-SP03-00322;3221-SWW92001-1-SP01-00668;3221-SWW91H09-3-SP03-00665;3211-SWW92028-2-SP03-00638;3221-SWW91H03-1-SP03-00655;3211-SWW91H15-1-SP01-00586;3211-SWW92026-2-SP02-00607;3211-SWW92011-1-SP01-00609;3211-SWW92026-2-SP04-00631;7111-DMW00B01-5-SP12-03010;1111-DMW64003-1-SP02-03047;1111-DMW01001-8-SP14-03039;1122-CT14001-1-SP01-00929;1122-CT14003-1-SP03-00195;1122-VZ12010-1-SP01-00552;1122-O15022-1-SP02-00550;3211-N91020-1-SP03-00574;3211-SWW91H05-1-SP04-00577;7111-DMW00B01-5-SP10-03008;7111-DMW00B01-7-SP18-03016;2211-LS70A01-1-SP01-00388;2211-LS70A01-1-SP02-00389;2121-IA91F6-2-10-SP05-00481;1211-VA89015-2-SP01-00369;3211-N91016-1-SP02-00570;3211-N91015-1-SP03-00568;3211-SWW92026-2-SP03-00630;3211-SWW92025-2-SP04-00627;3211-SWW92012-1-SP02-00612;3211-SWW92013-1-SP02-00614;1122-VZ14012-1-SP02-00555;1122-VZ12011-1-SP01-00553;3211-N91013-2-SP04-00562;3211-N91020-1-SP02-00573;7111-DMW00B01-4-SP07-03005;7111-DMW00B01-5-SP09-03007;7111-IA00D01-8-SP16-00020;1121-LS50001-4-SP06-00146;1121-LS50001-2-SP03-00143;1121-LS50005-2-SP03-00191;1121-LS50006-4-SP06-00199;1211-DMW63006-1-SP01-03048;1211-SA81018-2-SP03-00332;3221-SWW92005-2-SP02-00685;1211-SA81018-2-SP02-00331;3221-SWW91H01-1-SP02-00646;3211-N91014-1-SP02-00564;3211-N91015-1-SP02-00567;3221-SWW92005-1-SP01-00684;3211-SWW92015-1-SP01-00617;3221-SWW91H01-1-SP01-00645;3211-SWW92004-1-SP02-00598;3211-SWW92014-1-SP02-00616;3211-SWW91H16-1-SP02-00591;3211-N91013-2-SP01-00559;3211-N91013-2-SP02-00560;1121-LS50005-2-SP02-00190;1121-LS50001-9-SP14-00152;1122-N12017-1-SP01-00531;1122-LA16030-1-SP02-00530;1111-DMW01001-3-SP20-03089;1111-DMW01001-5-SP15-03031;1211-VA81020-1-SP01-00299;1211-IA91F62-10-SP04-00480;1211-LN84001-2-SP01-00300;1211-PP83006-1-SP01-00319;3221-SWW92003-2-SP03-00679;3211-N91016-1-SP03-00571;1211-DMW63006-1-SP02-03049;3221-SWW91H02-1-SP01-00649;3211-SWW92029-2-SP05-00644;3211-SWW92025-2-SP03-00626;7111-DMW00B01-7-SP20-03018;1111-DMW01001-5-SP18-03034;7111-IA00D01-8-SP38-00932;1121-LS50006-5-SP07-00200;1122-DO12006-1-SP01-00515;1122-VZ14016-1-SP01-00556;1122-N14007-2-SP02-00538;3211-N91020-1-SP01-00572;3211-SWW91H15-1-SP02-00587;3211-SWW92005-2-SP03-00606;3211-SWW92013-1-SP01-00613

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 TCM \ R
GM L. Metti
09.07.2024

On behalf of Tecnimon / R
Piping Supervisor
Cristi Sandu
09.07.2024 C. Sandu

LEGEND OF CHECK RESULT	<input checked="" type="checkbox"/> Checked & NOT Accepted	<input type="checkbox"/> Checked & Accepted	N.A.	Not Applicable	Y / N	Punch List Produced
SUBCONTRACTOR	Date [DD-MMM-YYYY]	Name		Signature		
CONTRACTOR	09-07-2024	Sergio Morales Collantes				
COMPANY						
(Free)						

 Tecnimont	<p style="text-align: center;">Punch List</p> <p style="text-align: center;">PUNCH LIST</p>	<p style="text-align: center;">IDENTIFICATION CODE</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			
 MECWIDE <small>Engineering Services</small>	<p>ISO ID: 2121-IA91F62-10</p>				

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

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	00480	2121-IA91F62-10-SP04-00480		2121-IA91F62-10		00	
1.1	1,953	2.0000 S10S	0.0000 NA	PIPE, SEAMLESS, A312-TP304L	A-6499 0100	3,93	7,68
40391							
5.1	1	2.0000 S10S	0.0000 NA	WN FLG, RAISED FACE, 150#, A182-F304L	DA182 0117	2,72	2,72
37867							
2.1	1	2.0000 S10S	0.0000 NA	TEE, SEAMLESS, A403-WP304L	S1030418 0062	0,78	0,78
44252							
3.1	1	2.0000 NA	0.7500 NA	SOCKOLET, 3000#, A182-F304L	515098 0300	0,15	0,15
88696							

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



Number of Items : 4

Total Weight : 11,33

Signature	QA	Client
		Sergio Morales Date: 18-06-24 
Date	2024-05-09 15:52:08	

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TTP/MTC-2023/1828

Rev: 00

Page: 1 of 8

Created on:
 Date: 16.08.2023

Modified on:

TUBACEX TUBES AND PIPES PVT LTD.

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

Dist. Valsad, Gujarat, INDIA

TL: +91 260 6616200, +91 260 6616240

E-MAIL: quality@tubacexindia.com

CUSTOMER DESCRIPTION

CLIENT SOLD TO

M/S. TUBACEX SERVICE SOLUTIONS, S.A.U.

CLIENT SHIP TO

CLIENT ORDER: 508342 DTD: 17.11.2022

TECHNIMONT PO NO.: 7500107816

SALES ORDER: 1202171

PROJECT: ALBA PROJECT

END USER: REPSOL

MATERIAL: SEAML. STAINL. STEEL PIPES.

COLD FINISHED & HEAT-TREATED. PICKLED & PASSIVATED ACC. TO ASTM A380.

GRADE: TP 304/304L

STANDARD:

ASTM A 312/A 312M-21 (ED.2022) PED 2014/68/EU

ASME B16.25 FIG.4

CUSTOMER SPECIFICATION:

4274-XH-SS-00000001, REV.01

COLOR CODE: 4274-XZ-SG-00000006

PMA: 4274-XH-SS-0000100

ITP: TTP/QAP/2171/0329, REV.05, DT.05.06.2023

PROCEDURE NO:

TSS SAU-ALBA PROJECT/PSP/01 REV.00 PROCEDURE FOR PACKING/STORAGE AND PRESERVATION OF PRODUCT

TSS SAU-ALBA PROJECT/LSH/01 REV.00 PROCEDURE FOR LOADING/SHIPPING & HANDLING

CHECK ANALYSIS

HYDROTEST: ASTM A999/A999M ASTM A312

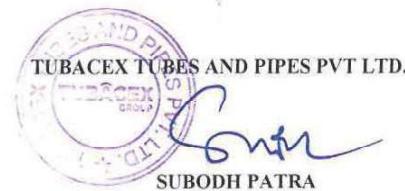
TOLERANCE: A312: A999

RANDOM LENGTHS: 9-11.8 M / 5-7 M / BEVELLED ENDS B16.25 FIG.4

DIMENSIONS: SR NO.1 - 60.33 MM OD X 2.77 MM THK - 2" X SCH 10S

DIMENSIONS: SR NO.2 - 60.33 MM OD X 5.54 MM THK - 2" X SCH 80S

DIMENSIONS: SR NO.3 - 114.30 MM OD X 6.02 MM THK - 4" X SCH 40S



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

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



INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TTP/MTC-2023/1828

Rev: 00

Page: 2 of 8

Created on:
Date: 16.08.2023

Modified on:

DIMENSIONS: SR NO.4 - 168.28 MM OD X 3.40 MM THK - 6" X SCH 10S
 DIMENSIONS: SR NO.5 - 168.28 MM OD X 7.11 MM THK - 6" X SCH 40S
 DIMENSIONS: SR NO.6 - 168.28 MM OD X 10.97 MM THK - 6" X SCH 80S
 DIMENSIONS: SR NO.7 - 21.34 MM OD X 4.78 MM THK - 1/2" X SCH 160S
 DIMENSIONS: SR NO.8 - 21.34 MM OD X 2.77 MM THK - 1/2" X SCH 40S
 DIMENSIONS: SR NO.9 - 21.34 MM OD X 3.73 MM THK - 1/2" X SCH 80S
 DIMENSIONS: SR NO.10 - 21.34 MM OD X 3.73 MM THK - 1/2" X SCH 80S
 DIMENSIONS: SR NO.11 - 26.67 MM OD X 2.87 MM THK - 3/4" X SCH 40S
 DIMENSIONS: SR NO.12 - 26.67 MM OD X 3.91 MM THK - 3/4" X SCH 80S
 DIMENSIONS: SR NO.13 - 21.34 MM OD X 3.91 MM THK - 3/4" X SCH 80S
 DIMENSIONS: SR NO.14 - 33.40 MM OD X 6.35 MM THK - 1" X SCH 160S
 DIMENSIONS: SR NO.15 - 33.40 MM OD X 6.35 MM THK - 1" X SCH 160S
 DIMENSIONS: SR NO.16 - 33.40 MM OD X 3.38 MM THK - 1" X SCH 40S
 DIMENSIONS: SR NO.17 - 33.40 MM OD X 3.38 MM THK - 1" X SCH 40S
 DIMENSIONS: SR NO.18 - 48.26 MM OD X 3.68 MM THK - 1.1/2" X SCH 40S
 DIMENSIONS: SR NO.19 - 21.34 MM OD X 7.47 MM THK - 1/2" X SCH XXS

Sr. No.	Sales Item	Tr item no	Ident no	Heat No	Pieces	Weight	Total Lgth	Un Lgth
1	60	6	I3364302	A-6499	3	-	33.420	9000-11800 MM
2	80	8	I2506931	A-6630	2	-	22.310	9000-11800 MM
3	120	12	I3364294	23L0253	12	-	72.72	5000-7000 MM
4	130	13	I3364305	MT100083	10	-	64.045	5000-7000 MM
5	140	14	I3364322	MT100081	3	-	17.82	5000-7000 MM
6	150	15	I3364327	MT100083	1	-	6.330	5000-7000 MM
7	170	17	I2514551	A-6500	7	-	81.715	9000-11800 MM
8	180	18	I2257937	A-6500	22	-	252.455	9000-11800 MM
9	190	19	I2257955	A-6500	27	-	304.575	9000-11800 MM
10	190	19	I2257955	A-6192	2	-	19.910	9000-11800 MM
11	210	21	I2257938	A-6500	17	-	184.605	9000-11800 MM
12	220	22	I2257956	A-6500	23	-	242.690	9000-11800 MM
13	230	23	I2514553	23L0555	3	-	28.350	9000-11800 MM
14	230	23	I2514553	A-6911	6	-	66.010	9000-11800 MM
15	240	24	I2257939	A-6968	5	-	58.320	9000-11800 MM



16/8/22
INSPECTION
52-D28

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

TUBACEX TUBES AND PIPES PVT LTD.
Subodh Patra

DY. MANAGER (QA/QC)



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16	240	24	I2257939	23L0545	12	133.810	9000-11800 MM
17	240	24	I2257939	235073	6	61.280	9000-11800 MM
18	260	26	I2257941	A-6911	1	10.740	9000-11800 MM
19	290	29	I6315316	22L2364	25	289.100	9000-11800 MM

RAW MATERIAL

Sr. No.	Heat No:	Method
1	A-6499	EF-AOD-CCM
2	A-6630	EF-AOD-CCM
3	23L0253	EIF-AOD-CCM
4&6	MT100083	Electric furnace + AOD
5	MT100081	Electric furnace + AOD
7,8,9,11&12	A-6500	EIF-AOD-CCM
10	A-6192	EIF-AOD-CCM
13	23L0555	EIF-AOD-CCM
14&18	A-6911	EIF-AOD-CCM
15	A-6968	EIF-AOD-CCM
16	23L0545	EIF-AOD-CCM
17	235073	IF/AOD/CCP(EMS)/HR
19	22L2364	EIF-AOD-CCM

CHEMICAL COMPOSITION (%)

*L: Ladle C: Products

Sr. No.	*	Heat	C	Mn	Si	P	S	Ni	Cr
Req. Max.			0.035	2.00	1.00	0.045	0.030	11.00	20.00
Req. Min.			-	-	-	-	-	8.00	18.00
1	L	A-6499	0.023	1.86	0.43	0.039	0.009	8.05	18.15
1	C	A-6499	0.025	1.88	0.46	0.038	0.010	8.08	18.26
2	L	A-6630	0.021	1.84	0.37	0.039	0.011	8.06	18.12
2	C	A-6630	0.022	1.86	0.38	0.035	0.014	8.07	18.27
3	L	23L0253	0.026	1.86	0.26	0.037	0.006	8.09	18.40
3	C	23L0253	0.027	1.90	0.29	0.038	0.009	8.11	18.48



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TUBACEX TUBES AND PIPES PVT LTD.

The stamp is circular with the text "TUBACEX" and "INDIA" around the perimeter. Handwritten text "SUBODH PATRA" and "DY. MANAGER (QA/QC)" are written below the stamp.



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4	L	MT100083	0.023	1.86	0.34	0.039	0.004	8.07	18.30
4	C	MT100083	0.024	1.85	0.36	0.038	0.006	8.09	18.38
5	L	MT100081	0.026	1.87	0.26	0.038	0.010	8.10	18.14
5	C	MT100081	0.027	1.88	0.27	0.037	0.011	8.13	18.26
5	L	MT100083	0.023	1.86	0.34	0.039	0.004	8.07	18.30
6	C	MT100083	0.025	1.89	0.36	0.038	0.008	8.09	18.36
6	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
7	C	A-6500	0.028	1.86	0.43	0.039	0.013	8.10	18.27
7	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
8	C	A-6500	0.026	1.83	0.41	0.037	0.012	8.07	18.28
8	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
9	C	A-6500	0.028	1.86	0.41	0.037	0.015	8.07	18.26
9	L	A-6192	0.023	1.82	0.43	0.038	0.013	8.05	18.20
10	C	A-6192	0.024	1.83	0.46	0.036	0.014	8.06	18.28
10	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
11	C	A-6500	0.026	1.83	0.41	0.034	0.014	8.10	18.28
11	L	A-6500	0.027	1.84	0.40	0.038	0.011	8.05	18.15
12	C	A-6500	0.026	1.87	0.44	0.037	0.015	8.09	18.22
12	L	23L0555	0.023	1.87	0.27	0.039	0.014	8.05	18.32
13	C	23L0555	0.025	1.88	0.29	0.036	0.015	8.07	18.39
13	L	A-6911	0.023	1.85	0.36	0.038	0.010	8.06	18.23
14	C	A-6911	0.024	1.86	0.38	0.036	0.013	8.09	18.31
14	L	A-6968	0.022	1.84	0.40	0.039	0.012	8.05	18.22
15	C	A-6968	0.024	1.86	0.43	0.037	0.014	8.07	18.29
15	L	23L0545	0.022	1.83	0.40	0.038	0.006	8.08	18.44
16	C	23L0545	0.024	1.85	0.41	0.037	0.008	8.12	18.49
16	L	235073	0.021	1.80	0.27	0.038	0.005	8.08	18.13
17	C	235073	0.023	1.82	0.28	0.037	0.008	8.09	18.26



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SUBODH PATRA
DY. MANAGER (QA/QC)



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17	L	A-6911	0.023	1.85	0.36	0.038	0.010	8.06	18.23
18	C	A-6911	0.024	1.86	0.37	0.037	0.012	8.07	18.34
18	L	22L2364	0.024	1.84	0.28	0.039	0.009	8.07	18.17
19	C	22L2364	0.026	1.86	0.29	0.038	0.010	8.08	18.27

HEAT TREATMENT

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

TENSILE TEST: ACCORDING TO ASTM A 370

Sr. No.	Heat No:	Sample	Temp	YS	UTS	A2"	Type	Spec. Type	Spec. Dim	
									°C	MPa
Req. max.				---	---	---	---	---	---	---
Req. Min.				---	205	515	35	---	---	---
1	A-6499	1	RT	312.63	611.20	56.23	L	R	38.10	2.78
2	A-6630	1	RT	345.20	603.32	61.26	L	R	38.10	5.54
3	23L0253	1	RT	329.37	622.32	58.20	L	R	38.10	6.01
4	MT100083	1	RT	317.52	615.48	56.20	L	R	38.10	3.38
5	MT100081	1	RT	326.20	610.26	61.20	L	R	38.12	7.10
6	MT100083	1	RT	336.20	635.26	61.25	L	R	38.10	10.98
7	A-6500	1	RT	366.90	656.50	65.20	L	F	21.35	4.77
8	A-6500	1	RT	298.20	605.32	56.80	L	F	21.35	2.80
9	A-6500	1	RT	310.28	618.26	58.90	L	F	21.34	3.72
10	A-6192	1	RT	290.98	591.25	61.23	L	F	21.31	3.75
11	A-6500	1	RT	333.56	598.24	62.30	L	F	26.28	2.88
12	A-6500	1	RT	286.09	610.48	57.20	L	F	26.66	3.90
13	23L0555	1	RT	302.20	618.25	60.25	L	R	25.40	6.33
14	A-6911	1	RT	318.92	602.55	59.54	L	R	25.41	6.34
15	A-6968	1	RT	318.92	602.25	59.54	L	F	33.40	3.39
16	23L0545	1	RT	335.69	639.25	56.28	L	F	33.41	3.37



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52-028

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17	235073	1	RT	346.25	625.30	59.27	L	F	33.39	3.37
18	A-6911	1	RT	336.26	648.50	59.84	L	R	25.40	3.67
19	22L2364	1	RT	302.20	597.86	58.27	L	F	21.33	7.46

HARDNESS TEST: ACCORDING TO ASTM A 370

Sr. No.	Heat No:	Sample	HRB1	HRB2
	Req. Max		--	--
	Req. Min		--	--
1	A-6499	1	76	79
2	A-6630	1	78	81
3	23L0253	1	76	78
4	MT100083	1	74	76
5	MT100081	1	77	79
6	MT100083	1	77	80
7	A-6500	1	76	78
8	A-6500	1	77	80
9	A-6500	1	76	80
10	A-6192	1	77	79
11	A-6500	1	78	80
12	A-6500	1	76	79
13	23L0555	1	76	78
14	A-6911	1	77	80
15	A-6968	1	77	80
16	23L0545	1	77	80
17	235073	1	78	81
18	A-6911	1	77	80
19	22L2364	1	77	79

METALLURGICAL TESTS

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



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TUBACEX TUBES AND PIPES PVT LTD.



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MAGNIFICATION OBSERVED: FOUND SATISFACTORY.

NON-DESTRUCTIVE TESTS

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

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

Sr. No.	Sales Item	Hydro Pressure (Psig)	Remarks
1	60	1400	SATISFACTORY
2	80	2500	SATISFACTORY
3	120	1600	SATISFACTORY
4	130	650	SATISFACTORY
5	140	1300	SATISFACTORY
6	150	2000	SATISFACTORY
7	170	2500	SATISFACTORY
8	180	2500	SATISFACTORY
9&10	190	2500	SATISFACTORY
11	210	2500	SATISFACTORY
12	220	2500	SATISFACTORY
13&14	230	2500	SATISFACTORY
15,16&17	240	2500	SATISFACTORY
18	260	2300	SATISFACTORY
19	290	2500	SATISFACTORY

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

TECHNOLOGICAL TESTS

FLATTENING TEST: SATISFACTORY

MARKING

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

COLOR CODE:

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

REMARKS

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

NO WELDING OR WELD REPAIRS WERE MADE.

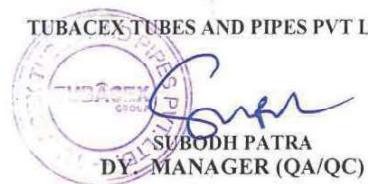
WE HEREBY CONFORM THAT WE ARE CERTIFIED BY TUV RHEINLAND INDUSTRIE SERVICE GmbH AS NOTIFIED BODY (0035) TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN ACCORDANCE TO PRESSURE EQUIPMENT



Certified Management System acc. to ISO 9001, ISO 14001 & ISO 45001 by TUV-NORD
52-028

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TUBACEX TUBES AND PIPES PVT LTD.



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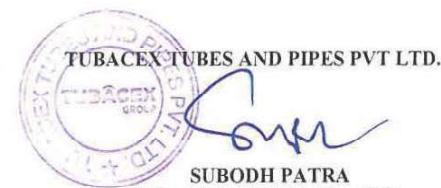
DIRECTIVE 2014/68/EU ANNEX 1 POINT 4.3 & AD 2000-W0.PED 2014/68/EU CERTIFICATE NO.: 01 202 IND/Q-15-0036 VALID UNTILL DECEMBER 31, 2024.

MATERIAL CHARACTERISTIC COMPLY WITH POINT 7.5 OF ANNEX 1 TO PED BY HAVING AN ELONGATION AFTER MATERIAL IS FREE OF RADIATION CONTAMINATION.

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

ABBREVIATIONS

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



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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												
(A06) CUSTOMER : M/S CUNADO SA (ESQUINA CALLE MEXICO) 28806 ALCALA DE HENARES (MADRID) CALLE CAMINO DEL OLIVAR, 2 SPAIN					(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 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & 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%									
Req	Mpa	Mpa	Mpa	Lo=4D	%	BHN-1	BHN -2	AVG	1	2	3	AVG
T	515 MIN	205 MIN	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)





VIRGILIO CENA & FIGLI S.p.A.

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

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

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

INSPECTION CERTIFICATE EN 10204/3.1												TECNIMONT SPA Via Gaetano De Castillia 6A 20124 MILANO, (MI) Italia																																																																																									
												CE23002480_3.1_01																																																																																									
Customer Order				7500107591 25.10.22-Proj.4274				Your Item Ref.																																																																																													
				Sines				308 - I2259149																																																																																													
Article/Specification				Seamless tees WP304/WP304L-S ASTM/ASME A/SA-403 ASME B16.9/18																																																																																																	
Heat Treatment				Cold formed - Solution annealed at 1050°Cx1,5/mm												Brand of manufacturer				CENA																																																																																	
Marking				IT - CENA - SA 403 WP304/304L-S - Heat Nr - Od. x Th.																																																																																																	
Extent of material delivered				Our pos.				Quantity								Article																																																																																					
				OV22001749/3010000				NR 1								2" 10s																																																																																					
Heat				S1030418		Marking code S1030418		Certificate				21-03-011 *				Supplier				HUADI STEEL GROUP																																																																																	
Raw material				Seamless pipe ASTM/ASME A/SA 312 Gr.P304																																																																																																	
Results of chemical analysis %												Ceq: C+ (Mn/6) + (Cr+Mo+V)/5 + (Cu+Ni)/15																																																																																									
<table border="1"> <thead> <tr> <th>C</th><th>Mn</th><th>Si</th><th>P</th><th>S</th><th>Cu</th><th>Ni</th><th>Cr</th><th>Mo</th><th>Al</th><th>Ti</th><th>Nb</th><th>V</th><th>N</th><th>B</th><th>Ceq</th><th>Pcm</th><th>Jfact.</th></tr> </thead> <tbody> <tr> <td>min.</td><td></td><td></td><td></td><td></td><td></td><td>8,0000</td><td>18,0000</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>max.</td><td>0,0800</td><td>2,0000</td><td>1,0000</td><td>0,0450</td><td>0,0300</td><td></td><td>11,0000</td><td>20,0000</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>Ladle</td><td>0,022</td><td>1,35</td><td>0,31</td><td>0,027</td><td>0,002</td><td></td><td>8,05</td><td>18,03</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>Check</td><td>0,021</td><td>1,34</td><td>0,32</td><td>0,026</td><td>0,003</td><td></td><td>8,06</td><td>18,04</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>												C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	Ti	Nb	V	N	B	Ceq	Pcm	Jfact.	min.						8,0000	18,0000											max.	0,0800	2,0000	1,0000	0,0450	0,0300		11,0000	20,0000										Ladle	0,022	1,35	0,31	0,027	0,002		8,05	18,03										Check	0,021	1,34	0,32	0,026	0,003		8,06	18,04									
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Mechanical Tests: On fittings												Impact Test - Specimen = KV																																																																																									
Specimen	Position	Direction	Temperature °C	Dimension mm	Yield Point N/mm²	Tensile Strength N/mm²	Elongation % 2"	Y _s --- T _s 10% of batch 3 tests min.	Hardness HB	<table border="1"> <thead> <tr> <th colspan="4">Obtained energy Joule</th> <th colspan="4">Shear Area %</th> </tr> <tr> <th colspan="2">Values</th> <th colspan="2">Average</th> <th colspan="2">Values</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td colspan="4"></td> <td colspan="4"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </tbody> </table>												Obtained energy Joule				Shear Area %				Values		Average		Values																																																																			
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0101495.0.0	A	L	20		235	540	46	0,44	143-145																																																																																												
The pipes are tested on tightness.												Steel making process:																																																																																									
Specimen position: A=neutral axis of base material; W=weld; E=extrados of base material; I=intrados of base material; Z=heat affected zone												Results of visual and dimensional inspection of fittings: SATISFACTORY Controllo visivo e dimensionale dei pezzi speciali / Results of visual and dimensional inspection of fittings: Soddisfacente / Satisfactory Il materiale fornito è in accordo ai requisiti dell'ordine / The product supplied is in compliance with the requirements of the order Documento redatto a fronte delle prove eseguite o della documentazione in ns.possesso. / Edited document on the strength of the made examinations or our own documents. Prodotti decapati e passivati / Products pickled and passivated Controllo PMI / Alloy steel verification (PMI): soddisfacente / satisfactory Prova di corrosione intergranulare secondo ASTM A 262 E / IGC test according to ASTM A262 E: soddisfacente/satisfactory — La 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 Ministériel du 24 mars 1978. Materiale esente da radiazioni / Material radiation free Material compliant with PED2014/68/EU																																																																																									
MT on the body satisfactory acc. to E709																																																																																																					



Date
16/01/23

Inspection	<input checked="" type="checkbox"/>	W <input type="checkbox"/>	R <input checked="" type="checkbox"/>	<input type="checkbox"/>
Discipline: Inspection	<input checked="" type="checkbox"/>			
Expediting	<input type="checkbox"/>			
G. Di Lauro	Date 22/03/2023			
Signature				

Quality Control Manager **BUTTURINI RICCARDO**



Discipline: Inspection W R —
Expediting

G. Di Lavoro
Signature



Date 22/03/2023



INVOICE NO.: A312/A312M

CONTRACT NO.:
EXECUTIVE STANDARD:ASTM

		DESCRIPTION OF GOODS: SEAMLESS STAINLESS STEEL PIPE DELIVERY CONDITION: COLD FINISHED PICKLED&SOLUTION ANNEALED AT 1050 DEG. C COOLING MEDIUM:WATER STEELMAKING:AOD FURNACE NO WELD REPAIR AND MERCURY FREE						Surface condition (表面情况)		Size tolerance (尺寸公差)		Lot No. (批号)	
No.	Heat No. (炉号)	Grade (钢种)	Elements	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	
		Specification	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	≤0.030	8.0-13.0	18.0-20.0	—	—	
1	SI030418	TP304L	Results (Heat)	0.022	0.31	1.35	0.027	0.002	8.05	18.03	—	—	HD2021022060
		Results (product)	0.021	0.32	1.34	0.026	0.003	8.06	18.04	—	—	—	
No.	Size (尺寸)	QTY 数量	T. S. 抗拉伸强度	Y. S. 0.2% 屈服强度	EL. GL=50mm 伸长率 (%)	IGC Test 里氏硬度 (%)	Flattening Test 压扁 (%)	Hardness HB 硬度 (%)	PMI Test 材质鉴定 (%)	Eddy Current Test 漏探 (%)	Hydrostatic Test 水压 (%)	Ultrasonic Test 超声波 (%)	Gradual Pcs
		MTRS (Mpa)	(Mpa)	(Mpa)	(%)	ASTM A262 E	Continuous Heating Furnace		Gradual Pcs	Gradual Pcs	—	—	
1	60.3*3	420	540	235	46	ACCEPTABLE	ACCEPTABLE	145	ACCEPTABLE	—	—	—	—

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

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

ISSUED BY YEHE JIE
JUDGED BY

ADD: 24-32 ZHENBIAO ROAD, YOUNGZHONG TOWN, WENZHOU, ZHEJIANG, CHINA

TEL: 86-577-85982882

FAX: 86-577-28806636

E-mail: YEHJIE@ZJHUAIDI.COMWEBSITE: WWW.ZJHUAIDI.COMTELEGRAM: WWW.ZJHUAIDI.COMTELEPHONE: WWW.ZJHUAIDI.COMTELEFAX: WWW.ZJHUAIDI.COMTELEMAIL: WWW.ZJHUAIDI.COMTELEGRAPH: WWW.ZJHUAIDI.COMTELETELEX: WWW.ZJHUAIDI.COMTELETYPE: WWW.ZJHUAIDI.COMTELEFAX: WWW.ZJHUAIDI.COMTELEGRAPH: WWW.ZJHUAIDI.COMTELETYPE: WWW.ZJHUAIDI.COMTELEFAX: WWW.ZJHUAIDI.COM

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

POS.	TEST No.	HEAT CODE	HEAT NUMBER	Q.TY	DESCRIPTION / MAT. REQUISIT. / TAG N. - ITEM CODE - COMPUTER CODE - UB / ENCLOSURE - NOTES
314	1	59056	E-LJ	521831	5,00 SOCKOLET SW Si3000 A182F316/316L 3/4"x4" / C/C: 12250468 - CR: MR ITEM NO. 9 XH0222 - CC: R13DNL1M/107
315	1	55354	I20N	281487	5,00 SOCKOLET SW Si3000 A182F316/316L 11/2"x4" / C/C: 12250549 - CR: MR ITEM NO. 10 XH0222 - CC: R13DNL1M/107
316	1	57876	I020	280455	5,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x2" / C/C: 12256337 - CR: MR ITEM NO. 11 XH0222 - CC: R13DNL2A/107
317	1	58474		515098	20,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x2" / C/C: 12258338 - CR: MR ITEM NO. 12 XH0222 - CC: R13DNL2A/107
318	1	59959	E-OE	174037	15,00 SOCKOLET SW Si3000 A182F304/304L 11"x2" / C/C: 12256339 - CR: MR ITEM NO. 13 XH0222 - CC: R13DNL2A/107
319	1	58609	I160	514786	10,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x2" / C/C: 12258341 - CR: MR ITEM NO. 14 XH0222 - CC: R13DNL2A/107
320	1	57576	I020	280455	1,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x3" / C/C: 12258414 - CR: MR ITEM NO. 15 XH0222 - CC: R13DNL2A/107
321	1	59554	E-LZ	515098	25,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x3" / C/C: 12258415 - CR: MR ITEM NO. 16 XH0222 - CC: R13DNL2A/107
322	1	59559	E-OE	174037	5,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x3" / C/C: 12258416 - CR: MR ITEM NO. 17 XH0222 - CC: R13DNL2A/107
323	1	58609	I160	514786	5,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x3" / C/C: 12258418 - CR: MR ITEM NO. 18 XH0222 - CC: R13DNL2A/107
324	1	59054	E-LZ	515098	20,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x4" / C/C: 12258477 - CR: MR ITEM NO. 20 XH0222 - CC: R13DNL2A/107
325	1	58602	I210	573084	15,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x4" / C/C: 12258480 - CR: MR ITEM NO. 21 XH0222 - CC: R13DNL2A/107
326	1	59412	E-MJ	526509	1,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x6" / C/C: 12258517 - CR: MR ITEM NO. 22 XH0222 - CC: R13DNL2A/107
327	1	58474		515098	5,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x6" / C/C: 12258518 - CR: MR ITEM NO. 23 XH0222 - CC: R13DNL2A/107
328	1	58449	OJPC		5,00 SOCKOLET SW Si3000 A182F304/304L 11"x8" / C/C: 12258519 - CR: MR ITEM NO. 24 XH0222 - CC: R13DNL2A/107
329	1	58474		515098	10,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x8" / C/C: 12258538 - CR: MR ITEM NO. 25 XH0222 - CC: R13DNL2A/107
330	1	58449	OJPC		1,00 SOCKOLET SW Si3000 A182F304/304L 11"x12" / C/C: 12258539 - CR: MR ITEM NO. 26 XH0222 - CC: R13DNL2A/107
331	1	54285		481150	1,00 SOCKOLET SW Si3000 A182F304/304L 11"x12" / C/C: 12258291 - CR: MR ITEM NO. 27 XH0222 - CC: R13DNL2A/107
332	1	52765		468165	4,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x16" / C/C: 12258314 - CR: MR ITEM NO. 28 XH0222 - CC: R13DNL2A/107
333	1	59472	E-MJ	526509	5,00 SOCKOLET SW Si3000 A182F304/304L 11/2"x20" / C/C: 12258364 - CR: MR ITEM NO. 29 XH0222 - CC: R13DNL2A/107
334	1	52765		468165	6,00 SOCKOLET SW Si3000 A182F304/304L 3/4"x20" / C/C: 12258355 - CR: MR ITEM NO. 30 XH0222 - CC: R13DNL2A/107
335	1	54285		481150	1,00 SOCKOLET SW Si3000 A182F304/304L 11"x20" / C/C: 12258356 - CR: MR ITEM NO. 31 XH0222 - CC: R13DNL2A/107

NOTES

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

CUSTOMER INSPECTOR	THIRD PARTS	QUALITY CONTROL
Laura Paganuzzi		J. Foggnini

CHERO PIPING S.P.A.

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

Materials Heat Number Summary

TEST No.	MATERIAL SPECIFICATION AND GRADE	HEAT NUMBER	BASE MATERIAL CERTIFICATE REF.	STEEL WORKS
39020	ASTM A182-22 F304/F304L	365767	181334	OLARRA
46280	ASTM A182-22 F304/F304L	406025	261114	OLARRA
52765	ASTM A182-22 F304/F304L	468165	371065	OLARRA
54228	ASTM A182-22 F304/F304L	W31TE	2019/015552	ROLDAN
54285	ASTM A182-22 F304/F304L	481150	395730	OLARRA
55556	ASTM A182-22 F304/F304L	279994	MEST/527500/2020	ACCIARIE VALBRUNA
56611	ASTM A182-22 F304/F304L	072541	030226	COGNE ACCIAI SPECIALI
57429	ASTM A182-22 F304/F304L	072896	202100433	COGNE ACCIAI SPECIALI
57876	ASTM A182-22 F304/F304L	280455	MEST/548926/2020	ACCIARIE VALBRUNA
58313	ASTM A182-22 F304/F304L	172917	2021023805	COGNE ACCIAI SPECIALI
58416	ASTM A182-22 F304/F304L	514059	449954	OLARRA
58449	ASTM A182-22 F304/F304L	OJPC	2021/009174	ROLDAN S.A.
58474	ASTM A182-22 F304/F304L	515098	452941	OLARRA
58602	ASTM A182-22 F304/F304L	573084	2015061497	COGNE ACCIAI SPECIALI
58609	ASTM A182-22 F304/F304L	514786	452546	OLARRA
58654	ASTM A182-22 F304/F304L	515098	452941	OLARRA
59202	ASTM A182-22 F304/F304L	173659	2021056230	COGNE
59269	ASTM A182-22 F304/F304L	0TNH	2021/012547	ROLDAN S.A.
59345	ASTM A182-22 F304/F304L	285338	MEST/853112/2022	ACCIARIE VALBRUNA
59346	ASTM A182-22 F304/F304L	287142	MEST/863113/2022	ACCIARIE VALBRUNA
59412	ASTM A182-22 F304/F304L	526509	472548	OLARRA
59538	ASTM A182-22 F304/F304L	174577	2022006080	COGNE
59586	ASTM A182-22 F304/F304L	174578	2022002830	COGNE
59752	ASTM A182-22 F304/F304L	174248	2021057503	COGNE
59790	ASTM A182-22 F304/F304L	287723	MEST/843375/2022	ACCIARIE VALBRUNA
59881	ASTM A182-22 F304/F304L	272546	2020156559	COGNE
59959	ASTM A182-22 F304/F304L	174037	2021048041	COGNE
60059	ASTM A182-22 F304/F304L	1VZB	2022/005128	ROLDAN S.A.
60212	ASTM A182-22 F304/F304L	538645	492348	OLARRA
60858	ASTM A182-22 F304/F304L	1RWL	2022/012165	ROLDAN S.A.
48676	ASTM A182-22 F316/F316L	273641	MEST/95863/2017	ACCIARIE VALBRUNA
55354	ASTM A182-22 F316/F316L	281487	MEST/502341/2019	ACCIARIE VALBRUNA
56932	ASTM A182-22 F316/F316L	043593	072865	COGNE ACCIAI SPECIALI
56450	ASTM A182-22 F316/F316L	284568	MEST/7765246/2021	ACCIARIE VALBRUNA

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NOTES

CUSTOMER INSPECTOR

THIRD PARTS

QUALITY CONTROL

Laura Paganuzzi

J. Fogolin

CHERO PIPING S.p.A.

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



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

SHEET
7/25

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

CUSTOMER
TECNIMONT S.P.A.

CUSTOMER ORDER REF.
7500107587 - 25/10/2022

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

Parts and Materials Inspection Certificate

ASTM A182-22 F304/F304L

Ladle Analysis	Heat Number	39020	46280	52765	54228	54285	55556	56611	57429	57876	58416	58449	58474	58602
	C %	0.017	0.022	0.023	0.027	0.016	0.014	0.016	0.015	0.025	0.015	0.016	0.018	0.014
	Mn %	1.580	1.430	1.470	1.461	1.470	1.780	1.360	1.310	1.800	1.320	1.450	1.435	1.470
	Si %	0.440	0.310	0.320	0.380	0.430	0.540	0.340	0.340	0.560	0.340	0.460	0.488	0.400
	P %	0.037	0.039	0.037	0.031	0.038	0.030	0.031	0.034	0.033	0.033	0.033	0.033	0.035
	S %	0.029	0.028	0.029	0.028	0.029	0.027	0.027	0.027	0.023	0.027	0.028	0.026	0.029
	Cr %	18.100	18.000	18.050	18.70	18.000	18.70	18.410	18.230	18.180	18.000	18.145	18.110	18.500
	Mo %	8.050	8.100	8.090	8.060	8.130	8.060	8.120	8.390	8.130	8.150	8.120	8.143	8.340
	Ni %	8.050	8.100	8.090	8.060	8.130	8.060	8.120	8.390	8.130	8.150	8.120	8.100	8.300
	Cu %													0.240
Tensile Test	Test Temperature °C	+20	+20	+20	+20	+23	+20	+20	+20	+20	+20	+20	+23	+23
	Tensile Strength MPa	640	635	652	637	597	586	641	625	670	624	618	622	578
	Yield Strength MPa (0.2%)	335	324	365	339	284	320	303	296	452	290	351	243	304
	Elongation %	55.00	53.00	52.80	54.00	56.00	53.00	57.50	59.70	45.00	57.20	57.00	55.50	59.40
	Reduction Area %	75.00	73.00	73.80	70.00	74.00	71.00	76.00	79.20	68.00	75.20	72.00	72.00	80.00
	Scale	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW
	Value 1	182	179	186	159	173	177	184	182	181	187	174	158	167
	Value 2	185	180	188	166	164	180	186	183	182	180	175	162	180
	Value 3	188	179	190	158	169	184	186	181	185	181	173	162	184
Durezza Media	Average Hardness	185	179.333	188.000	161	'68.667	'80.333	185.333	182.000	182.667	174.000	180.667	163.333	182.000
Heat Treatment	Type	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.	SOL. ANN.				
	Holding Temperature °C	-1.050	+1.080	+1.050	+1.080	+1.080	+1.080	+1.070	+1.050	+1.070	+1.050	+1.060	+1.050	+1.040
	Holding Time min					Min 1h/inch	Water	Water	Water	Water	Water	Min 1h/inch	Min 1h/inch	Min 1h/inch
	Cooling Media	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water

BUREAU VERITAS	
ITALY	
2 nd PARTY INSPECTION ON BEHALF OF	
✓ C	□
NOTED	REVIEWED
SURVEYOR: S. NEGRINI	
DATE 15 DEC 2022	

NOTES
A182 F316H: GRAIN SIZE < 6

CUSTOMER INSPECTOR
Laura Paganuzzi

THIRD PARTS

QUALITY CONTROL

J. Foggnini
CHERO PIPING S.P.A.

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

ASTM A182-22 F304/F304L

Ladle Analysis	Heat Number	58609	59054	59202	59289	59345	59346	59412	59538	59586	59752	59790	59881	59959
	C %	0.020	0.018	0.018	0TNH	0.024	0.018	0.019	0.020	0.019	0.017	0.019	0.024	0.025
	Mn %	1.470	1.350	1.471	1.770	1.770	1.770	1.460	1.320	1.330	1.260	1.770	1.340	1.350
	Si %	0.430	0.410	0.430	0.520	0.520	0.520	0.450	0.380	0.370	0.400	0.390	0.450	0.410
	P %	0.037	0.035	0.029	0.029	0.031	0.030	0.038	0.031	0.031	0.029	0.031	0.031	0.032
	S %	0.028	0.028	0.026	0.022	0.029	0.022	0.029	0.028	0.027	0.024	0.026	0.020	0.023
	Cr %	18.050	18.110	18.180	18.040	18.400	18.040	18.130	18.220	18.310	18.350	18.270	18.250	18.200
	Mo %	0.000	0.000	0.382	0.382	0.382	0.382	0.382	0.450	0.480	0.430	0.370	0.450	0.533
	Ni %	8.080	8.030	8.060	8.055	8.110	8.140	8.070	8.120	8.160	8.160	8.140	8.180	8.180
	Cu %	0.087	0.091	0.080	0.089	0.076	0.087	0.089	0.087	0.081	0.082	0.081	0.084	0.085
Tensile Test	Test Temperature °C	+20	-20	+20	+20	+20	+20	+20	+20	+20	+20	+20	+20	+20
	Tensile Strength MPa	632	620	619	431	632	615	666	613	611	623	615	620	625
	Yield Strength MPa (0.2%)	320	348	290	375	332	374	420	282	277	284	308	379	281
	Elonation %	52.00	55.00	53.60	56.00	52.00	50.00	48.80	53.80	51.50	56.40	52.00	59.30	55.50
	Reduction Area %	71.00	74.00	75.20	80.40	74.00	67.00	70.70	74.20	75.50	78.30	68.00	79.30	78.50
	Scale HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW	HBW
Hardness Test	Value 1	180	169	184	177	169	200	170	171	169	180	186	180	177
	Value 2	177	170	168	185	180	174	200	172	177	184	189	180	179
	Value 3	179	173	175	188	180	175	208	166	178	177	186	192	184
	Average Hardness	178.667	170.667	169.667	185.667	179.000	172.667	202.667	168.667	173.667	174.333	183.333	189.000	181.333
Heat Treatment	Type	SCL ANN.	SOL ANN.	<150										
	Heating Rates °C/h		<150											
	Holding Temperature °C	+1050	+1.080	+1.080	+1.040	+1.040	+1.040	+1.060	+1.080	+1.080	+1.080	+1.080	+1.080	+1.080
	Holding Time h:min	Min 1h:min	1:00											
	Cooling Media	WATER	WATER											

BUREAU VERITAS	
ITALY	
2 nd PARTY INSPECTION ON BEHALF OF	
TCS	
WITNESSED	NOTED
REVIEWED	
SURVEYOR: S. NEGRINI	
D.O.T.E. 15 DEC 2022	

NOTES

A182 F316H: GRAIN SIZE < 6

CUSTOMER INSPECTOR	THIRD PARTS	QUALITY CONTROL
Laura Paganuzzi		

J. Foggnini

CHERO PIPING S.p.A.

CERTIFICATE NR.	CE/2022/1606	Rev. 0	DATE	13/12/2022	CUSTOMER ORDER REF.	7500107587 - 25/10/2022
INTERNAL ORDER NR.	OC/2022/1021		DATE	26/10/2022	CUSTOMER	TECNIMONT S.p.A.

SHEET
2025

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

Serial Number	521831-0001
Mn %	1,501
Cr %	16,213
Mo %	2,008
Ni %	10,129

PML Test - Position 313: STOCKOLET SW S/3000 A182F316/316L 1"x3"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F316/F316L	284588	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371

Serial Number	284588-0001
Mn %	1,529
Cr %	17,405
Mo %	2,000
Ni %	10,000

PML Test - Position 314: STOCKOLET SW S/3000 A182F316/316L 3/4"x4"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F316/F316L	521831	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371

Serial Number	521831-0001
Mn %	1,548
Cr %	17,76
Mo %	2,019
Ni %	10,485

PML Test - Position 315: STOCKOLET SW S/3000 A182F316/316L 11/2"x4"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F316/F316L	281487	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371

Serial Number	281487-0001
Mn %	1,484
Cr %	17,694
Mo %	2,114
Ni %	10,637

PML Test - Position 316: STOCKOLET SW S/3000 A182F304/304L 1 1/2"x2"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L	280455	CHERO-QA-PMI-8	ASTM E572	NITON XL2-SN:95371

Serial Number	280455-0001
Mn %	1,754
Cr %	18,460
Mo %	8,248
Ni %	

PML Test - Position 317: STOCKOLET SW S/3000 A182F304/304L 3/4"x2"

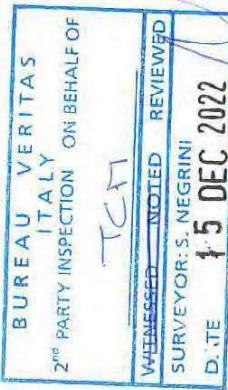
Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L				

Serial Number	
Mn %	
Cr %	
Mo %	
Ni %	

PML Test - Position 318: STOCKOLET SW S/3000 A182F304/304L 1 1/2"x2"

Material Spec. and Grade	Heat Number	Procedure Number	Applicable Standard	Instrument
ASTM A182-22 F304/F304L				

Serial Number	
Mn %	
Cr %	
Mo %	
Ni %	



NOTES

QUALITY CONTROL	
Customer Inspector	Third Parts

Customer Inspector	Third Parts
--------------------	-------------

J. Foggnini
Laura Paganuzzi
CHERO PIPING S.p.A.

CERTIFICATE NR. CE/2022/1606	Rev. 0	DATE 13/12/2022	CUSTOMER ORDER REF. 7500107587 - 25/10/2022
INTERNAL ORDER NR. OC/2022/1021		DATE 26/10/2022	CUSTOMER TECNIMONT S.P.A.

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

Material Spec. and Grade ASTM A182-22 F304L	Heat Number 515098	Procedure Number CHERO-QA-PMI-8	Applicable Standard ASTM E572	Quantity Inspected % 10	Instrument NITON XL2-SN:95371
Mn %	1.423	515098-0002	1.455		
Cr %	18.000		18.000		
Ni %	8.068		8.000		

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

Material Spec. and Grade ASTM A182-22 F304L	Heat Number 174037	Procedure Number CHERO-QA-PMI-8	Applicable Standard ASTM E572	Quantity Inspected % 10	Instrument NITON XL2-SN:95371
Serial Number	174037-0001	174037-0002			
Mn %	1.317	1.319			
Cr %	18.000	18.000			
Ni %	8.436	8.000			

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

Material Spec. and Grade ASTM A182-22 F304L	Heat Number 514786	Procedure Number CHERO-QA-PMI-8	Applicable Standard ASTM E572	Quantity Inspected % 10	Instrument NITON XL2-SN:95371
Serial Number	514786-0001	514786-0002			
Mn %	1.539				
Cr %	18.000				
Ni %	8.173				

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

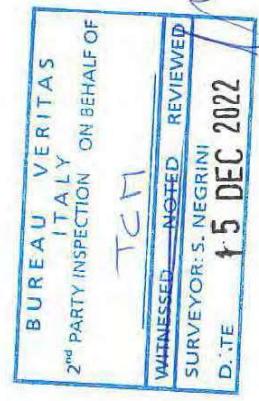
Material Spec. and Grade ASTM A182-22 F304L	Heat Number 280455	Procedure Number CHERO-QA-PMI-8	Applicable Standard ASTM E572	Quantity Inspected % 10	Instrument NITON XL2-SN:95371
Serial Number	280455-0001	280455-0002			
Mn %	1.846				
Cr %	18.000				
Ni %	8.120				

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

Material Spec. and Grade ASTM A182-22 F304L	Heat Number 515098	Procedure Number CHERO-QA-PMI-8	Applicable Standard ASTM E572	Quantity Inspected % 10	Instrument NITON XL2-SN:95371
Serial Number	515098-0001	515098-0002	515098-0003		
Mn %	1.439	1.526	1.484		
Cr %	18.249	18.778	18.460		
Ni %	8.000	8.000	8.000		

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

NOTES	CUSTOMER INSPECTOR	THIRD PARTS	QUALITY CONTROL
	Laura Paganuzzi		J. Fogorini





Alliance for success

Contract : 22006

Material : Stainless Steel 304, 316L-317

Spec : 6C4-M

Drawing : 2121-JA91F62-10-SF04-00480

Spool : 00480

Revision : 00

Piece Mark : 2121-JA91F62-10-SF04-00480

Project : ALBA

Welding and QC Report Per Spool

Drawing : 2121-JA91F62-10-SF04-00480

Spool : 00480

Revision : 00

Piece Mark : 2121-JA91F62-10-SF04-00480

Project : ALBA

Weld data

Control

Weld No.	Type	Dia	Sch	Weld Proc.	1st Pass	1st MTR	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	BHN	Date BHN	PWHT	Date PWHT	Ferrite	Date Ferrite	Ultra	Date Ultra	Xray	Date Xray
0020	BW	2	S10S	MW.26_BW	AE	03/04/2024	4712055	AE	03/04/2024	4712055	000495	22/04/2024	000070	24/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024
0021	SOL	0.75	S10S	MW.26_SBR	AE	03/04/2024	4712055	AE	03/04/2024	4712055	000495	22/04/2024	000070	24/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024		
0023	BW	2	S10S	MW.26_BW	AE	03/04/2024	4712055	AE	03/04/2024	4712055	000495	22/04/2024	000070	24/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024	000423	26/04/2024		

Welding

Control																												
Weld No.	Type	Dia	Sch	Weld Proc.	1st Pass	1st MTR	Final Pass	Final MTR	Dim	Date DIM	Visual	Date Visual	PT	Date PT	MT	Date MT	PMI	Date PMI	BHN	Date BHN	PWHT	Date PWHT	Ferrite	Date Ferrite	Ultra	Date Ultra	Xray	Date Xray

ON BEHALF OF TCM \ R

QA\ V. Matici

04.07.2024

Notes:

Boccard Portugal QC	Client
	Sergio Morales Date: 18-06-24



Shop QC Inspection Report

P2308-000517

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

Job number: P2308S
 Spool N°: 00480
 Piece Mark: 2121-IA91F62-10-SP04-00480

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

Control Date: 22/04/2024

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		X
PMI - Welds identified as per Procedure / Instruction	X		X
FE (Ferrite test) - Welds identified as per Procedure / Instruction		X	
RT - Welds identified as per Procedure / Instruction	X		X
UT - Welds identified as per Procedure / Instruction		X	
Spool identified (by marker) as per Procedure / Instruction (Job number, sheet number and Paint type if required)	X		X
Hydro - Spool identified as per Procedure / Instruction		X	
Cleanliness - Cleaned inside free of slag, scale, sand, weld spatter, cutting chips, etc. and blow out by compressed air	X		X

Comments:

Performed by: RODRIGUES, JOSE Date: 22/04/2024 Signature 	QA/QC Inspection: RAIMUNDO, MARIANA Date: 09/05/2024 15:52:08 Signature 	Customer Inspection: Sergio Morales Date: 18-06-24 
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ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



Visual Examination Report (Welds)

P2308-000495

Contract : P2308
 Client : NERVION
 Project : ALBA
 Job number: P2308S
 Spool N°: 00480
 Piece Mark: 2121-IA91F62-10-SP04-00480

Material: Stainless Steel 304, 316, 317
 Procedure & Instructions: 4274-LZ-VD-FW31010370QAC04 - Rev: 1
 Testing Date: 22/04/2024

Remarks: The results refer to the controlled items	Unacceptable indications for welding
ACCEPTANCE CRITERIA : ASME B31.3	
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	QA/QC						
0020	2.0000 S10S BW-Butt weld Straight (MW_26_BW)	AE	21		X			Direct	
0021	0.7500 S10S SOL-Socket to Header Weld (MW_26_SBR)	AE	21		X			Direct	
0023	2.0000 S10S BW-Butt weld Straight (MW_26_BW)	AE	21		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	Boccard Portugal	AQ/QC	QA/QC Inspection: RAIMUNDO, MARIANA				Customer Inspection:	Sergio Morales
	Date: 22/04/2024			Date: 09/05/2024 15:52:08				Date:	08.07.2024
	Signature			Signature				Signature	Date: 18-06-24

ON BEHALF OF TCM \ R \ W
 OAE \ I. Matici
 08.07.2024



Liquid Penetrant Examination Report

P2308-0000070

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

Job number: P2308S

Spool N°: 00480

Material: Stainless Steel 304, 3T6, 317

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

Piece Mark: 2121-IA91F62-10-SP04-00480

Testing Date: 24/04/2024

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	1150A (08/2024)	1151A (10/2025)	1332A (12/2025)	-
Weld / Item No.	Identification	Welder	Tem (°F/°C) Penetrant	Dwell Time (min) Developer Lighting
0021	0.7500 S10S SOL-Socket to Header Weld (MW.26_SBR)	AE	19 20 m	10 m - -

Sketch / Photo:

		Defects				Customer Inspection:			
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:	RUI (N2 PT/RT), FIGUEIRAS(QA)	QA/QC Inspection:	RAIMUNDO, MARIANA	Date:	24/04/2024	Sergio Morales			
						Signature		Date:	18-06-24

ON BEHALF OF TCM \ R
QA E.I. Matici
04.07.2024

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

14/05/2024 11:41:42
Page 1 / 1



Positive Material Identification Report (PMI)

P2308-000423

Client : NERVION
Contract : P2308 / Project : ALBA

Job number: P2308S

Spool N°: 00480

Piece Mark: 2121-IA9 JF62-10-SPP04-00480

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: 26/04/2024

Weld / Item No	Description	Reading	Chemical Elements						Accepted	Rejected	Comments	
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V
0020	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	121	0	0	0	7	69	1	19	0	0	X
0021	0.7500 S10S SOL-Socket to Header Weld (MW.26_SBR)	119	0	0	0	7	71	1	17	0	0	X
0023	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	123	0	0	0	8	68	2	18	0	0	X
1.1	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (A-6499)	122	0	0	0	8	70	1	17	0	0	X
2.1	2.0000 S10S TEE, SEAMLESS, A403-WP304L (S1030418)	119	0	0	0	7	71	1	17	0	0	X
3.1	2.0000 NA 0.7500 NA SOCKOLET, 3000#, A182-F304L (515998)	120	0	0	0	8	69	1	17	0	0	X
5.1	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (DA182)	118	0	0	0	7	70	1	17	0	0	X

ON BEHALF OF TCM \ R
QA E.V. Matici
04.07.2024

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

Date: 26/04/2024
Signature

Customer Inspection:
Date: *Sergio Morales*
Signature

Date: 18-06-24



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	121
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.36
Sequence	Final
Alloy1	321SS : 2.25
Alloy2	No Match : *2.44
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.098
Sn	< LOD	:	0.112
Pd	< LOD	:	0.083
Ag	< LOD	:	0.188
Al	< LOD	:	80.000
Mo	0.230	±	0.034
Nb	< LOD	:	0.021
Zr	< LOD	:	0.015
Bi	< LOD	:	0.043
Pb	< LOD	:	0.025
Se	< LOD	:	0.025
W	< LOD	:	0.194
Zn	< LOD	:	0.063
Cu	0.467	±	0.200
Ni	7.779	±	0.612
Co	< LOD	:	1.039
Fe	69.400	±	0.981
Mn	1.578	±	0.440
Cr	19.140	±	0.575
V	< LOD	:	0.309
Ti	0.966	±	0.297

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	119
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.37
Sequence	Final
Alloy1	301SS : 0.64
Alloy2	No Match : 1.67
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.105
Sn	< LOD	:	0.126
Pd	< LOD	:	0.093
Ag	< LOD	:	0.162
Al	< LOD	:	80.000
Mo	< LOD	:	0.021
Nb	< LOD	:	0.015
Zr	< LOD	:	0.012
Bi	< LOD	:	0.043
Pb	< LOD	:	0.041
Se	< LOD	:	0.024
W	< LOD	:	0.255
Zn	< LOD	:	0.086
Cu	< LOD	:	0.350
Ni	7.678	±	0.655
Co	< LOD	:	1.128
Fe	71.724	±	1.046
Mn	1.676	±	0.465
Cr	17.694	±	0.590
V	< LOD	:	0.339
Ti	< LOD	:	0.473

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	123
Mode	ALLOY
Time	2024-04-26 09:46
Duration	3.39
Sequence	Final
Alloy1	304SS : 1.61
Alloy2	No Match : 2.39
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.090
Sn	< LOD	:	0.101
Pd	< LOD	:	0.083
Ag	< LOD	:	0.165
Al	< LOD	:	80.000
Mo	0.078	±	0.020
Nb	< LOD	:	0.020
Zr	< LOD	:	0.005
Bi	< LOD	:	0.002
Pb	< LOD	:	0.037
Se	< LOD	:	0.016
W	< LOD	:	0.165
Zn	< LOD	:	0.089
Cu	< LOD	:	0.340
Ni	8.929	±	0.624
Co	< LOD	:	1.037
Fe	68.803	±	0.942
Mn	2.226	±	0.443
Cr	18.875	±	0.546
V	< LOD	:	0.274
Ti	< LOD	:	0.303

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	122
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.38
Sequence	Final
Alloy1	321SS : 0.45
Alloy2	No Match : 1.74
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.122
Sn	< LOD	:	0.130
Pd	< LOD	:	0.107
Ag	< LOD	:	0.254
Al	< LOD	:	80.000
Mo	0.106	±	0.029
Nb	< LOD	:	0.024
Zr	< LOD	:	0.009
Bi	< LOD	:	0.003
Pb	< LOD	:	0.069
Se	< LOD	:	0.009
W	< LOD	:	0.272
Zn	< LOD	:	0.087
Cu	< LOD	:	0.455
Ni	8.880	±	0.776
Co	< LOD	:	1.267
Fe	69.636	±	1.174
Mn	1.819	±	0.533
Cr	18.293	±	0.671
V	< LOD	:	0.369
Ti	< LOD	:	0.512

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	119
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.37
Sequence	Final
Alloy1	301SS : 0.64
Alloy2	No Match : 1.67
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.105
Sn	< LOD	:	0.126
Pd	< LOD	:	0.093
Ag	< LOD	:	0.162
Al	< LOD	:	80.000
Mo	< LOD	:	0.021
Nb	< LOD	:	0.015
Zr	< LOD	:	0.012
Bi	< LOD	:	0.043
Pb	< LOD	:	0.041
Se	< LOD	:	0.024
W	< LOD	:	0.255
Zn	< LOD	:	0.086
Cu	< LOD	:	0.350
Ni	7.678	±	0.655
Co	< LOD	:	1.128
Fe	71.724	±	1.046
Mn	1.676	±	0.465
Cr	17.694	±	0.590
V	< LOD	:	0.339
Ti	< LOD	:	0.473

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	120
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.18
Sequence	Final
Alloy1	321SS : 0.69
Alloy2	No Match : 2.43
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.108
Sn	< LOD	:	0.145
Pd	< LOD	:	0.100
Ag	< LOD	:	0.185
Al	< LOD	:	80.000
Mo	0.411	±	0.051
Nb	< LOD	:	0.027
Zr	< LOD	:	0.013
Bi	< LOD	:	0.050
Pb	< LOD	:	0.050
Se	< LOD	:	0.032
W	< LOD	:	0.220
Zn	< LOD	:	0.051
Cu	0.603	±	0.249
Ni	8.542	±	0.716
Co	< LOD	:	1.193
Fe	69.968	±	1.088
Mn	1.806	±	0.493
Cr	17.463	±	0.614
V	< LOD	:	0.343
Ti	< LOD	:	0.456

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	118
Mode	ALLOY
Time	2024-04-26 09:45
Duration	3.16
Sequence	Final
Alloy1	301SS : 1.58
Alloy2	304SS : 1.68
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.104
Sn	< LOD	:	0.136
Pd	< LOD	:	0.087
Ag	< LOD	:	0.162
Al	< LOD	:	80.000
Mo	0.437	±	0.047
Nb	< LOD	:	0.023
Zr	< LOD	:	0.010
Bi	< LOD	:	0.011
Pb	< LOD	:	0.006
Se	< LOD	:	0.017
W	< LOD	:	0.163
Zn	< LOD	:	0.075
Cu	0.620	±	0.220
Ni	7.954	±	0.623
Co	< LOD	:	1.018
Fe	70.778	±	0.958
Mn	1.876	±	0.450
Cr	17.891	±	0.556
V	< LOD	:	0.292
Ti	< LOD	:	0.341

Supervised By:

Sergio Morales

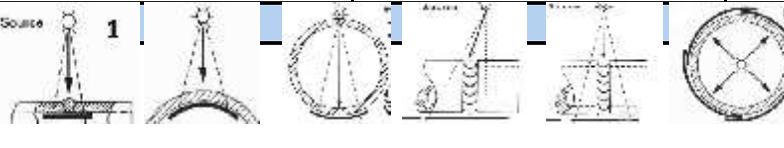


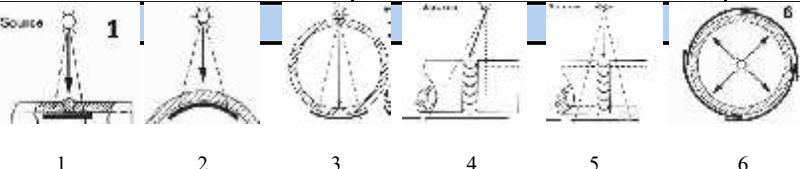
Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024

Contract : P2308	Spool N°: P2308S-00480											
Client : NERVION	Isometric N°: 2121-IA91F62-10											
Project : ALBA	Piece Mark: 2121-IA91F62-10-SP04-00480											
Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:									
4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		24/04/2024	Stainless Steel 304, 316, 317									
Equipment	Normal Fluid 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: 2x0.875	Class: C3	Sensitivity: 4	Temperature: 29									
Activity (Ci): 21.2	Lead Sheets: 0,5	Ø of visible wire/hole 0,0063(0,16)	Developer: G135									
Films/Casette: Single	Testing Technique	Indication Codes (ISO 6520)	Fixer: G335									
		EP-Excess Penetration (504) FA-Film Artifact BB-Back Bevel BW-Back Weld BT-Burn Through (510) C-Cap CP-Clustered Porosity (2012) CL-Cold Lap CR-Crack CC-Crater Crack (104) DI-Dimensional	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 V-Valley in Cap W-Wire WH-Worm Hole (2016) S-Slag (301) XN-Xray Film Non-Conform									
General Remarks		Notations / Symbology										
The results refer to the controlled items	- Good / Acceptable + Repair = Good after Repair	x Acceptable after Repair	SFD = Source Film Distance	SOD = Source Object Distance								
Weld No.	Weld Desc. (WPS)	Welder	Position	SFD	SOD	Weld Reinf	Testing Technique	Exposure Time	Density	IQI	Indication Code	Decision Remarks
0023	2.0000 S10S BW (MW.26_BW)	AE	A	500	440	NA	4	600	3.3	W4		- RX245
0023	2.0000 S10S BW (MW.26_BW)	AE	B	500	440	NA	4	600	3.4	W4		- RX245

Contract : P2308	Spool N°: P2308S-00480																																
Client : NERVION	Isometric N°: 2121-IA91F62-10																																
Project : ALBA	Piece Mark: 2121-IA91F62-10-SP04-00480																																
Procedure/ Instruction:	Acceptance Criteria:	Testing Date:	Material:																														
4274-LZ-VD-FW31010370QAC02 - RevA\$ME B.31.3 – Table 341.3.2		24/04/2024	Stainless Steel 304, 316, 317																														
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Source Dim: 2x0.875	Class: C3	Sensitivity: 4	Temperature: 29																														
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Films/Casette: Single	Testing Technique	Indication	Codes (ISO 6520)																														
		<table border="1"> <tr> <td>--</td> <td>EP-Excess Penetration (504)</td> <td>SB-Suck Back</td> </tr> <tr> <td>BB-Back Bevel</td> <td>FA-Film Artifact</td> <td>ST-Sugared Tack</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-X-ray Film Non-Conform</td> </tr> </table>		--	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-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-X-ray Film Non-Conform
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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:	24/04/2024	24/04/2024	09/05/2024 15:52:08																														
Signature:				Sergio Morales Date: 18-06-24																													

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



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

Job number: P2308S
Spool N°: 00480
Piece Mark: 2121-IA91F62-10-SP04-00480

Procedure/Instruction: 23A008/010 Rev.0

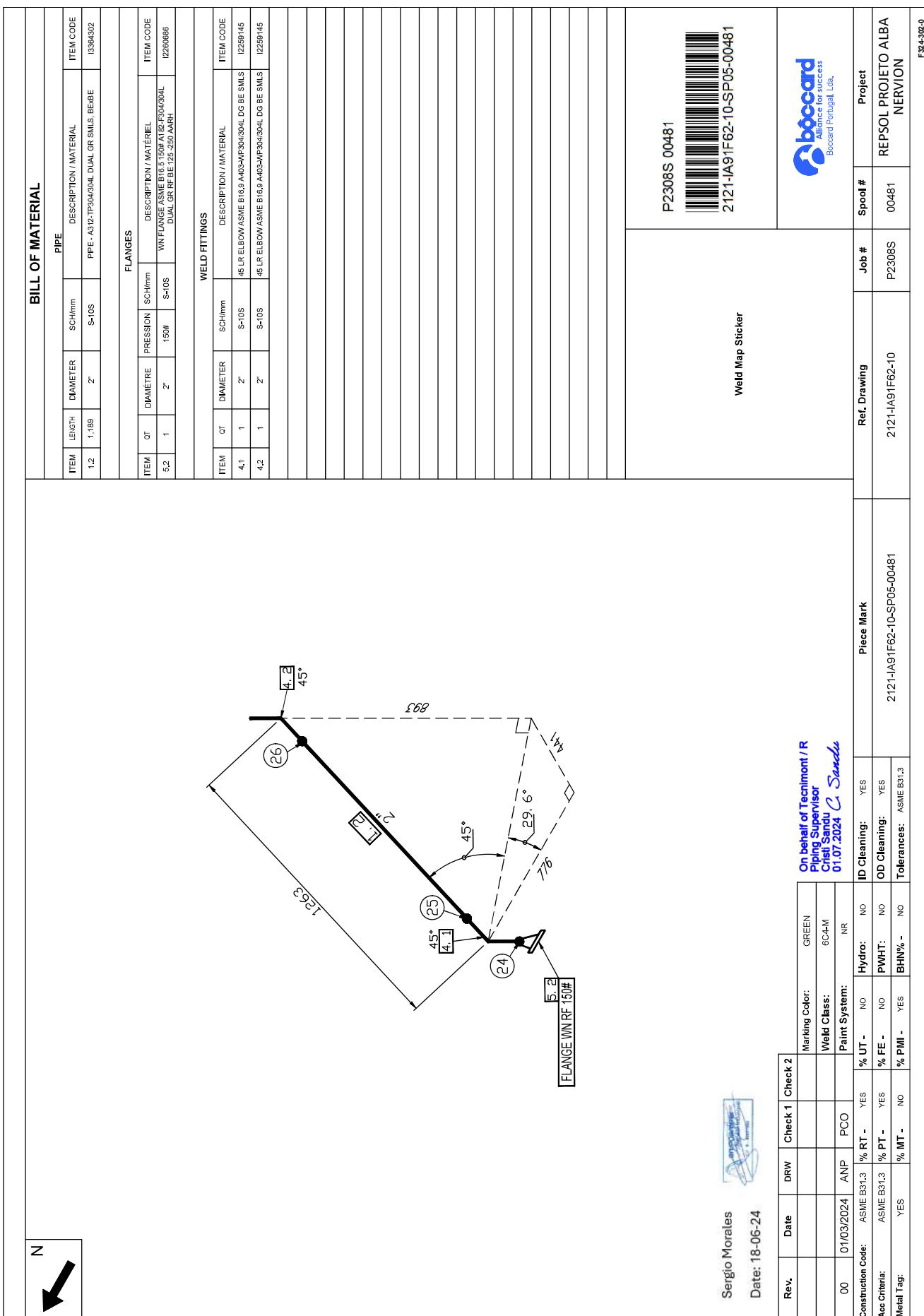
Pick Tape	Clean Spray	Clean Wipes
Brand: Nitty Gritty Pick&Clean	Brand: Nitty Gritty Pick&Clean	Brand: Nitty Gritty Pick&Clean
Batch: N/A	Batch: N/A	Batch: N/A
Opening Date: 07/01/2024	Opening Date: 07/01/2024	Opening Date: 07/01/2024
Expiration Date: 07/05/2024	Expiration Date: 07/05/2024	Expiration Date: 07/05/2024

Weld No.	Pickling and Cleaning			Accepted	Rejected
	Pick tape duration (at least 10/15 min)	Cleaning (with spray) and drying (with blotting paper)	OR		
0020	15 min	OK		<input checked="" type="checkbox"/> X	<input type="checkbox"/>
0021	15 min	OK		<input checked="" type="checkbox"/> X	<input type="checkbox"/>
0023	15 min	OK		<input checked="" type="checkbox"/> X	<input type="checkbox"/>

Performed by: LOPES, EDUARDO Signature	QA/QC Inspection: RAIMUNDO, MARIANA Signature	Customer Inspection: Sergio Morales Date: 18-06-24
---	--	--

ON BEHALF OF TCM \ R
QAE \ I. Matici
04.07.2024





Spool Material List

Contract : P2308

Client NERVION

Job : P2308S

Project ALBA

Job	Spool	Piece Mark	Drawing	Rev						
Item No	Qty	Size1	Sch1	Size2	Sch2	Description	Heat No	Unit	Weight	Kgs
Tag No							MTR No			
ID No							Folder No			
P2308S	00481	2121-IA91F62-10-SP05-00481	2121-IA91F62-10	00						
1.2	1,189	2.0000	S10S	0.0000	NA	PIPE, SEAMLESS, A312-TP304L	63981 0101	3,93	4,67	
40391										
5.2	1	2.0000	S10S	0.0000	NA	WN FLG, RAISED FACE, 150#, A182-F304L	DA182 0117	2,72	2,72	
37867										
4.1	1	2.0000	S10S	0.0000	NA	45 ELL, SEAMLESS, A403-WP304L	S1030418 0014	0,24	0,24	
42790										
4.2	1	2.0000	S10S	0.0000	NA	45 ELL, SEAMLESS, A403-WP304L	S1030418 0014	0,24	0,24	
42790										

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



Number of Items : 4

Total Weight : 7,87

Signature	QA	Client
	Date	Date
	 QA / QC	Sergio Morales  Date: 18-06-24



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 % / 1.0 % PROOF STRENGTH (MPa) AS per ASTM A370 - 2021	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/DRIFT EXPANSION TEST AS PER EN ISO 845 : 1998 OTHER DESTRUCTIVE TEST	
REQUIRED	205 (min.)	205 (min.) / 230 (min.)	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	NOT APPLICABLE
63981	326	336 / 372	632	46	44	TESTED SAMPLE = 03 NOS. RESULT FOUND SATISFACTORY	60- 65 (HRB)	SATISFACTORY	CLIENT / CLIENT REPRESENTATIVE
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						





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

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 END CLIENT	: M/s COMMERCIALE TUBI ACCIAIO S.P.A. -	CERTIFICATE NO. DATE	: USAW/CTA/327/T/TC22/01 Rev 00 28/05/2022
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 COLD FINISHED SEAMLESS PIPE HYDRO TEST (ASTM A99 : 2018)	SURFACE CONDITION EACH PIPE PICKLED & PASSIVATED, FREE FROM RUST, DIRT & FOREIGN PARTICLES	PMI EACH PIPE
REQUIREMENT	EACH PIPE TESTED AT MIN 11.0 MPa, HOLDING TIME 5 SEC MIN. CHLORIDE CONTENT OF HYDRO TEST WATER ≤ 50 ppm	EACH PIPE	VISUAL & DIMENSION INSPECTION EDDY CURRENT UT
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	NON DESTRUCTIVE TEST NOT APPLICABLE 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 15156-3 : 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		
STATEMENT OF COMPLIANCE: 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	CLIENT / CLIENT REPRESENTATIVE
Format No:-JSW/SMG/SMLS/QATR-17	Version 2.0	Date: 01/01/2022	



ORIGINAL

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

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												
(A06) CUSTOMER : 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 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & 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 2" WNRF S10S 150#						(B08) QUANTITY(PCS)		(B07) HEAT NUMBER 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%									
Req	Mpa	Mpa	Mpa	Lo=4D	%	BHN-1	BHN -2	AVG.	1	2	3	AVG
T	515 MIN	205 MIN	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)





VIRGILIO CENA & FIGLI S.p.A.

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

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

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

INSPECTION CERTIFICATE EN 10204/3.1												TECNIMONT SPA											
												CE23002460_3.1_01											
Customer Order 7500107591 25.10.22-Proj.4274												Your Item Ref. Sines 262 - I2259141											
Article/Specification Seamless elbow WP304/304L-S ASTM/ASME A/SA-403-17 ASME B16.9/18												Marking IT - CENA - SA 403 WP304/304L-S - Heat Nr - Od. x Th.											
Heat Treatment Cold formed - Solution annealed at 1050°Cx1,5/mm												Brand of manufacturer CENA											
Extent of material delivered Our pos. OV22001749/2560000												Quantity NR 10 Article LR 45° 2" 40s											
Heat S1030418						Marking code S1030418			Certificate 21-03-018 *						Supplier HUADI STEEL GROUP								
Raw material Seamless pipe ASTM/ASME A/SA 312 Gr.P304																							
Results of chemical analysis %												Ceq: C+ (Mn/6) + (Cr+Mo+V)/5 + (Cu+Ni)/15											
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															
Mechanical Tests: On fittings												Impact Test - Specimen = KV											
Specimen	Position	Direction	Temperature °C	Dimension mm	Yield Point N/mm²	Tensile Strength N/mm²	Elongation % 2"	Ys Ts	Hardness HB 10% of batch 3 tests min.	Position	Direction	Temperature °C	Dimension mm	Obtained energy Joule				Shear Area %					
														Values		Average		Values					
														0058117.0.0 A L 20 235 540 46 0,44 143-145									
The pipes are tested on tightness.																							
Steel making process:																							
Specimen position: A=neutral axis of base material; W=weld; E=extrados of base material; I=intrados of base material; Z=heat affected zone																							
Results of visual and dimensional inspection of fittings: SATISFACTORY Controllo visivo e dimensionale dei pezzi speciali / Results of visual and dimensional inspection of fittings: Soddisfacente / Satisfactory Il materiale fornito è in accordo ai requisiti dell'ordine / The product supplied is in compliance with the requirements of the order Documento redatto a fronte delle prove eseguite o della documentazione in ns.possesso. / Edited document on the strength of the made examinations or our own documents. Prodotti decapati e passivati / Products pickled and passivated Controllo PMI / Alloy steel verification (PMI):soddisfacente / satisfactory Prova di corrosione intergranulare secondo ASTM A 262 E / IGC test according to ASTM A262 E: soddisfacente/satisfactory — La società VIRGILIO CENA S.p.A. garantisce che tous le produits, objet du certificat susdit, respectent en leur totalité les spécifications de l'article 15 de l'Arrêté Ministériel du 24 mars 1978. Materiale esente da radiazioni / Material radiation free Material compliant with PED2014/68/EU																							

ITEx Quality Services

Date 16/01/23

Discipline: Inspection W R —
Inspection
Expediting

G. Di Layro
Signature
Date 22/03/2023

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.



Discipline: Inspection W R —
Expediting

G. Di Lauro
Signature
Date 22/03/2023

HUA GANG
HUA GANG
VERITAS

华迪钢业集团有限公司
HUADI STEEL GROUP CO., LTD
工 检 验 证 书
EXECUTIVE STANDARD:ASTM A312/A312M
MILL TEST CERTIFICATE (EN 10204/3.1)



Lloyd's Register

NO.MD00/3209/0001/4 Industrie Service

INVOICE NO.: CONTRACT NO.: EXECUTIVE STANDARD:ASTM A312/A312M		DESCRIPTION OF GOODS: SEAMLESS STAINLESS STEEL PIPE DELIVERY CONDITION: COLD FINISHED PICKLED&SOLUTION ANNEALED AT 1050 DEG. C COOLING MEDIUM:WATER STEELMAKING: AOD FURNACE NO WELD REPAIR AND MERCURY FREE										Date (日期) :21.03.07 No. (编号) :21-03-018	Surface condition (表面情况)	ACCEPTABLE
No.	Heat No. (炉号)	Grade (钢种)	Elements	C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Lot No. (批号)	
1	SI030418	TP304L	Results (product)	0.021	0.32	1.34	0.026	0.003	8.06	18.04	—	—	HD2021022060	
No.	Size (尺寸)	QTY 数量	T. S. 抗拉伸强度	V. S. 0.2%屈服强度	EL. GL=50mm 延伸率 (%) GW=25.4mm	10C Test ASTM A262 E	Flattening Test Continous Heating Furnace	Hardness HB 硬度	PMI Test Pcs	Eddy Current Test Gradual Pcs	Hydrostatic Test Water Pressure Gradual Pcs	Ultrasonic Test Super Gradual Pcs		
1	60.3*4	1090	540	235	46	ACCEPTABLE	ACCEPTABLE	145	ACCEPTABLE	—	—	—	—	
ISO9001: 2000 Certified by ABS Group. Ltd Conform to EN10204 (2004) —3.1 Country of melt and Country of manufacture: Zhejiang China														
1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HERE HAS BEEN MADE IN ACCORDANCE WITH ABOVE STANDARDS AND CONFORM TO CONTRACT STIPULATED REQUIREMENTS. 2. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL APPROVAL OF THE COMPANY. 3.NO PAINTING														
ISSUED BY				JUDGED BY				 2023 JIANG ZHENG YUAN DEPARTMENT Quality Control Department 2023 JIANG ZHENG YUAN DEPARTMENT Quality Control Department						

ADD: 24-32 ZHENBIAO ROAD, YOUNGZHONG TOWN, WENZHOU, ZHEJIANG, CHINA

TEL:

86-577-85982882

FAX: 86-577-28806686



Contract : 2200
Client : NERVION
Project : ALBA

Welding and QC Report Per Spool

Drawing : 2121-JA91F62-10-SF05-00481

Spec : 6C4-M

Revision : 00

Spool : 00481

Piece Mark : 2121-JA91F62-10-SF05-00481

Welding										Control									
Weld No.	Type	Dia	Sch	Weld Proc.	1st Pass	1st MTR	Final Pass	Final MTR	Dim	Date Visual	Date PT	MT	PMI	Date PMI	BHN	Date PWHT	Ferrite	Date Xray	Date Xray
0024	BW	2	\$10S	MW.26_BW	AD	03/04/2024	4712055	AD	03/04/2024	4712055	000407	09/04/2024	000359	15/04/2024					
0025	BW	2	\$10S	MW.26_BW	AD	03/04/2024	4712055	AD	03/04/2024	4712055	000407	09/04/2024	000359	15/04/2024					
0026	BW	2	\$10S	MW.26_BW	AD	03/04/2024	4712055	AD	03/04/2024	4712055	000407	09/04/2024	000359	15/04/2024					

ON BEHALF OF TCM \ R

QA E.V. Matici

04.07.2024

Boccard Portugal QC	Client
	Sergio Morales Date: 18-06-24

Notes:	



Shop QC Inspection Report

P2308-000424

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

Job number: P2308S
 Spool N°: 00481
 Piece Mark: 2121-IA91F62-10-SP05-00481

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

Control Date: 09/04/2024

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: RODRIGUES, JOSE Date: 09/04/2024 Signature 	QA/QC Inspection: GIL, MIGUEL Date: 18/04/2024 13:50:54 Signature 	Customer Inspection: Sergio Morales Date: 18-06-24 
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ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024

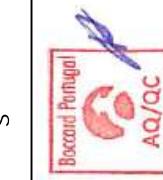
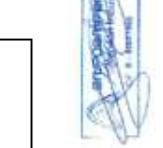
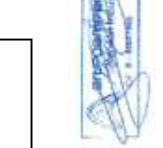


Visual Examination Report (Welds)

Contract : P2308	Job number: P2308S	Material: Stainless Steel 304, 316, 317
Client : NERVION	Spool N°: 00481	Procedure & Instructions: 4274-LZ-VD-FW31010370QAC04 - Rev: 1
Project : ALBA	Piece Mark: 2121-IA91F62-10-SP05-00481	Testing Date: 09/04/2024
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	Welding						
0024	2.0000 S10S BW-Butt weld Straight (MW.26_BW)	AD	17	X				Direct	
0025	2.0000 S10S BW-Butt weld Straight (MW.26_BW)	AD	17	X				Direct	
0026	2.0000 S10S BW-Butt weld Straight (MW.26_BW)	AD	17	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: 09/04/2024	Signature: 		Date: 18/04/2024 13:50:54					
	Signature: 	Signature: 		Signature: 					
		Signature: 		Signature: 					

ON BEHALF OF TCM \ R \ W
QA \ I. Matici
08.07.2024





Positive Material Identification Report (PMI)

P2308-000359

Client : NERVION
Contract : P2308 / Project : ALBA

Remarks: The results refer to the controlled items

Job number: P2308S
Spool N°: 00481
Piece Mark: 2121-IA9 JF62-10-SPP05-00481
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: 15/04/2024

Weld / Item No	Description	Reading	Chemical Elements						Accepted	Rejected	Comments	
			%Ti	%Mo	%Cu	%Ni	%Fe	%Mn	%Cr	%Nb	%Al	%V
0024	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	163	0	0	0	8	70	1	18	0	0	X
0025	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	162	0	0	0	9	69	1	18	0	0	X
0026	2.0000 S10S BW-Buttweld Straight (MW.26_BW)	161	0	0	0	8	70	2	18	0	0	X
1.2	2.0000 S10S PIPE, SEAMLESS, A312-TP304L (63981)	157	0	0	0	8	71	1	17	0	0	X
4.1	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (S1030418)	159	0	0	0	8	71	1	17	0	0	X
4.2	2.0000 S10S 45 ELL, SEAMLESS, A403-WP304L (S1030418)	160	0	0	0	8	71	1	17	0	0	X
5.2	2.0000 S10S WN FLG, RAISED FACE, 150#, A182-F304L (DA182)	158	0	0	0	7	70	1	18	0	0	X

ON BEHALF OF TCM \ R
QA\ I. Matici
04.07.2024

Test Performed by: FIGUEIRAS(QA), RUI (N2 PT/RT) QA/QC Inspection: Gil,
Date: 15/04/2024
Signature

Sergio Morales
Signature
Date: 18-06-24



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	163
Mode	ALLOY
Time	2024-04-15 10:24
Duration	3.64
Sequence	Final
Alloy1	304SS : 0.33
Alloy2	No Match : 1.70
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.087
Sn	< LOD	:	0.102
Pd	< LOD	:	0.078
Ag	< LOD	:	0.153
Al	< LOD	:	80.000
Mo	0.515	±	0.047
Nb	< LOD	:	0.017
Zr	< LOD	:	0.014
Bi	< LOD	:	0.021
Pb	< LOD	:	0.051
Se	< LOD	:	0.017
W	< LOD	:	0.218
Zn	< LOD	:	0.060
Cu	0.534	±	0.198
Ni	8.005	±	0.584
Co	< LOD	:	0.984
Fe	70.562	±	0.906
Mn	1.718	±	0.415
Cr	18.128	±	0.522
V	< LOD	:	0.262
Ti	< LOD	:	0.315

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	162
Mode	ALLOY
Time	2024-04-15 10:24
Duration	3.61
Sequence	Final
Alloy1	321SS : 1.20
Alloy2	304SS : 1.21
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.089
Sn	< LOD	:	0.085
Pd	< LOD	:	0.075
Ag	< LOD	:	0.151
Al	< LOD	:	80.000
Mo	0.093	±	0.021
Nb	< LOD	:	0.017
Zr	< LOD	:	0.012
Bi	< LOD	:	0.029
Pb	< LOD	:	0.049
Se	< LOD	:	0.026
W	< LOD	:	0.165
Zn	< LOD	:	0.045
Cu	< LOD	:	0.321
Ni	9.025	±	0.594
Co	< LOD	:	0.978
Fe	69.393	±	0.893
Mn	1.713	±	0.403
Cr	18.720	±	0.515
V	< LOD	:	0.233
Ti	< LOD	:	0.339

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

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04.07.2024



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Certificate of Verification

XL3t-32735

Reading No	161
Mode	ALLOY
Time	2024-04-15 10:23
Duration	3.39
Sequence	Final
Alloy1	304SS : 1.03
Alloy2	No Match : *2.32
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.075
Sn	< LOD	:	0.100
Pd	< LOD	:	0.081
Ag	< LOD	:	0.140
Al	< LOD	:	80.000
Mo	< LOD	:	0.025
Nb	< LOD	:	0.015
Zr	< LOD	:	0.012
Bi	< LOD	:	0.052
Pb	< LOD	:	0.041
Se	< LOD	:	0.010
W	< LOD	:	0.163
Zn	< LOD	:	0.035
Cu	< LOD	:	0.310
Ni	8.691	±	0.594
Co	< LOD	:	0.989
Fe	70.198	±	0.897
Mn	2.030	±	0.417
Cr	18.068	±	0.514
V	< LOD	:	0.296
Ti	< LOD	:	0.281

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	157
Mode	ALLOY
Time	2024-04-15 10:23
Duration	3.13
Sequence	Final
Alloy1	321SS : 0.35
Alloy2	No Match : 1.73
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.094
Sn	< LOD	:	0.115
Pd	< LOD	:	0.090
Ag	< LOD	:	0.159
Al	< LOD	:	80.000
Mo	0.319	±	0.043
Nb	< LOD	:	0.016
Zr	< LOD	:	0.023
Bi	< LOD	:	0.051
Pb	< LOD	:	0.018
Se	< LOD	:	0.019
W	< LOD	:	0.214
Zn	< LOD	:	0.087
Cu	0.539	±	0.227
Ni	8.286	±	0.669
Co	< LOD	:	1.120
Fe	71.070	±	1.025
Mn	1.803	±	0.464
Cr	17.060	±	0.573
V	< LOD	:	0.335
Ti	< LOD	:	0.415

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024





BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	159
Mode	ALLOY
Time	2024-04-15 10:23
Duration	3.14
Sequence	Final
Alloy1	321SS : 0.46
Alloy2	No Match : 1.88
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.087
Sn	< LOD	:	0.090
Pd	< LOD	:	0.079
Ag	< LOD	:	0.139
Al	< LOD	:	80.000
Mo	< LOD	:	0.016
Nb	< LOD	:	0.016
Zr	< LOD	:	0.008
Bi	< LOD	:	0.025
Pb	< LOD	:	0.027
Se	< LOD	:	0.005
W	< LOD	:	0.165
Zn	< LOD	:	0.051
Cu	< LOD	:	0.285
Ni	8.383	±	0.619
Co	< LOD	:	1.018
Fe	71.799	±	0.946
Mn	1.290	±	0.416
Cr	17.920	±	0.542
V	< LOD	:	0.326
Ti	< LOD	:	0.409

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	160
Mode	ALLOY
Time	2024-04-15 10:23
Duration	3.61
Sequence	Final
Alloy1	321SS : 1.46
Alloy2	301SS : 1.48
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.083
Sn	< LOD	:	0.120
Pd	< LOD	:	0.081
Ag	< LOD	:	0.158
Al	< LOD	:	80.000
Mo	< LOD	:	0.018
Nb	< LOD	:	0.011
Zr	< LOD	:	0.013
Bi	< LOD	:	0.030
Pb	< LOD	:	0.042
Se	< LOD	:	0.022
W	< LOD	:	0.230
Zn	< LOD	:	0.049
Cu	< LOD	:	0.294
Ni	8.052	±	0.633
Co	< LOD	:	1.073
Fe	71.785	±	0.979
Mn	1.508	±	0.436
Cr	17.762	±	0.558
V	< LOD	:	0.333
Ti	< LOD	:	0.353

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \R

QAE \ I. Matici

04.07.2024



BOCCARD PORTUGAL LDA

Certificate of Verification

XL3t-32735

Reading No	158
Mode	ALLOY
Time	2024-04-15 10:23
Duration	3.16
Sequence	Final
Alloy1	321SS : 1.42
Alloy2	301SS : 1.79
Flags	
SAMPLE	
HEAT	
LOT	
BATCH	
MISC	
NOTE	

	%	±	Error
Sb	< LOD	:	0.109
Sn	< LOD	:	0.165
Pd	< LOD	:	0.118
Ag	< LOD	:	0.230
Al	< LOD	:	80.000
Mo	0.557	±	0.067
Nb	< LOD	:	0.021
Zr	< LOD	:	0.022
Bi	< LOD	:	0.050
Pb	< LOD	:	0.036
Se	< LOD	:	0.036
W	< LOD	:	0.424
Zn	< LOD	:	0.091
Cu	0.559	±	0.273
Ni	7.714	±	0.776
Co	< LOD	:	1.336
Fe	70.292	±	1.231
Mn	1.313	±	0.541
Cr	18.446	±	0.710
V	< LOD	:	0.388
Ti	< LOD	:	0.496

Supervised By:

Sergio Morales



Date: 18-06-24

ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024



Pickling & Passivation Report

P2308 - 000339

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

Job number: P2308S
Spool N°: 00481
Piece Mark: 2121-IA91F62-10-SP05-00481

Procedure/Instruction: 23A008/010 Rev.0

Pick Tape		Clean Spray		Clean Wipes	
Brand:	Nitty Gritty Pick&Clean	Brand:	Nitty Gritty Pick&Clean	Brand:	Nitty Gritty Pick&Clean
Batch:	N/A	Batch:	N/A	Batch:	N/A
Opening Date:	07/01/2024	Opening Date:	07/01/2024	Opening Date:	07/01/2024
Expiration Date:	07/05/2024	Expiration Date:	07/05/2024	Expiration Date:	07/05/2024

Weld No.	Pickling and Cleaning				Accepted	Rejected
	Pick tape duration (at least 10/15 min)	Cleaning (with spray) and drying (with blotting paper)	OR	Cleaning (clean wipes)		
0024	15 min	OK			<input checked="" type="checkbox"/>	<input type="checkbox"/>
0025	15 min	OK			<input checked="" type="checkbox"/>	<input type="checkbox"/>
0026	15 min	OK			<input checked="" type="checkbox"/>	<input type="checkbox"/>

Performed by: LOPES, EDUARDO Date: 10/04/2024 Signature 	QA/QC Inspection: GIL, MIGUEL Date: 18/04/2024 13:50:41 Signature 	Customer Inspection: Sergio Morales Date: 18-06-24 
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ON BEHALF OF TCM \ R

QAE \ I. Matici

04.07.2024

