



DOSSIER DE QUALIDADE		
	Empreitada:	DOCUMENTO Nº:
	4001008 - "Nuevas Plantas de Poliolefinas, Plataformas Logísticas Y Offsites"	DATA:
		31/01/2025
		FOLHA Nº : / DE:
		386 de 2080

1.4.3 TUBAGEM

ITEM	DESCRIÇÃO DOCUMENTAL	Nº CERTIFICADO	DATA
TUBOS DE HDPE			
1	TUBAGENS PLÁSTICAS EM POLIETILENO (PE) POLITEJO PARA DRENAGEM	PT07/02125	29/11/2021
2	TUBO ASTM-80 Ø101.6x9	43277	02/02/2024

* VER CAPÍTULO SOLDADURA - DOSSIER DE FABRICAÇÃO - POLIETILENO

31/01/2025			
Data	Qualidade	Director Obra	Repsol
	Verificado	Aprovado	Cliente

Certificado de Conformidade

Certificate of Conformity

PT07/02125

POLITEJO - Indústria de Plásticos, S.A.

E.N. 3, Km 16 - Casais da Lagoa
2050-038 AVEIRAS DE BAIXO

Âmbito Certificado

Certified Scope

Produto(s): Tubagens plásticas em Polietileno (PE) para abastecimento de água, e para drenagem e esgoto sob pressão.

Product(s): Plastics pipes of Polyethylene (PE) for water supply and for drainage and sewerage under pressure.

Variante(s): descritas em anexo.

Variant(s): described in annex.

Documento(s) normativo(s) / Standard(s)

NP EN 12201-1:2012; NP EN 12201-2:2011+A1:2015;

CEN/TS 12201-7:2014

Este certificado é válido desde

This certificate is valid from

29 de novembro de 2021 até 10 de outubro de 2024,

sujeito a auditorias de acompanhamento com resultados satisfatórios

29 November 2021 until 10 October 2024, and remains valid subject to satisfactory surveillance audits

Auditoria de Renovação a realizar antes de 10 de agosto de 2024

Re certification audit due before 10 August 2024

Versão 25. Certificado pela SGS desde junho de 2007

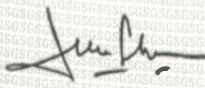
Issue 25. Certified with SGS since June 2007

Autorizado por:

Authorized by:



Luís Neves



Luis Santos

Direção de Certificação
Certification Management

SGS ICS - Serviços Internacionais de Certificação, Lda
Polo Tecnológico de Lisboa, Rua Cesina Adães Bermudes, lote 11, nº 1, 1600-604 Lisboa - Portugal
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PT/NP EN 12201 / 07/02125

IPAC
acreditação

C0001
ISO/IEC 17065
Produtos



Certificado de Conformidade

Certificate of Conformity

PT07/02125

ANEXO 1

(ANNEX 1)

Produto(s): Tubagens plásticas em Polietileno (PE) para abastecimento de água, e para drenagem e esgoto sob pressão.

Product(s): Plastics pipes of Polyethylene (PE) for water supply and for drainage and sewerage under pressure.

Variante(s):

Variant(s):



PT/NP EN 12201 / 07/02125

Para abastecimento de água For water supply			
Material Material	Pressão Nominal Nominal Pressure (PN)	Razão Dimensional Normalizada / Série Standard Dimension Ratio / Series (SDR / S)	Diâmetro Nominal Nominal Diameter (mm)
PE 80	8	17 / 8	32, 40, 50, 63, 75, 90, 110 (matéria-prima PE 100)
	10	13,6 / 6,3	25, 32, 40, 63, 90, 110 (matéria-prima PE 100)
PE 100	5	33 / 16	800, 1000
	6	26 / 12,5	125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600
	8	21 / 10	32, 40, 50, 63, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600
	10	17 / 8	25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200
	12,5	13,6 / 6,3	125, 140, 160, 200, 250, 280, 315, 355, 400, 450, 500, 560
	16	11 / 5	25, 32, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 800
	20	9 / 4	110, 125, 160, 180, 200
	25	7,4 / 3,2	125, 140, 160, 200

Para drenagem e saneamento com pressão For drainage and sewerage under pressure			
Material Material	Classe de pressão Nominal pressure (PN)	Razão Dimensional normalizada / Série Standard dimension ratio / Series (SDR / S)	Diâmetro Nominal Nominal Diameter (mm)
PE 80	8	17 / 8	200 (matéria-prima PE 100)
PE 100	6	26 / 12,5	110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600
	8	21 / 10	630, 710, 800, 900, 1000, 1200, 1400, 1600
	10	17 / 8	32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200
	12,5	13,6 / 6,3	125, 140, 160, 200, 250, 315, 400
	16	11 / 5	63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 560, 630

IPAC
acreditação

C0001
ISO/IEC 17065
Produtos

DOSSIER DE QUALIDADE

Empreitada:

**4001008 - "Nuevas Plantas de Poliolefinas,
Plataformas Logísticas Y Offsites"**

DOCUMENTO Nº:

DATA:

31/01/2025

FOLHA Nº : / DE:

389 de 2080

ITEM	DESCRIÇÃO DOCUMENTAL	Nº CERTIFICADO	DATA
TUBOS DE AÇO CARBONO			
1	TUBOS ASTM-A-106 B SMLS, ASME B36,10 Ø6", SCH40,L7805	MTC-4-19-035	17/12/2019
2	TUBOS ASTM-A-106 B SMLS, ASME B36,10 Ø6", SCH40,L7805	MTC-4-19-039	17/12/2019
3			

* VER CAPÍTULO SOLDADURA - DOSSIER DE FABRICAÇÃO - AÇO CARBONO

20/12/2023			
Data	Qualidade	Director Obra	Repsol
	Verificado	Aprovado	Cliente



3.1 MILL TEST CERTIFICATE ACCORDING TO EN 10204
Certificado de fabricación tipo 3.1 de acuerdo a EN 10204

No. Certificate: MTC-4-19-039
Nº certificado:
Date / Fecha: 17/12/2019
Pages/Páginas: 4

GENERAL INFORMATION / Información general

Manufacturer: Fabricante:	BAIKA STS			Steel grade: Grado de acero:	API 5L Gr. B N PSL2
Client: Client:	CUÑADO			Packing list n°: Nº de listado de tubería:	0275-18-06
Project: Proyecto:	POLIDUCTO REPSOL			Pipe quantity: Número de tuberías:	50
Item: Posición:	6	Size (mm): Dimensiones (mm):	168 x 7,11	Total length (m): Longitud total (m):	924,58

APPLIED PRODUCTS / Productos aplicados

Abrasive grit: Granalla:	LG18-W ABRASIVES LG25 W ABRASIVES	Product standard: Norma de producto	ED-N-03.00-02a
FBIE: Epoxy polvo:	ARSONSISI PE 507191	Coating class: Clase de revestimiento:	B3
Adhesive: Adhesivo:	MPB COESIVE L8.92.8	Coating: Revestimiento:	High density polyethylene Poliétileno de alta densidad (HDPE)
High density polyethylene: Poliétileno de alta densidad (HDPE):	MPB LUXENE HDPE2050	Minimum thickness (mm): Espesor mínimo (mm):	5,4

BAIKA Steel Tubular Systems, S.L., hereby certify that the pipes herein described satisfy the manufacturing, testing, and inspection requirements stated in the purchase order

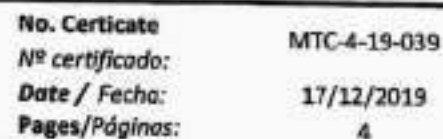
BAIKA Steel Tubular Systems S.L., certifica que las tuberías referenciadas satisfacen los requisitos de fabricación, ensayos e inspección de la orden de pedido

This certificate cannot be reproduced partially without the written consent of BAIKA Steel Tubular Systems S.L.

Este certificado no puede reproducirse parcialmente sin el consentimiento escrito de BAIKA Steel Tubular Systems, S.L.

Signed for and on behalf of the manufacturer by:
Firmado por y en nombre del fabricante:


Ignacio González Murillo
QA / QC Manager



TEST RESULTS Resultados de ensayo

Pipe ID Nº tubería	FBE / adhesive batch <i>Lotes de FBE / adhesivos</i>	Thickness FBE (μm) <i>Espesor FBE (μm)</i>	(μm) <i>Espesor adhesivo</i>	Degree of cure <i>Grado de curado</i>	Cathodic Disbondment (*) <i>Desprendimiento catódico (*)</i>
1363	041907/ 2019-A1-002216	163,2	390	2,94	-
1351	041907/ 2019-A1-002216	-	-	1,88	-
47-427	-/-	-	-	-/-	2,59
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
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	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
Acc. criteria <i>Criterio acept.</i>		125-500 μm	$\geq 150 \mu\text{m}$	$\Delta Tg \pm 3^{\circ}\text{C}$	$\leq 4 \text{ mm.}$
Frequency <i>Frecuencia</i>		1 / shift 1 / turno		2 / shift 2 / turno	1 / batch FBE 1 / lote FBE

(*) Test at 65°C during 24 hours at -3,5 V
Ensayo a 65°C durante 24 horas a -3,5 V

Ignacio González Martín
QA / QC Manager

TUBULAR SYSTEMS

Balka Steel Tubular Systems, S.L. - 801589111

CALIDAD



3.1 MILL TEST CERTIFICATE ACCORDING TO EN 10204
Certificado de fabricación tipo 3.1 de acuerdo a EN 10204


No. Certificate MTC-4-19-039
 Nº certificado:
 Date / Fecha: 17/12/2019
 Pages/Páginas: 4

TEST RESULTS / Resultados de ensayos

Polyethylene HDPE (*)	Pipe ID	Thickness (mm)	Peel strength (N/mm) (**)		HDPE batch	MFR	Elongation at break (%)	Impact resist. (J/mm)	Indentation resl. (mm)
	Nº tubería	Espesor (mm)	Resistencia a pelado (N/mm)		Lote de HDPE	Índice de fluidez	Elongación a la rotura (%)	Resistencia al impacto (J/mm)	Resistencia a indentación
	47-1351	6,16	52,1	21,8	2019-L1-000295	-	-	-	-
	47-427	6,22	37,7	21,8	-	-	-	-	-
	47-427	-	-	-	-	-	-	OK	-
	STOCK EMPUJE	-	-	-	-	2,24	>444,45	-	0,04 23°C / 0,1 80°C
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	Acc. criteria	> mm.	> 18 N/mm 23°C	> 5 N/mm 80°C	Acc. criteria	ΔMFR ± 20%	≥ 400%	≥ 7 J/mm - 23°C	≤ 0,2 mm - 23°C ≤ 0,4 mm - 80°C
	Frequency	Every ten pipes	1 / shift	1 / shift	Frequency	1 / batch			
	Frecuencia	Cada diez tuberías	1 / turno	1 / turno	Frecuencia	1 / lote			
					HDPE batch	Flexibilidad		Hot water immersion (mm)	
					Lote de HDPE	Flexibility		Inmersión en agua caliente (mm)	
					2019-L1-000295	OK		No disbonding	No disbonding
					-	-		-	-
					-	-		-	-
					-	-		-	-
					-	-		-	-
					-	-		-	-
					Acc. criteria	No cracks when bending at 0°C		Average disbonding ≤ 2mm	Maximum disbonding ≤ 3 mm
					Frequency	1 / batch			
					Frecuencia	1 / lote			

(*) Continuity test with satisfactory results in 100% of the coating surface. Residual magnetism < 30 G. Flexibility test
 Ensayo de continuidad a 25 kV con resultado satisfactorio en el 100% de la superficie revestida. Magnetismo residual < 30 G
 (**) Test performed at 23°C and 80°C
 Ensayo realizado a 23°C y 80°C



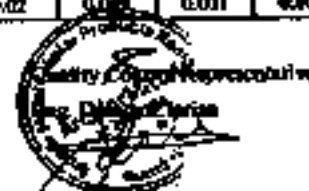
Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR, BL 15, SC. A, PARTER, I. ROMAN, NEAMT ROMANIA	MILL TEST CERTIFICATE according to EN 100043,1/2004					Page 1/2		 ArcelorMittal	
						E140060			
						28.11.2018			
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN	SEAMLESS STEEL LINE PIPES					Total weight: 26.137 tons 0 lbs	Total Length: 924,92 meters 3034,51 Gals	Pieces: 20	Barrels: 13
Standard: API 5L-60-2012/ API 5L-60-45- 2010-PSL2/ ASME B16.10M-2013; Pipes acc with Special specs and AMR Technical Office Report 25.09.2018									
Buyer's reference: Contract: 00003000	PO NO.: PC0032413		Dimensions: 168,30 x 7,11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.00 - 12.00 m 36.09 - 39.37 feet		
	Item	Item Class	Hydro Test	Bar	PSI	MPa	Time(sec)	Steel Grade:	EN - PSL2
	6	170 L-PIPE-6-8		196	-	10,6	10		


Chemical Analysis(%)

Heat	Batch No.	Product Req.	Min.	C	Mn	Si	S	P	Cr	Ni	Cu	Al	Mo	V	Nb	Ti	B	N
63497		Heat analysis		0.24	1.20	0.40	0.015	0.025	0.30	0.30	0.58	-	0.15	-	-	0.040	0.0010	-
63497		Heat analysis		0.15	0.81	0.24	0.004	0.007	0.10	0.08	0.15	0.024	0.02	0.008	0.001	0.004	0.0004	0.0046
63497		Heat analysis		0.15	0.84	0.22	0.003	0.004	0.11	0.07	0.16	0.025	0.02	0.011	0.002	0.004	0.0003	0.0070
63497		Heat analysis		0.14	0.86	0.24	0.003	0.006	0.15	0.12	0.17	0.024	0.03	0.015	0.004	0.001	0.0002	0.0046
63497		Heat analysis		0.15	0.83	0.23	0.004	0.004	0.01	0.07	0.20	0.028	0.02	0.010	0.004	0.001	0.0002	0.0046
63497		Heat analysis		0.14	0.80	0.24	0.004	0.003	0.13	0.08	0.13	0.032	0.02	0.009	0.003	0.001	0.0003	0.0078
63498		Heat analysis		0.15	0.86	0.23	0.002	0.007	0.10	0.09	0.16	0.026	0.03	0.012	0.003	0.001	0.0002	0.0076
63497	18-1918	Product analysis		0.16	0.83	0.25	0.002	0.007	0.11	0.09	0.17	0.028	0.02	0.007	0.002	0.001	0.0002	0.0066
63497	18-1918	Product analysis		0.16	0.83	0.23	0.002	0.007	0.11	0.09	0.17	0.028	0.02	0.007	0.002	0.001	0.0002	0.0068
63497	18-2014	Product analysis		0.14	0.84	0.23	0.002	0.007	0.09	0.07	0.15	0.027	0.02	0.010	0.001	0.001	0.0001	0.0074
63497	18-2014	Product analysis		0.15	0.83	0.23	0.002	0.007	0.09	0.07	0.15	0.026	0.02	0.009	0.001	0.001	0.0001	0.0080
63497	18-2008	Product analysis		0.14	0.86	0.24	0.002	0.009	0.17	0.11	0.14	0.034	0.02	0.015	0.001	0.001	0.0001	0.0063
63497	18-2008	Product analysis		0.15	0.85	0.24	0.002	0.009	0.17	0.11	0.14	0.034	0.02	0.015	0.001	0.001	0.0001	0.0061
63497	18-2004	Product analysis		0.15	0.84	0.23	0.003	0.010	0.09	0.07	0.15	0.028	0.02	0.009	0.001	0.001	0.0001	0.0084
63497	18-2004	Product analysis		0.15	0.84	0.22	0.003	0.010	0.08	0.07	0.15	0.026	0.02	0.009	0.001	0.001	0.0001	0.0083
63497	18-2006	Product analysis		0.15	0.85	0.24	0.003	0.010	0.11	0.08	0.19	0.026	0.02	0.009	0.001	0.001	0.0002	0.0071
63497	18-2006	Product analysis		0.15	0.84	0.25	0.003	0.011	0.11	0.08	0.20	0.025	0.02	0.009	0.001	0.001	0.0003	0.0071
63498	18-2014	Product analysis		0.15	0.85	0.23	0.002	0.008	0.08	0.08	0.16	0.026	0.02	0.009	0.001	0.001	0.0001	0.0077
63498	18-2014	Product analysis		0.15	0.85	0.23	0.002	0.008	0.08	0.08	0.17	0.025	0.02	0.009	0.001	0.001	0.0001	0.0076

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

C. C. C. C.
 29.4.2018
 R. J.



Manufacturer AndorraSteel Tubular Products Barren S.A. STEFAN CEL MARE STR. 31 15, SC. A, PARTER, I. ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10304/3.1/2004		Page 2/8 B 16906/1 28.11.2018		 AndorraSteel	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR, 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES		Total weight: 26.137 tons 4 lbs	Total Length: 924.92 meters 3024.31 feet	Pieces: 68	Bundles: 15
Buyer's reference: PO NO. J00052419 Contract: 89805348		Standard: API 5L 4045-2013/ API 5L 4046-2013-PSL2/ ASME B36.10M-2015; Plus acc with Rapaci space and ASME Technical Offer Report 25.09.2018		Dimensions: 148.28 x 7.11 mm 5.835 X 0.280 inch		Schedule: 40	
		Length: 11.80 - 12.99 m 38.69 - 39.37 feet					
		Hydro Test: Bar 196		PSI 19.6		Time(sec) 10	
		Steel Grade:		B7N - PSL2			

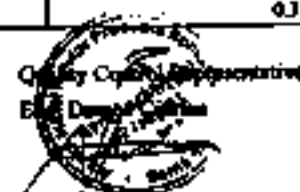
Chemical Analysis(%)


Heat	Batch No.	Product Req.	Max Min	Nb + V		Nb + Ti + V		CE UW	
				0.000				0.43	
63497		Heat analysis		0.009		0.010		0.33	
63520		Heat analysis		0.013		0.014		0.33	
63537		Heat analysis		0.017		0.018		0.34	
63643		Heat analysis		0.011		0.012		0.31	
63647		Heat analysis		0.018		0.018		0.35	
63646		Heat analysis		0.013		0.014		0.34	
63497	18-1918	Product analysis		0.009		0.010		0.34	
63497	18-1918	Product analysis		0.009		0.010		0.34	
63820	18-2814	Product analysis		0.011		0.012		0.32	
63820	18-2814	Product analysis		0.010		0.011		0.33	
63837	18-2808	Product analysis		0.016		0.017		0.34	
63837	18-2808	Product analysis		0.016		0.017		0.35	
63645	18-2909	Product analysis		0.010		0.011		0.33	
63645	18-2908	Product analysis		0.010		0.011		0.33	
63847	18-2808	Product analysis		0.010		0.011		0.34	
63847	18-2808	Product analysis		0.010		0.011		0.34	
63648	18-2814	Product analysis		0.010		0.011		0.33	
63648	18-2814	Product analysis		0.010		0.011		0.33	

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, rev.0

E. CHITJAN
 CEO, YSA
 29.11.2018



Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR. BL. 15, SC. A, PARTER, I, ROMAN, NEAMT ROMANIA		MILL. TEST CERTIFICATE according to EN 102043.1/2004		Page 4/5 B 160057 28.11.2008		 ArcelorMittal	
Buyer: CLINADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES		Total weight: 26.137 tons 0 lbs	Total Length: 924.92 meters 3034.51 feet	Pieces: 60	Bundles: 12
Buyer's reference: PO NO. 700852419 Contact: 30003060		Standard: API 5L, ed.45-2012/ API 5L ed.46-2014-P5L2, ASME B31.10M-2015; Pipes are with Special specs and AMR Technical Order Especial 25.09.2016		Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40	
Length: 11.00 - 12.80 m 36.09 - 39.37 feet		Hydro Test:		Bar: 196	PSI: -	MPa: 19.4	Time (sec): 10
Steel Grade:		BN - P5L2					

Impact Test

Heat	Impact Test Ballot No.	Orientation	Size (mm)	Temp. (°C)	Req. KV (min. J)	KV values (J)			Req. Avg. (min. J)	Avg. fracture energy (J)	ECU value (J/cm² T/C)			Shore A min. %			Lateral Expansion min. mm		
63497	18-6993	Longitudinal	10x5x55	+20	14.0	98	94	95	-	97	-	-	-	90	90	90	0.35	0.80	0.81
63820	18-7232	Longitudinal	10x5x55	+20	14.0	98	94	94	-	97	-	-	-	90	90	90	0.51	0.81	0.78
63837	18-7213	Longitudinal	10x5x55	+20	14.0	106	108	103	-	105	-	-	-	90	90	90	0.59	0.91	0.87
63845	18-7213	Longitudinal	10x5x55	+20	14.0	91	91	97	-	93	-	-	-	90	90	90	0.76	0.76	0.81
63845	18-7216	Longitudinal	10x5x55	+20	14.0	89	94	92	-	92	-	-	-	90	90	90	0.74	0.76	0.76
63845	18-7217	Longitudinal	10x5x55	+20	14.0	99	93	94	-	95	-	-	-	90	90	90	0.52	0.76	0.79
63847	18-7215	Longitudinal	10x5x55	+20	14.0	95	94	93	-	94	-	-	-	90	90	90	0.88	0.79	0.79
63847	18-7216	Longitudinal	10x5x55	+20	14.0	93	99	100	-	95	-	-	-	90	90	90	0.72	0.77	0.83
63847	18-7232	Longitudinal	10x5x55	+20	14.0	102	91	99	-	97	-	-	-	90	90	90	0.85	0.75	0.82
63848	18-7232	Longitudinal	10x5x55	+20	14.0	83	83	88	-	84	-	-	-	90	90	90	0.68	0.67	0.72

Hardness Test


Heat	Hardness Test Ballot No.	HB max. 215	HV 10 max. -	HV 10 max. -					HRC max. -
				OD	Midwall	ID	End A	End B	
63497	18-3641	162;163;164;165	-	-	-	-	-	-	<
63497	18-3641	162;161;163;164	-	-	-	-	-	-	<
63820	18-3615	158;160;159;157	-	-	-	-	-	-	<
63820	18-3615	158;157;160;159	-	-	-	-	-	-	<
63837	18-3792	161;160;159;162	-	-	-	-	-	-	<
63837	18-3792	160;158;159;161	-	-	-	-	-	-	<

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, rev.9

C. CAMPINESE
 CEO, TSC
 27.9.2008
[Signature]

Quality Control Representative
 Eng. *[Signature]*


Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR, BL 15, SC. A, PARTER, I. ROMAN, NEAMT ROMANIA	MILL TEST CERTIFICATE according to EN 10204/3.1/2004				Page 5/8 B 1600679 28.11.2018		 ArcelorMittal					
					Total weight: 28.137 tons 0 lbs				Total Length: 924.92 meters 3 034.53 feet		Pieces: 80	Bundles: 15
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN	SEAMLESS STEEL LINE PILES				Standard: API 5L-60-43-2017/ API 5L-60-46- 2016-PSL2; ASTM: B36-B0M-2013; Pipe acc with Request spec and AMT Technical Offer Revised 23-07-2018							
Buyer's reference: PO NO. JPC0052419 Contract: 58003868	Dimensions: 168.50 x 7.18 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.00 - 12.00 m		36.09 - 39.37 feet					
Item: 8 Item Client: 170 L-PW46- R		Hydro Test:	Bar: 196	YSI: -	MPa: 19.6	Time(100) 10	Steel Grade: EN - PSL2					

Hardness Test


Heat	Hardness Test Bulletin No.	HB 10x12.5	HV 10 mm.-	TV 10 mm.-					HRC max.
				OD	Midwall	ID	End A	End B	
63845	18-3791	160;162;164;161	-	-	-	-	-	-	<
63845	18-3791	162;161;160;161	-	-	-	-	-	-	<
63845	18-3792	162;161;163;164	-	-	-	-	-	-	<
63845	18-3792	163;161;162;161	-	-	-	-	-	-	<
63845	18-3793	163;164;160;162	-	-	-	-	-	-	<
63845	18-3793	164;162;163;161	-	-	-	-	-	-	<
63847	18-3791	161;159;160;162	-	-	-	-	-	-	<
63847	18-3791	159;158;160;161	-	-	-	-	-	-	<
63847	18-3792	158;159;161;160	-	-	-	-	-	-	<
63847	18-3792	160;159;158;161	-	-	-	-	-	-	<
63847	18-3815	158;159;161;160	-	-	-	-	-	-	<
63847	18-3815	159;158;157;160	-	-	-	-	-	-	<
63846	18-3815	163;164;162;161	-	-	-	-	-	-	<
63846	18-3815	162;163;161;160	-	-	-	-	-	-	<

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, rev.9

G. CHITANU
 DRG-TRC
 29.11.2018
 R



Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR. BL. 15, SC. A, PARTER, I, ROMAN, NEAMT ROMANIA	MILL TEST CERTIFICATE according to EN 10204/3.1/2004	Page 6/8		 ArcelorMittal																
Buyer: CUSADO S.A. CALLE CAMINO DEL OLVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES	B 10006/1			28.11.2018	Total weight:	Total Length:	Pieces:	Bundles:										
Buyer's reference: PO NO.: PC00032419	Standard: API 5L x60-2012 / API 5L x60-2011-PSL2; ASME B36.10M-2015; Pipes are with lap welds and AMR Technical Office Report 25.09.2018.		26.127 tons	0 lbs	924.92 meters	3 034.51 feet	80	15												
Contract: S0003608	Dimensions: 168.30 x 7.19 mm 6.625 X 0.283 inch	Length:	11.00 - 12.00 m	36.09 - 39.37 feet	Steel Grade:			BN - PSL2												
<table border="1"> <thead> <tr> <th>Item</th> <th>Item Code</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>170 L-PP46- R</td> </tr> </tbody> </table>	Item	Item Code	6	170 L-PP46- R	<table border="1"> <thead> <tr> <th>Hydro Test:</th> <th>Bar</th> <th>PSI</th> <th>MPa</th> <th>Time(sec)</th> </tr> </thead> <tbody> <tr> <td></td> <td>196</td> <td>-</td> <td>19.6</td> <td>10</td> </tr> </tbody> </table>	Hydro Test:	Bar	PSI	MPa	Time(sec)		196	-	19.6	10					
Item	Item Code																			
6	170 L-PP46- R																			
Hydro Test:	Bar	PSI	MPa	Time(sec)																
	196	-	19.6	10																

Heat


Heat	Pieces	Length (m)	Weight (kg)
63497	1	-	-
63420	10	-	-
63837	10	-	-
63545	16	-	-
63847	7	-	-
63848	16	-	-

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, rev.9

On CHITIMUS
 ORO. TSK
 29.11.2018
 R



Manufacturer: ArcelorMittal Tubular Products Roman S.A. STEFAN CEL MARE STR. BL. 15, SC. A, PARTER, I. ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 102043.1/2004				Page 7/8 M (00007) 28.11.2018		 ArcelorMittal	
Buyer: OLNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES				Total weight: 28.127 tons 0.00	Total Length: 926.92 meters 3 034.51 feet	Pieces: 80	Boards: 13
Buyer's reference: PO NO.: POM52419 Contract: 50063988		Standard: API 5L x445-3012/API 5L x445- 2013-PSL2; ASME B36.104-2015; Pipes are with Repeel spms and AME Technical Offer Refusal 25.09.2018				Length: 11.80 - 12.00 m		38.09 - 39.37 feet	
Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40		Hydro Test: Bar PSI MPa Time(sec)		Steel Grade: EN - PSL2			
6 170 L-PH46-R		195		19.5		10			

Remarks: PIPES IN COMPLIANCE WITH PED: 2014-68-EU/15.05.2014, ANNEX 1, SECTION 4.3. & 7.5

Manufacturing process - hot rolling.

Hot finished, steel is fully killed and produced by electric furnace, source G000108.

Visual inspection and dimensional check without objection.

Heat treatment: normalizing at temperature 910 - 940°C, time soaking 4 min.

NDT full body:

100% ultrasonic testing in accordance with ASTM E213 : Le +Li (12.5 % from W.T) - satisfactory.

NDT for the pipe ends:

ultrasonic testing : Le+Li (12.5 % from W.T.) - satisfactory.

detection of laminar imperfection on the pipe ends, surface coverage - satisfactory.

bevel at each pipe end have been inspected for defects by wet magnetical particle, without stratification - satisfactory.

ultrasonic inspection to verify that the 50 mm wide zone at each pipe end is free of such laminar imperfection.

Hydrostatic test hold for 10 sec. no leakage noticed.

Hydrostatic test hold for 20 sec. no leakage noticed. (for a percentage of 10% of pipes) :

serial: 2-18-47-1362; 2-18-47-1366; 2-18-47-1506; 2-18-47-1517; 2-18-47-1544; heat: 63820

serial: 2-18-47-1490; heat: 63837

serial: 2-18-47-431; 2-18-47-494; heat: 63845

NDT After hydrostatic test, (max.5 pcs)

serial: 2-18-47-413; 2-18-47-448; 2-18-47-496; heat: 63845

serial: 2-18-47-539; 2-18-47-540 heat: 63848

NDT full body:

100% ultrasonic testing in accordance with ASTM E213 : Le +Li (12.5 % from W.T) - satisfactory.

C. CHIDNUS

08.11.2018

27.11.2018

R

14



We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Manufacturer: ArcelorMittal Tubular Products Roman S.A. STEFAN CEL MARE STR, BL 15, SC. A. PARTER, 5, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 102043.1/2004				Page 0/2 B 16006/1 28.11.2018		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES				Total weight: 26.137 t/m 6 lbs	Total Length: 924,92 meters 3 034.51 feet	Pieces: 80	Bundles: 15
Buyer's reference: PO NO. 9C0052419 Contract: 99883808		Standards: API 5L ed 45-2012 / API 5L ed 44- 2010 - PSL2; ASME B36.10M 2015; Pipes are with Approval given and ASNT Testrated Other Report 23.09.2018							
		Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.80 - 12.00 m 36.09 - 39.37 feet			
Item:	Item Client:	Hydro Test:	Bar:	PSI:	MPa:	Time(sec):	Steel Grade:	BN - PSL2	
6	170 L-PIP46- R		195		13.6	10			

NDT for the pipe ends:

ultrasonic testing : L+Li (12.5 % from W.T.) - satisfactory.

detection of laminar imperfection on the pipe ends, surface coverage - satisfactory.

bevel at each pipe end have been inspected for defects by wet magnetical particle, without stratification - satisfactory.

ultrasonic inspection to verify that the 50 mm wide zone at each pipe end is free of such laminar imperfection.

Magnatism residual check : four readings were taken approximately 90° apart around the circumference of each end of the pipe. The average of the four readings is ≤ 25 Gs, and no one reading is exceed 30 Gs.

The products was manufactured, sampled, tested, marked and inspected in accordance with the Standards, the supplementary requirements, and any other requirements designated in the purchase order, and has been found to meet such requirements

G. CHIRIUS
 OMR. TSK
 24.11.2018

2



We state on our sole responsibility that the delivered products are in conformity with the order requirements.



3.1 MILL TEST CERTIFICATE ACCORDING TO EN 10204
Certificado de fabricación tipo 3.1 de acuerdo a EN 10204

No. Certificate: MTC-4-19-035
Nº certificado:
Date / Fecha: 17/12/2019
Pages/Páginas: 4

GENERAL INFORMATION // Información general:

Manufacturer: Fabricante:	BAIKA STS		Steel grade: Grado de acero:	API 5L Gr. BN PSL2
Client: Cliente:	CUÑADO		Packing list nº: Nº de listado de tubería:	0275-18-01
Project: Proyecto:	POLIDUCTO REPSOL		Pipe quantity: Número de tuberías:	224
Item: Posición:	1	Size (mm): Dimensiones (mm):	Total length (m): Longitud total (m):	2644,94
		168 x 7,11		

APPLIED PRODUCTS // Productos aplicados:

Abrasive grit: Granalla:	_LG18-W ABRASIVES _LG25 W ABRASIVES	Product standard: Norma de producto	ED-N-03.00-02a
FBE: Epoxy polvo:	ARSONSISI PE 507191	Coating class: Clase de revestimiento:	B3
Adhesive: Adhesivo:	MPB COESIVE L8.92.B	Coating: Revestimiento:	High density polyethylene Poliétileno de alta densidad (HDPE)
High density polyethylene: Poliétileno de alta densidad (HDPE):	MPB LUXENE HDPE2050	Minimum thickness (mm): Espesor mínimo (mm):	2,7

BAIKA Steel Tubular Systems, S.L., hereby certify that the pipes herein described satisfy the manufacturing, testing, and inspection requirements stated in the purchase order

BAIKA Steel Tubular Systems S.L., certifica que las tuberías referenciadas satisfacen los requisitos de fabricación, ensayos e inspección de la orden de pedido

This certificate cannot be reproduced partially without the written consent of BAIKA Steel Tubular Systems S.L.

Este certificado no puede reproducirse parcialmente sin el consentimiento escrito de BAIKA Steel Tubular Systems, S.L.

Signed for and on behalf of the manufacturer by:
Firmado por y en nombre del fabricante:


Ignacio González Vázquez
BAIKA Steel Tubular Systems, S.L. • 091559111

CALIDAD



3.1 MILL TEST CERTIFICATE ACCORDING TO EN 10204
Certificado de fabricación tipo 3.1 de acuerdo a EN 10204

No. Certificate MTC-4-19-035
Nº certificado:
Date / Fecha: 17/12/2019
Pages/Páginas: 4

TEST RESULTS / Resultados de ensayo:

Pipe ID Nº tubería	ΔT dew point (°C) ΔT punto de rocío (°C)	Salt content (mg/m²) Contenido en sal (mg/cm²)	Roughness (μm) Rugosidad (μm)	Dust Polvo	Grit batch Lote granalla	Water contaminat. (μS/cm) Contaminación Agua (μS/cm)
1496	4,3	0,3	75,5	2 / 2	LG 25 - 118249	0,14
1406	-	-	79,3	2 / 2	LG 18 - 219155	0,13
44-1633	-	-	66,75	2 / 2	-	-
47-280	-	-	76,68	2 / 2	-	-
47-315	5,8	-	70,39	2 / 2	-	-
47-1504	7,3	-	72,1	2 / 2	-	-
47-645	-	-	70,7	2 / 1	-	-
47-479	-	-	82,1	2 / 1	-	-
47-1498	-	-	78,7	2 / 2	-	-
47-358	8,4	-	77,8	2 / 1	-	-
47-500	-	-	73,54	2 / 2	-	-
47-340	-	-	70,8	2 / 2	-	-
497	-	0,3	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
Acc. criteria Criterio acept.	> 39 °C	≤ 2 μg/cm²	50-100 μm	≤ 2	Acc. criteria Criterio acept.	≤ 150 μS/cm
Frequency Frecuencia	2 / shift 2 / turno	1 / shift 1 / turno	1 / hour 1 / hora		Frequency Frecuencia	1 / shift 1 / turno



No. Certificate	MTC-4-19-035
Nº certificado:	
Date / Fecha:	17/12/2019
Pages/Páginas:	4

TEST RESULTS: / Resultados de ensayo:

Pipe ID Nº tubería	FBE / adhesive batch Lotes de FBE / adhesivo	Thickness FBE (μm) Espesor FBE (μm)	(μm) Espesor adhesivo	Degree of cure Grado de curado	Cathodic Disbondment (*) Desprendimiento catódico (*)
47-332	041907/ 2019-A2-003362	135,2	182,7	1,82	-
1455	041907/ 2019-A2-003362	-	-	2,95	-
435	041907/ 2019-A2-003362	131	154,7	0,59	-
453	041907/ 2019-A2-003362	-	-	2,07	-
47-343	041907/ 2019-A2-003362	-	-	-/-	1,95
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
	-/-	-	-	-/-	-
Acc. criteria Criterio acept.		125-500 μm	$\geq 150 \mu\text{m}$	$\Delta Tg \pm 3^{\circ}\text{C}$	$\leq 4 \text{ mm.}$
Frequency Frecuencia		1 / shift 1 / turno		2 / shift 2 / turno	1 / batch FBE 1 / lote FBE

(*) Test at 65°C during 24 hours at -3,5 V
Ensayo a 65°C durante 24 horas a -3,5 V

CALIDAD



3.1 MILL TEST CERTIFICATE ACCORDING TO EN 10204
Certificado de fabricación tipo 3.1 de acuerdo a EN 10204

No. Certificate MTC-4-19-035
Nº certificado:
Date / Fecha: 17/12/2019
Pages/Páginas: 4

TEST RESULTS: Resultados de ensayo:

Polyethylene HDPE (*)	Pipe ID	Thickness (mm)	Peel strength (N/mm) (**)		HDPE batch	MFR	Elongation at break (%)	Impact resist. (J/mm)	Indentation resis. (mm)
	Nº tubería	Espesor (mm)	Resistencia a pelado (N/mm)		Lote de HDPE	Índice de fluidez	Elongación a la rotura (%)	Resistencia al impacto (J/mm)	Resistencia a indentación
	332	3,63	33,9	16,1	2019-L2-000295	0,04	>444,09	-	0,01 23°C / 0,06 80°C
	47-360	3,82	-	-	-	-	-	-	-
	47-337	3,8	36,9	12,9	-	-	-	OK	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	Acc. criteria	> mm.	> 18 N/mm 23° C	> 5 N/mm 80° C	Acc. criteria	ΔMFR ± 20%	≥ 400%	≥ 7 J/mm - 23°C	≤ 0,2 mm- 23°C
	Criteria accept.				Criteria accept.				≤ 0,4 mm- 80°C
	Frequency	Every ten pipes	1 / shift	1 / shift	Frequency	1 / batch			
	Frecuencia	Cada diez tuberías	1 / turno	1 / turno	Frecuencia	1 / lote			
						HDPE batch	Flexibilidad	Hot water immersion (mm)	
						Lote de HDPE	Flexibility	Inmersión en agua caliente (mm)	
						2019-L2-000295	OK	No disbonding	No disbonding
-						-	-	-	
-						-	-	-	
-						-	-	-	
-						-	-	-	
-						-	-	-	
Acc. criteria			No cracks when bending at 0°C		Average disbonding ≤ 2mm		Maximum disbonding ≤ 3 mm		
Criteria accept.									
Frequency	1 / batch								
Frecuencia	1 / lote								


(*) Continuity test with satisfactory results in 100% of the coating surface. Residual magnetism < 30 G, Flexibility test
Ensayo de continuidad a 25 kV con resultado satisfactorio en el 100% de la superficie revestida. Magnetismo residual < 30 G
(**) Test performed at 23°C and 80°C
Ensayo realizado a 23°C y 80°C



TUBULAR SYSTEMS

Balka Steel Tubular Systems, S.L. - B01909111

CALIDAD

Manufacturer: ArcelorMittal Tubular Products Roman S.A. STEFAN CEL MARE STR, BL 15, SC. A, PARTER I, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/3.1/2004				Page 1/9 B 16901/1 28.11.2018		 ArcelorMittal					
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES				Total weight: 74.737 tons 0 lbs		Total Length: 2 644.97 meters 8 677.72 feet		Pieces 224	Bundles 36		
Buyer's reference: PO NO. -PC0052419 Contract: 50003868		Standard: API 5L ed.45-2012/ API 5L ed.46- 2018-PSL2; ASME B36.10M 2015; Pipes acc with Repsol specs and AMR Technical Offer Repsol 25.09.2018				Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet			
Item 1		Item Client 120 L-6-R		Hydro Test: Bar 196		PSI 2849		MPa 19.6		Time(sec) 10		Steel Grade: BN - PSL2	


Chemical Analysis(%)

Heat	Bulletin No.	Product Res.	Max Min	C	Mn	Si	S	P	Cr	Ni	Cu	Al	Mo	V	Nb	Ti	B	N
63490		Heat analysis		0.24	1.20	0.40	0.015	0.025	0.30	0.30	0.50	-	0.15	-	-	0.040	0.0010	-
63491		Heat analysis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63497		Heat analysis		0.15	0.84	0.21	0.005	0.010	0.12	0.10	0.20	0.025	0.03	0.009	0.001	0.001	0.0004	0.0070
63820		Heat analysis		0.14	0.84	0.21	0.005	0.012	0.12	0.10	0.20	0.022	0.02	0.009	0.001	0.001	0.0003	0.0074
63837		Heat analysis		0.15	0.81	0.24	0.004	0.007	0.10	0.08	0.15	0.024	0.02	0.008	0.001	0.001	0.0004	0.0046
63845		Heat analysis		0.15	0.84	0.22	0.003	0.006	0.11	0.07	0.16	0.025	0.02	0.011	0.002	0.001	0.0003	0.0070
63847		Heat analysis		0.14	0.86	0.24	0.003	0.008	0.13	0.12	0.17	0.034	0.03	0.016	0.001	0.001	0.0002	0.0046
63848		Heat analysis		0.15	0.83	0.23	0.004	0.010	0.01	0.07	0.20	0.038	0.02	0.010	0.001	0.001	0.0002	0.0068
63490	18-1918	Product analysis		0.14	0.86	0.24	0.004	0.011	0.13	0.08	0.18	0.032	0.02	0.009	0.001	0.001	0.0003	0.0070
63490	18-1918	Product analysis		0.15	0.86	0.23	0.002	0.007	0.10	0.09	0.16	0.036	0.03	0.012	0.001	0.001	0.0002	0.0076
63491	18-1918	Product analysis		0.15	0.84	0.21	0.004	0.008	0.10	0.08	0.20	0.026	0.02	0.008	0.002	0.001	0.0002	0.0080
63491	18-1918	Product analysis		0.15	0.83	0.21	0.003	0.008	0.10	0.08	0.20	0.026	0.02	0.008	0.002	0.001	0.0002	0.0078
63497	18-1918	Product analysis		0.15	0.86	0.22	0.005	0.010	0.11	0.09	0.19	0.021	0.02	0.008	0.002	0.001	0.0001	0.0083
63497	18-1918	Product analysis		0.15	0.86	0.22	0.005	0.010	0.11	0.09	0.19	0.021	0.02	0.008	0.002	0.001	0.0001	0.0081
63820	18-2015	Product analysis		0.16	0.83	0.25	0.002	0.007	0.11	0.09	0.17	0.030	0.02	0.007	0.002	0.001	0.0002	0.0066
63820	18-2015	Product analysis		0.16	0.83	0.25	0.002	0.007	0.11	0.09	0.17	0.029	0.02	0.007	0.002	0.001	0.0002	0.0068
63837	18-2008	Product analysis		0.15	0.83	0.24	0.003	0.007	0.09	0.07	0.15	0.026	0.02	0.009	0.001	0.001	0.0001	0.0073
63837	18-2008	Product analysis		0.15	0.83	0.23	0.002	0.007	0.10	0.07	0.15	0.026	0.02	0.009	0.001	0.001	0.0001	0.0071
63837	18-2008	Product analysis		0.14	0.86	0.24	0.002	0.009	0.17	0.11	0.16	0.034	0.02	0.015	0.001	0.001	0.0001	0.0063
63837	18-2008	Product analysis		0.15	0.85	0.24	0.002	0.009	0.17	0.11	0.16	0.034	0.02	0.015	0.001	0.001	0.0001	0.0061

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

C. CHIRIMBA
 04.11.2018
 29.11.2018

Quality Control Representative
 Eng. Danaila Ciprian

<div>Mills/Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR. BL 15, AC A, PARTER I, ROMANIA, NEAMT ROMANIA</div>		<div>MILL TEST CERTIFICATE</div> <div>According to EN 10204-3.1/2004</div>					Page 2/9		<div></div> <div>ArcelorMittal</div>	
							0140001/1			
							22.11.2018			
<div>Buyer: CUMADO S.A.</div> <div>CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN</div>		<div>SEAMLESS STEEL LINE PIPES</div>					<div>Total weight:</div> <div>74.737 tons</div> <div>0 lbs</div>	<div>Total Length:</div> <div>2 644.97 meters</div> <div>8 677.72 feet</div>	<div>Pieces</div> <div>224</div>	<div>Builds</div> <div>36</div>
							<div>Standard:</div> <div>API 5L x45-2017 / API 5L x46- 2018-PSL2; ASME B56.10M-2013; Pipes acc with Request specs and AMB Technical Offer Report 25-09-2018</div>			
<div>Buyer's reference:</div> <div>PO NO. 000022119</div> <div>Contract 50003040</div>		<div>Dimensions:</div> <div>108.30 x 7.11 mm</div> <div>4.25 X 0.280 inch</div>		<div>Schedule:</div> <div>40</div>		<div>Length:</div> <div>11.58 - 12.00 m</div>		<div>39.33 - 39.37 feet</div>		
<div>Item</div> <div>1</div>	<div>Item Name</div> <div>120 L-6-B</div>	<div>Hydro Test:</div>	<div>Bar</div> <div>156</div>	<div>PSL</div> <div>2349</div>	<div>MPa</div> <div>19.6</div>	<div>Time(sec)</div> <div>10</div>	<div>Steel Grade:</div> <div>BN - PSL2</div>			

Chemical Analysis(%)

FAM	Bulletin No.	Product Req.	Misc. Info	C	Mn	Si	S	P	Cr	Ni	Cu	Al	Mg	V	Nb	Ti	B	N
				0.24	1.20	0.40	0.015	0.025	0.30	0.30	0.50	-	0.15	-	-	0.040	0.0018	-
63845	18-2008	Product analysis		0.13	0.24	0.23	0.003	0.010	0.09	0.07	0.19	0.039	0.02	0.009	0.001	0.001	0.0001	0.0044
63845	18-2008	Product analysis		0.15	0.24	0.23	0.003	0.010	0.06	0.07	0.19	0.044	0.02	0.009	0.001	0.001	0.0001	0.0042
63847	18-2008	Product analysis		0.15	0.23	0.24	0.003	0.010	0.11	0.06	0.19	0.036	0.02	0.007	0.001	0.001	0.0002	0.0071
63847	18-2008	Product analysis		0.15	0.24	0.23	0.003	0.011	0.11	0.06	0.20	0.035	0.02	0.009	0.001	0.001	0.0002	0.0075
63848	18-2008	Product analysis		0.15	0.25	0.23	0.001	0.008	0.06	0.06	0.16	0.034	0.02	0.009	0.001	0.001	0.0001	0.0076
63848	18-2008	Product analysis		0.15	0.26	0.23	0.002	0.006	0.06	0.09	0.15	0.034	0.02	0.008	0.001	0.001	0.0001	0.0077

Chemical Analysis(%)


Test	Station No.	Project Req.	Max Min	Nb + V	Nb + Tl + V	CE DW
				0.000	-	0.43
63493		Heat analysis		0.010	0.011	0.34
63491		Heat analysis		0.010	0.011	0.33
63497		Heat analysis		0.009	0.010	0.31
63820		Heat analysis		0.013	0.014	0.33
63837		Heat analysis		0.017	0.018	0.34
63843		Heat analysis		0.011	0.012	0.31
63847		Heat analysis		0.018	0.011	0.33
63848		Heat analysis		0.013	0.014	0.34

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

[illegible]

Quality Control Responses could be
Edg. Dept. Jordan

Port number 1234 not open

Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR, BL 15, SC. A, PARTER I, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10340/3.1/2004		Page 3/9 B 14006/3 28.11.2008		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES		Total weight: 74.737 tons 0 lbs.	Total Length: 2 444.97 meters 8 027.32 Feet	Pieces: 224	Bundles: 36
Buyer's reference: PO NO. JPC0052419 Contract: 50003000		Standard: API 5L ed.45-2012/ API 5L ed.46- 2010-PSL2; ASME B36.10M-2013; Pipes acc. with Report spec and AH&R Technical Office Report 25.09.2013					
		Dimensions: 140.30 x 7.11 mm 6.621 X 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet	
		Hydro Test:	Bar: 196	PSI: 2849	MPa: 19.6	Time(sec): 10	
				Steel Grade:		BN - PSL2	

Chemical Analysis(%)

Item	Rolling No.	Product Req.	Max Min	Fe + V	Nb + Ti + V	CE ITW
				0.060	-	0.43
63490	18-1918	Product analysis		0.010	0.011	0.33
63498	18-1918	Product analysis		0.010	0.011	0.33
63491	18-1918	Product analysis		0.010	0.011	0.34
63491	18-1918	Product analysis		0.010	0.011	0.34
63497	18-1918	Product analysis		0.009	0.010	0.34
63497	18-1918	Product analysis		0.009	0.010	0.34
63520	18-2013	Product analysis		0.010	0.011	0.33
63520	18-2013	Product analysis		0.010	0.011	0.33
63537	18-2008	Product analysis		0.016	0.017	0.34
63537	18-2008	Product analysis		0.016	0.017	0.35
63545	18-2009	Product analysis		0.010	0.011	0.33
63545	18-2009	Product analysis		0.010	0.011	0.33
63547	18-2000	Product analysis		0.010	0.011	0.34
63547	18-2000	Product analysis		0.010	0.011	0.34
63548	18-2000	Product analysis		0.010	0.011	0.33
63548	18-2000	Product analysis		0.009	0.010	0.33


$$CE_{\text{Pcm}} = C + Si/30 + Mn/29 + Cu/20 + Ni/60 + Cr/20 + Mo/15 + V/10 + Sb$$


$$CE_S = C + Mn/5$$

$$CE_{\text{Int}} = C + Mn/6 + (Cr + Nb + V)/5 + (Ni + Cu)/15$$

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

C. Căpâraș
 O.R. + S.R.
 27.11.2018

Quality Control Representative
 Ing. Dan-Cristian


Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARIE STR, BL 15, SC. A, PARTER E, ROMANIA, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/3.1/2004		Page 4/7 B 15091/1 26.11.2018		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR, 2, MADRID, SPAIN		SEAMLESS STEEL LINE FW15		Total Weight: 74.737 tons 0 lbs	Total Length: 2.644.91 meters 8.677.73 Feet	Pieces: 224	Bundles: 36
Buyer's reference: PO NO. JCR052419 Contract: 50003002		Standards: API 5L-60-43-2007 / API 5L-60-46-2008-PSL2, ASTM E336, (044-3015): Pipes are with Regard specs and AMR Technical Order Surpass 25.09.2018					
		Dimensions: 368.38 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet	
		Hydro Test:	Bar: 196	PSI: 2849	MPa: 19.5	Time(sec): 10	Steel Grade: S45C - PSL2
Item: 1	Item Class: 120 L-G-R						


Tensile Test

Heat	Orientation	Length		Width/Diameter		Thickness		Section		Mechanical test Bulletin No.	YS MPa	YS (PSI/1000)	UTS MPa	UTS (PSI/1000)	E %	YS/UTS ratio: 0.90
		mm	inch	mm	inch	mm	inch	mm ²	inch ²							
63498	Longitudinal Flat	50.8	2	40.00	1.575	7.60	0.299	304.0	11.969	18-4304	568.00	53.4	517.00	75.0	40.90	0.71
63499	Longitudinal Flat	50.8	2	40.00	1.575	8.50	0.335	348.0	13.586	18-4361	551.00	50.9	491.00	71.2	41.10	0.71
63501	Longitudinal Flat	50.8	2	40.00	1.575	7.90	0.311	316.0	12.441	18-4361	562.00	52.5	513.00	74.4	40.80	0.71
63497	Longitudinal Flat	50.8	2	40.00	1.575	8.10	0.319	324.0	12.734	18-4361	568.00	53.4	512.00	74.3	40.60	0.72
63520	Longitudinal Flat	50.8	2	40.00	1.575	7.80	0.307	312.0	12.283	18-4330	554.00	51.3	489.00	70.6	39.90	0.73
63437	Longitudinal Flat	50.8	2	40.00	1.575	7.60	0.299	304.0	11.969	18-4314	564.00	52.8	507.00	73.5	38.60	0.72
63845	Longitudinal Flat	50.8	2	40.00	1.575	8.30	0.327	332.0	13.071	18-4314	591.00	56.7	536.00	77.7	38.30	0.73
63845	Longitudinal Flat	50.8	2	40.00	1.575	8.60	0.339	344.0	13.543	18-4315	573.00	54.1	513.00	74.4	40.30	0.73
63845	Longitudinal Flat	50.8	2	40.00	1.575	8.20	0.323	328.0	12.913	18-4317	575.00	54.1	514.00	74.5	38.60	0.73
63847	Longitudinal Flat	50.8	2	40.00	1.575	7.70	0.303	308.0	12.126	18-4314	593.00	57.0	550.00	78.8	40.00	0.73
63847	Longitudinal Flat	50.8	2	40.00	1.575	8.30	0.327	332.0	13.071	18-4316	568.00	53.4	509.00	73.8	41.30	0.72
63847	Longitudinal Flat	50.8	2	40.00	1.575	8.50	0.327	332.0	13.071	18-4317	570.00	53.7	512.00	74.3	39.00	0.72
63848	Longitudinal Flat	50.8	2	40.00	1.575	8.20	0.323	328.0	12.913	18-4314	583.00	55.5	528.00	76.6	41.20	0.73
63848	Longitudinal Flat	50.8	2	40.00	1.575	7.90	0.311	316.0	12.441	18-4320	407.00	39.0	364.00	81.8	38.50	0.72

G. Căpitanu
 PRA. TSK
 27.11.2018

Quality Control Representative
 Eng. Diana Căpitanu

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR. BL 13, SC. A, PARTER I, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/1.03004				Page 1/9 B 16801/1 28.10.2018		 ArcelorMittal			
Buyer: OUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PROS				Total weight: 74.737 tons 0 lbs		Total Length: 2 644.97 meters 8 677.72 Feet		Pieces: 224 Bundles: 36	
Buyer's reference: PO NO. JPC0052419 Contract: 504633408		Standard: API 5L 65-60-2012 API 5L 60-60-2015 PSL2, ASME B36.10M-2015; Pipes acc. with Request specs and AMR Technical Office Request 25.09.2018				Dimensions: 168.30 x 7.11 mm 6.625 x 0.280 inch		Schedule: 40		Length: 11.56 - 12.00 m 37.73 - 39.37 Feet	
Item: 1 Item Client: 120 L-6- R		Hydro Test:		Bar: PSL2 PSI: 2849		MPa: 19.6		Time(sec): 10		Steel Grade: BN - PSL2	


Impact Test

Heat	Impact Test Bulletin No.	Orientation	Size (mm)	Temp. (°C)	Req. KV (min. J)	KV values (J)			Req. Avg. (min. J)	Avg. fracture energy (J)	KCU min. 1cm/ T.°C				Shore Area min. %			Lateral Expansion min. mm		
63490	18-4943	Longitudinal	10x5x55	+20	14.0	100	91	92	-	94	-	-	-	-	90	90	90	0.75	0.76	0.77
63498	18-4993	Longitudinal	10x5x55	+20	14.0	93	103	117	-	104	-	-	-	-	90	90	90	0.73	0.86	1.00
63491	18-4993	Longitudinal	10x5x55	+20	14.0	87	92	86	-	88	-	-	-	-	90	90	90	0.73	0.77	0.72
63497	18-5093	Longitudinal	10x5x55	+20	14.0	101	94	93	-	97	-	-	-	-	90	90	90	0.83	0.80	0.84
63820	18-7213	Longitudinal	10x5x55	+20	14.0	102	93	93	-	97	-	-	-	-	90	90	90	0.85	0.77	0.73
63837	18-7215	Longitudinal	10x5x55	+20	14.0	106	106	103	-	106	-	-	-	-	90	90	90	0.89	0.91	0.87
63845	18-7215	Longitudinal	10x5x55	+20	14.0	91	91	97	-	93	-	-	-	-	90	90	90	0.76	0.74	0.81
63845	18-7216	Longitudinal	10x5x55	+20	14.0	88	94	92	-	92	-	-	-	-	90	90	90	0.74	0.72	0.76
63845	18-7217	Longitudinal	10x5x55	+20	14.0	99	93	94	-	95	-	-	-	-	90	90	90	0.82	0.78	0.79
63847	18-7215	Longitudinal	10x5x55	+20	14.0	95	94	95	-	94	-	-	-	-	90	90	90	0.88	0.79	0.79
63847	18-7216	Longitudinal	10x5x55	+20	14.0	93	93	108	-	95	-	-	-	-	90	90	90	0.77	0.77	0.83
63847	18-7218	Longitudinal	10x5x55	+20	14.0	92	105	93	-	97	-	-	-	-	90	90	90	0.77	0.89	0.78
63848	18-7215	Longitudinal	10x5x55	+20	14.0	90	91	93	-	95	-	-	-	-	90	90	90	0.83	0.77	0.80
63848	18-7232	Longitudinal	10x5x55	+20	14.0	83	82	82	-	84	-	-	-	-	90	90	90	0.68	0.67	0.72


Hardness Test

Heat	Hardness Test Bulletin No.	HB max. 215	HV 10 max.	HV 10 max.					HRC max.
				OD	Midwall	ID	End A	End B	
63499	18-3589	140;149;150;147	-	-	-	-	-	-	-
63498	18-3589	150;148;147;149	-	-	-	-	-	-	-

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

C. Căpănuș
 Ing. TSC
 24.11.2018


Quality Control Representative
 Ing. Danuș Căpănuș


Manufacturer: Accelothol Tubular Products Romania S.A. STEFAN CEL MARE STR, BL. 13, SC. A, PARTER I, ROMANIA, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/3.1/2004		Page 6/9 B 1608478 28.12.2015		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES		Total weight: 74.737 tons 0 lbs	Total Length: 2.644.97 meters 8.677.72 feet	Pieces: 224	Bundles: 36
Buyer's reference: PO NO.: PC0052419 Contract: 51413362		Standard: API 5L ed.45-2012/ API 5L ed.46-2010-PSL2; ASME B36.10M-2015; Pipes are with Repeat specs and ASME Technical Order August 21.09.2013		Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40	
		Length: 11.50 - 12.00 m 37.73 - 39.37 feet					
Hydro Test:		Bar 196	PSI 2800	MPa 19.6	Time (min) 10	Steel Grade: EN - PSL2	


Hardness Test

Heat	Hardness Test Ballistic No.	FTB max. 215	HV 10 max.	HV 10 min.					FTRC max.
				OD	Midwall	ID	End A	End B	
63490	18-3641	164;166;165;163	-	-	-	-	-	-	-
63490	18-3641	160;163;164;163	-	-	-	-	-	-	-
63491	18-3641	162;160;163;167	-	-	-	-	-	-	-
63493	18-3641	160;161;163;162	-	-	-	-	-	-	-
63497	18-3641	162;162;164;163	-	-	-	-	-	-	-
63497	18-3641	162;161;163;164	-	-	-	-	-	-	-
63829	18-3792	158;156;157;159	-	-	-	-	-	-	-
63829	18-3792	157;158;156;158	-	-	-	-	-	-	-
63837	18-3792	161;160;159;162	-	-	-	-	-	-	-
63837	18-3792	160;158;159;161	-	-	-	-	-	-	-
63845	18-3791	163;162;160;161	-	-	-	-	-	-	-
63845	18-3791	162;161;160;161	-	-	-	-	-	-	-
63845	18-3792	162;161;163;164	-	-	-	-	-	-	-
63845	18-3792	163;161;162;161	-	-	-	-	-	-	-
63845	18-3793	165;164;163;162	-	-	-	-	-	-	-
63845	18-3793	164;162;163;161	-	-	-	-	-	-	-
63847	18-3791	161;159;160;162	-	-	-	-	-	-	-
63847	18-3791	159;158;160;161	-	-	-	-	-	-	-
63847	18-3792	158;159;161;160	-	-	-	-	-	-	-

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

2- certified
 08.12.2015
 20.12.2015

Quality Control Representative
 E. D. D. D. D.

Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR, DL 15, SC. A, PARTER I, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/3.1/2004		Page 1/9 B (4002/3) 28.11.2018		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPE		Total weight: 74,737 tons 0 lbs	Total Length: 2 644.97 meters 8 677.72 feet	Pieces 234	Diameter 36
Buyer's reference: PO NO. JPC0052419 Contract: S0003068		Standard: API 5L X46-2013/ API 5L X46-2013-PSL2; ASME B36.10M-2013; Nippon steel with Report upon and ASME Testimonial Office Report 25.09.2018					
		Dimensions: 168.30 x 7.11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet	
Heat 1		Item Code 120 L-4-R		Hydro Test: Bar 196	PSI 2849	MPa 19.6	Tensile (ksi) 80
				Steel Grade: BN - PSL2			

Hardness Test

Heat	Hardness Test Reference No.	FB max.215	HV 90 max.-	HV 90 max.-					HRC max.-
				OD	Midwall	ID	End A	End B	
63847	18-3792	160;159;158;161	-	-	-	-	-	-	-
63847	18-3794	162;161;159;160	-	-	-	-	-	-	-
63847	18-3794	159;160;162;160	-	-	-	-	-	-	-
63848	18-3792	159;157;158;159	-	-	-	-	-	-	-
63848	18-3792	158;159;157;157	-	-	-	-	-	-	-
63848	18-3815	163;164;162;161	-	-	-	-	-	-	-
63848	18-3815	162;163;161;160	-	-	-	-	-	-	-

Heat



Heat	Pieces	Length (m)	Weight (kg)
63490	6	-	-
63491	1	-	-
63497	6	-	-
63520	16	-	-
63537	36	-	-
63843	70	-	-
63847	51	-	-
63848	48	-	-


We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, Rev.9

C. CHIRIAC
 D/NO. TSK
 29.11.2018

R


 Quality Control Representative
 Eng. Dorinel Ciprian


Manufacturer: ArcelorMittal Tubular Products Roman S.A. STEFAN CEL MARE STR. BL 15, SC. A, PARTER I, ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10245/3.1/2004		Page 8/9 B 16094/1 28.11.2018		 ArcelorMittal			
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR, 2, MADRID, SPAIN		SEAMLESS STEEL LINE PIPES		Total weight: 74.737 tons 16 lbs		Total Length: 2 644.97 meters 8 677.22 feet		Pieces 124	Bundles 16
Buyer's reference: PO NO. JC0052419 Contract: 28003046		Standard: API 5L ed.43-2012/ API 5L ed.43-2012-PSL2; ASME B34.10M-2015; Pipes are with Endcap spew and AMR Technical Order Report 20.09.2018							
		Dimensions: 168.30 ± 2.11 mm 6.625 X 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet			
Heat: 1 Heat Client: 120 L-G R		Hydro Test: Bar 196		PSI 2849		MPa 19.6		Time(sec) 10	
						Steel Grade BN - PSL2			

Remarks:

PIPES IN COMPLIANCE WITH PED: 2014-68-EU/15.05.2014, ANNEX I, SECTION 4.3. & 7.5
 Manufacturing process – hot rolling.

Hot finished, steel is fully killed and produced by electric furnaces, source G000108.

Visual inspection and dimensional check without objection.

Heat treatment: normalizing at temperature 910 - 940°C, time soaking 4 min.

NDT full body:

-100% ultrasonic testing in accordance with ASTM E213 - Le +Li (12.5 % from W.T.) – satisfactory.

NDT for the pipe ends:

- ultrasonic testing : Le+Li (12.5 % from W.T.) – satisfactory.

- detection of laminar imperfection on the pipe ends, surface coverage - satisfactory.

- bevel at each pipe end have been inspected for defects by wet maganical particle, without stratification – satisfactory.

- ultrasonic inspection to verify that the 50 mm wide zone at each pipe end is free of such laminar imperfection.

Hydrostatic test hold for 10 sec. no leakage noticed.

Hydrostatic test hold for 20 sec. no leakage noticed. (for a percentage of 70% of pipes):

serial: 2-18-47-1381; 2-18-47-1476; 2-18-47-1398; 2-18-47-1406; 2-18-47-1469; 2-18-47-1388; 2-18-47-1392; 2-18-47-1483; 2-18-47-1387;

2-18-47-1438; 2-18-47-1455; 2-18-47-1488; heat: 63837

serial: 2-18-47-332; 2-18-47-372; heat: 63847

serial: 2-18-47-519; 2-18-47-591; 2-18-47-520; heat: 63848

serial: 2-18-47-1518; 2-18-47-1516; 2-18-47-1515; 2-18-47-1361; heat: 63820

serial: 2-18-47-483; 2-18-47-402; heat: 63845

NDT After hydrostatic test, (max.3 pcs)


serial : 2-18-47-426; 2-18-47-413; 2-18-47-440 ;heat : 63845

serial : 2-18-47-523; 2-18-47-518; heat : 63848

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

Formular 12A, rev.9

C. Căpînuș
 CEO, T.B.A.
 29.11.2018
 R
 L


 Quality Control Representative
 Eng. Dumitru Clapă

A01 Manufacturer's Brand Rusco CarbonSteel S.p.A. Via Salaria Carboni, 1 66100 CHETI	A02 Invoice No. / Certificate Date / Number 2186/2018/A -- 18/09/2018 Delivery Note /...	A04 Purchaser 990195 CUNADO S.A.U. CL CAMINO DEL OLIVAR, 2 28806 ALCALA DE HENARES-MAADRIN ES	A07 Purchase Order P.O. PC0052133 - 05/09/2018	A30 RGS Reference 565/2018 - 07/09/2018 /		
B01 Product Description Longitudinally "HFV" welded carbon steel pipes manufactured according to API 5L Gr.BM PS2 450N Ed. Internally and externally bare, bevelled ends.			B11 Diameter (mm) 355,6	B12 Wall Thickness (mm) 6,40	B13 Length (m) 12,00	B03 Steel Grade GR.BM
			B02 Normative Reference API 5L - PS2			
			B14 Number of pipe 32	B15 Masses 384,000	B16 Weight (kg)	

Chemical Composition - Product Analysis

Identification Test Pieces			Al	C	Cr	Cu	Mn	Mo	Nb	Ni	P	S	Si	Sn	Ti	V	V+Nb+Ti	CEQ
CO2 Prev.	B07 Pipe No.	B08 Cert No.																
				0,28	0,10	0,50	1,20	0,15	0,01	1,30	0,015	0,015	0,45		0,04	0,04		0,43
013		1201206		0,305	0,049	0,058	1,007	0,003	0,304	0,030	0,013	0,003	0,217		0,001	0,004		0,290
014		1201206		0,102	0,049	0,057	1,013	0,007	0,304	0,030	0,011	0,004	0,215		0,001	0,004		0,288

Tensile Test								Charpy Impact Test														
Identification Test Pieces				CO2 Test Type	C12 Rm N/mm² Min 475 Min 455	C11 Rm0,5 N/mm² Min 245 Min 450	C14 Rm0,5/3m Min 0,95	C13 A% Min 33,75	Identification Test Pieces			CO2 Test Type	CO3 °C	CO3 Sec. mm²	Individual Values			Average Min 27	Individual values			Average Min 33,75
CO2 Test Pieces	B07 Pipe No.	B08 Cert No.	CO2 Test Pieces						B07 Pipe No.	B08 Cert No.	(1)				(2)	(3)	Min 27	(1) J/cm²	(2) J/cm²	(3) J/cm²	Min 33,75	
015		1201206	TC	407,85	330,15	0,66	27,36	15		1201206	TC	0,0	40,0					219,5	212,5	218,3	216,9	
015		1201206	TS	521,78																		

Legend: LL=Longitudinal on pipe body - TC=Transversal on pipe body - TS=Transversal on weld seam

HYDRAULIC TEST: pressure 53 bar. Duration 5 seconds. Results positive on 100% of pipes.

Test Type	Result
Visual examination and Dimensional testing	POSITIVE
Flattening test and Metallographic Test	POSITIVE
Non Destructive Testing 100% ultrasonic test according to API 5L level N30	POSITIVE
Maximum temperature for heat treatment of the weld seam : 900°C	POSITIVE
013) CE Pcm = 0,173 % (Max 0,25 %) 014) CE Pcm = 0,170 % (Max 0,25 %)	POSITIVE

I prodotti forniti sono conformi ai requisiti dell'ordine. / The products supplied are in compliance with the requirements of the order.

A01 Manufacturing Firm Riveco General Sider S.p.A. Via Marino Carboni, 1 06100 CHETI	A02 Inspection Certificate Number 2188/2018/A - 19/09/2018 Delivery Note /	A05 Purchaser 990195 CUNADO S.A.U. CL CAMINO DEL OLIVAR, 2 28806 ALCAÑA DE HENARES-MADRID ES	A07 Purchase Order # O. PC0052133 - 05/09/2018	A10 RGS Reference 966/2018 - 01/09/2018 /				
B11 Product Description Longitudinally "HFW" welded carbon steel pipes manufactured according to API 5L GR 60M PS12 45th Ed. Internally and externally bare, bevelled ends.			B11 Diameter (mm) 355,6	B12 Wall Thickness (mm) 6,40	B13 Length (m) 12,00	B02 Steel grade GR. 60M		
			B03 Normative Reference API 5L - PS12 <table border="1"> <tr> <td data-bbox="1400 486 1624 555"> B10 Number of pipe 32 </td> <td data-bbox="1624 486 1892 555"> B15 Masses 384,200 </td> <td data-bbox="1892 486 2107 555"> B16 Weight (kg) / </td> </tr> </table>			B10 Number of pipe 32	B15 Masses 384,200	B16 Weight (kg) /
B10 Number of pipe 32	B15 Masses 384,200	B16 Weight (kg) /						

 Riveco General Sider S.p.A.
 Quality Department



EN 10204 2004 / 3.1

CERTIFICADO DE CALIDAD
MILL TEST CERTIFICATE

[illegible]

THE EFFECTS AND THE NATURE OF CATALYTIC TEMPERATURES FOR CATALYTIC ACTIVITY OF ZINC AND ZINC OXIDE

Page 103

N° 0000359684/4 Rev. 000

CLIENT: CUSATTO S.p.A. - 45121

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BY

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411. 31471-81481,
412. 31482-31492

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INTERIMOS
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THESE, 1994

凡此一切，乃歐戰以來
世界各國之通例也。

2014.04.22
수요일

2017年12月10日
2017年12月10日
2017年12月10日

[illegible]PROTEOLYTIC SUFFICIENT
FOR LINDSEY

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1. $\mathcal{H}^1(\mathbb{R}^n)$
2. $\mathcal{H}^1(\mathbb{R}^n)$ is a Banach space
3. $\mathcal{H}^1(\mathbb{R}^n)$ is a Banach space

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SACID: 5400103250 17085 110 2017
ASSN: 1004887 2614006 Y:
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RECEIVED BY THE DIRECTOR
JAN 11 1968

DOI: 10.13208/j.issn1006-686x.2015.01.001
收稿日期: 2015-01-25; 修回日期: 2015-02-11

PALANQUILL A.
201-213-8050 ext. 691

(4) 大正十一年四月二十三日
(大正十一年四月二十三日)

$\text{C}_{60}\text{H}_8\text{N}_8\text{O}_4$: 114.1 g/mol; 97%
mp: 130–131°C.

SILVIO A.S.
S.A.F.E. S.p.A.

이제 이 책을 읽으십시오

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 5000 2112

19.10.05 A100 510.7:50.51:001.5(1.01.02.03.04.05.06.07.08.09.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30.31.32.33.34.35.36.37.38.39.40.41.42.43.44.45.46.47.48.49.50.51.52.53.54.55.56.57.58.59.60.61.62.63.64.65.66.67.68.69.70.71.72.73.74.75.76.77.78.79.80.81.82.83.84.85.86.87.88.89.90.91.92.93.94.95.96.97.98.99.100.101.102.103.104.105.106.107.108.109.110.111.112.113.114.115.116.117.118.119.120.121.122.123.124.125.126.127.128.129.130.131.132.133.134.135.136.137.138.139.140.141.142.143.144.145.146.147.148.149.150.151.152.153.154.155.156.157.158.159.160.161.162.163.164.165.166.167.168.169.170.171.172.173.174.175.176.177.178.179.180.181.182.183.184.185.186.187.188.189.190.191.192.193.194.195.196.197.198.199.200.201.202.203.204.205.206.207.208.209.210.211.212.213.214.215.216.217.218.219.220.221.222.223.224.225.226.227.228.229.230.231.232.233.234.235.236.237.238.239.240.241.242.243.244.245.246.247.248.249.250.251.252.253.254.255.256.257.258.259.260.261.262.263.264.265.266.267.268.269.270.271.272.273.274.275.276.277.278.279.280.281.282.283.284.285.286.287.288.289.290.291.292.293.294.295.296.297.298.299.300.301.302.303.304.305.306.307.308.309.310.311.312.313.314.315.316.317.318.319.320.321.322.323.324.325.326.327.328.329.330.331.332.333.334.335.336.337.338.339.340.341.342.343.344.345.346.347.348.349.350.351.352.353.354.355.356.357.358.359.360.361.362.363.364.365.366.367.368.369.370.371.372.373.374.375.376.377.378.379.380.381.382.383.384.385.386.387.388.389.390.391.392.393.394.395.396.397.398.399.400.401.402.403.404.405.406.407.408.409.410.411.412.413.414.415.416.417.418.419.420.421.422.423.424.425.426.427.428.429.430.431.432.433.434.435.436.437.438.439.440.441.442.443.444.445.446.447.448.449.450.451.452.453.454.455.456.457.458.459.460.461.462.463.464.465.466.467.468.469.470.471.472.473.474.475.476.477.478.479.480.481.482.483.484.485.486.487.488.489.490.491.492.493.494.495.496.497.498.499.500.501.502.503.504.505.506.507.508.509.510.511.512.513.514.515.516.517.518.519.520.521.522.523.524.525.526.527.528.529.530.531.532.533.534.535.536.537.538.539.540.541.542.543.544.545.546.547.548.549.550.551.552.553.554.555.556.557.558.559.560.561.562.563.564.565.566.567.568.569.570.571.572.573.574.575.576.577.578.579.580.581.582.583.584.585.586.587.588.589.590.591.592.593.594.595.596.597.598.599.600.601.602.603.604.605.606.607.608.609.610.611.612.613.614.615.616.617.618.619.620.621.622.623.624.625.626.627.628.629.630.631.632.633.634.635.636.637.638.639.640.641.642.643.644.645.646.647.648.649.650.651.652.653.654.655.656.657.658.659.660.661.662.663.664.665.666.667.668.669.670.671.672.673.674.675.676.677.678.679.680.681.682.683.684.685.686.687.688.689.690.691.692.693.694.695.696.697.698.699.700.701.702.703.704.705.706.707.708.709.710.711.712.713.714.715.716.717.718.719.720.721.722.723.724.725.726.727.728.729.730.731.732.733.734.735.736.737.738.739.740.741.742.743.744.745.746.747.748.749.750.751.752.753.754.755.756.757.758.759.760.761.762.763.764.765.766.767.768.769.770.771.772.773.774.775.776.777.778.779.780.781.782.783.784.785.786.787.788.789.790.791.792.793.794.795.796.797.798.799.800.801.802.803.804.805.806.807.808.809.810.811.812.813.814.815.816.817.818.819.820.821.822.823.824.825.826.827.828.829.830.831.832.833.834.835.836.837.838.839.840.841.842.843.844.845.846.847.848.849.850.851.852.853.854.855.856.857.858.859.860.861.862.863.864.865.866.867.868.869.870.871.872.873.874.875.876.877.878.879.880.881.882.883.884.885.886.887.888.889.890.891.892.893.894.895.896.897.898.899.900.901.902.903.904.905.906.907.908.909.910.911.912.913.914.915.916.917.918.919.920.921.922.923.924.925.926.927.928.929.930.931.932.933.934.935.936.937.938.939.940.941.942.943.944.945.946.947.948.949.950.951.952.953.954.955.956.957.958.959.960.961.962.963.964.965.966.967.968.969.970.971.972.973.974.975.976.977.978.979.980.981.982.983.984.985.986.987.988.989.990.991.992.993.994.995.996.997.998.999.1000.1001.1002.1003.1004.1005.1006.1007.1008.1009.1010.1011.1012.1013.1014.1015.1016.1017.1018.1019.1020.1021.1022.1023.1024.1025.1026.1027.1028.1029.1030.1031.1032

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100% NORMALIZADO DE LAMINACIÓN EXPANDIDO AL AIRE / 100% NORMALIZING ROLLED + UNWIND

DESCRIPTION SLAMINSTRIB 2 405mg/500mg (100mg/500mg) HCl tablets

ITEM NAME DESCRIPTION	QUANTITY INVENTORY	UNIT PRICE	TOTAL AMOUNT	TOTAL AMOUNT
ITEM 1	100	1.00	100.00	100.00
ITEM 2	50	2.00	100.00	200.00
TOTAL				300.00

Allyson O'Leary
1600 Locust Avenue
Berkeley, CA 94704


Abstract

TUROS REUNIDOS GROUP «SBL» TUROS GARANTIZA QUE TODOS LOS TUROS CUMPLEN POR ESTE CERTIFICADO CON TODOS LOS REQUISITOS DEL MEDIO Y CON LAS ESPECIFICACIONES AGRÍCOLAS MENCIONADAS.

Abstract: The purpose of this study was to determine the effect of a 12-week training program on the physical fitness and health-related quality of life (HRQL) of sedentary, middle-aged women. The study was a randomized, controlled trial. The subjects were 40 sedentary, middle-aged women, who were randomly assigned to either a 12-week training program or a control group. The training program consisted of three sessions per week, each lasting 45 minutes, and included aerobic and strength training. The control group did not participate in any training program. The primary outcome measure was the change in HRQL, measured using the SF-36 questionnaire. The secondary outcome measures were changes in physical fitness, measured using a series of physical fitness tests. The results showed that the training program had a significant positive effect on HRQL, with the training group showing a significant increase in the physical function, role-physical, and bodily pain subscales. The training program also had a significant positive effect on physical fitness, with the training group showing significant improvements in aerobic capacity, muscle strength, and endurance. The control group showed no significant changes in HRQL or physical fitness. The results of this study suggest that a 12-week training program can improve the physical fitness and HRQL of sedentary, middle-aged women.

1. Fe^{2+} (aq) + H_2O_2 (aq) \rightarrow Fe^{3+} (aq) + H_2O (l)
 2. Fe^{2+} (aq) + H_2O_2 (aq) + H^+ (aq) \rightarrow Fe^{3+} (aq) + H_2O (l)
 3. Fe^{2+} (aq) + H_2O_2 (aq) + H^+ (aq) \rightarrow Fe^{3+} (aq) + H_2O (l)
 4. Fe^{2+} (aq) + H_2O_2 (aq) + H^+ (aq) \rightarrow Fe^{3+} (aq) + H_2O (l)
 5. Fe^{2+} (aq) + H_2O_2 (aq) + H^+ (aq) \rightarrow Fe^{3+} (aq) + H_2O (l)

24/07/2023

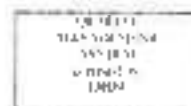
	Client: (/Nº de)	REPSOL POLIMEROS UNIPessoal, LDA		Pedido: (/Entrega)	4500034667	Forma: (/Sistema)	EXPL299350
	Deposito: (/Descrição)	4º STD TUBO ACSN SOLD. ROSC.C/MAN A-106 GR.B / GALV.		S/Nº: (/Mett)	250 L-11 PMP010C144		
	Calcular: (/Analis.)	128833-16/44149	Cenário: (/Descrição)	271,88	Adicionar: (/Descrição)	/250/250	Página Nº: (/Mett)



TUBOS REUNIDOS GROUP, S.L.U
Barrio Sagarrihai, 2 - 01470 AMURRIO (Spain)
MIL: TUBOS

EN 10219:2006 / 3.1

CERTIFICADO DE CALIDAD
MIL TEST CERTIFICATE



PAGE: 2 / 3

Nº 0000359084/4 Rev. 000

ENSAYOS NO DESTRUCTIVOS / NON DESTRUCTIVE TESTS

ENSAYO / TEST	CONTROL / CONTROL	REQUISITOS / REQUIREMENTS	RESULTADO / RESULT
VISUAL Y DIMENSIONAL VISUAL & DIMENSIONAL	OK		OK
IMPULSIVIDAD IMPULSIVITY	OK	24200 PSI 5 SEC	OK
CORRIENTES INDUCIDAS EDDY CURRENTS	OK	ASIN EMBUDO EN 200 HRS/2	OK
MAGNETISMO RESIDUAL RESIDUAL MAGNETISM		MAX 30 GAUSS	

ENSAYOS TECNOLÓGICOS Y METALÚRGICOS / TECHNOLOGICAL AND METALLURGICAL TESTS

APLASTADO FLATTENING	ACI. M. PULVERIZADO 10219-2-OK	ABOCADO FLANGE	ACI. M. PSI 1250 EN 10219-2-OK
-------------------------	-----------------------------------	-------------------	-----------------------------------

ANÁLISIS DE COQUETE / COKE ANALYSIS

	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Fe	Nb	C.B.
MIN		0,20	0,15								0,0200			
MAX	0,20	1,05	0,40	0,020	0,020	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,41
12457	0,1200	0,96	0,26	0,005	0,005	0,005	0,130	0,000	0,000	0,000	0,000	0,000	0,000	0,38

ANÁLISIS DE PLACAS / PLATE ANALYSIS

	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Fe	Nb	C.B.
MIN		0,20	0,15								0,0200			
MAX	0,20	1,05	0,40	0,020	0,020	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,41
12457	0,1200	0,96	0,26	0,005	0,005	0,005	0,130	0,000	0,000	0,000	0,000	0,000	0,000	0,38
12457	0,1200	0,96	0,26	0,005	0,005	0,005	0,130	0,000	0,000	0,000	0,000	0,000	0,000	0,38

PROPIEDADES

	001	002	003
MIN			
MAX	0,200	0,000	1,000
12457	0,200	0,000	0,501
12457	0,200	0,000	0,501

01
02
03

AMURRIO - 01470-2022

CONTROL DE CALIDAD DE TUBOS REUNIDOS

GROUP
CERTIFICADO
DE CALIDAD
DE TUBOS REUNIDOS

2023/07/24

24.07.2023

	Cliente: (Customer)	REPSOL POLIMEROS UNIPessoal, LDA	Producto: (Delivery)	4500034667	Grupo: (Reference)	EXP129558
	Descripción: (Description)	4" STD TUBO AC SIN SOLD. ROSC./MAN A-106 GR.B / GALV.	Wt/lt: (Weight)	250 L-11 PPG010C144		
	Código: (Code)	128933-16/44149	Cantidad: (Quantity)	271,88	Almacén: (Warehouse)	/250/250
					Fabrica NP: (Number of)	



TUBOS REUNIDOS GROUP, S.L.U
Barrio Sagarribal, 2 - 01470 AMURRIO (Spain)
Mill: TUBOS

EN 10204:2004 / 3.3

CERTIFICADO DE CALIDAD
MILL TEST CERTIFICATE

QUALITY
MANAGEMENT
SYSTEM
REGISTERED
1994

PAG. 3 / 3

Nº 0000359684/4 Rev. 000

ENSAYOS DE TRACCIÓN / TENSILE TEST

COLADA Casting	Nº	L/T (1)	TP (2)	DIMENSION (mm)	L.ELAST. YIELD POINT (Mpa) (3)	R.TRACC. Tensile strength (Mpa) (4)	ALARG. Elongation (%) (5)	Reducción Reduction of Area (%) (6)	DUREZA Hardness (HRC)	MEDIA MEAN
2401 MAY.					265	415 570	25			99
128833	1	L	P	25.10 x 6.500	210	480	30	79	37	77
128833	2	L	P	25.10 x 6.500	338	478	30	76	37	77

(1) L = LONGITUDINAL / T = TRANSVERSAL
(2) P = Full size pipe / F = Strip specimen / C = Cylindrical / F = Flat specimen
(3) Yield point (0.5%)
(4) L₀ = 2" (50 mm)

ENSAYOS DE IMPACTO - CHARPY V / IMPACT TEST

COLADA Casting	Nº	L/T (1)	DIMENS (mm)	Tª (°C)	RESILIENCIA Impact Energy (J)	AVG (J)	AREA DUCTIL SEAL AREA (%)	ESTRUCCIÓN RCD Adela (%)
			10	10.00	20	23	7	23
128830	1	L	40	5.00	50	35	17	07

(1) L = LONGITUDINAL / T = TRANSVERSAL

ANEXOS / ANNEX

FORMA WELDED
RADIATION TEST
MERCURY TEST
NO WELD REPAIR

TERMINES THAT ACC TO ISO 4702-1:2019

SEAL	T P	DIMENSION (mm)	YIELD POINT (Mpa)	ELONGATION (%)	REDUCTION (%)
128833	L	25.10 x 6.500	265	492	32.00
128833	L	25.10 x 6.504	345	497	31.00
128793	L	25.10 x 6.500	265	502	30.40
128793	L	25.10 x 6.500	362	492	32.00
128833	L	25.10 x 6.504	345	463	30.00
128833	L	25.10 x 6.500	345	476	30.00
128833	L	25.10 x 6.504	345	482	30.00
128833	L	25.10 x 6.504	345	492	31.00

10 = P PROPORTIONAL = 5.65 X DOM
YIELD POINT (MP 0.5%)

AMURRIO 04.03.2021

CONTROL DE CALIDAD DE TUBOS REUNIDOS
GROUP
MILL TUBOS
TUBOS REUNIDOS GROUP QUALITY CONTROL
Barrio Sagarribal

24.07.2023

	Cliente (Client)	REPSOL POLIMEROS UNIPessoal, LDA			Defecto (Defect)	4500034667	Envío (Shipment)	EXP1294550
	Descripción (Description)	4" STD TUBO AC SIN SOLD. ROSC C/MAN A-106 GR.B / GALV.			Spesif. (1) / Ref	250 L-11 PPG010C144		
	Código (Code)	128833-16/44149		Control (Control)	271.88	Alcance (to Run in)	/250/250	


 Galvexsa POLIGONO INDUSTRIAL "DISTRIBUIDORES S.A.P. DE GALVEXSA" (A.C.) QUALITY SYSTEM CERTIFIED BY ISO 9001:2015 STANDARD NO. ES09/7330	CERTIFICADO DE CALIDAD QUALITY CERTIFICATE CERTIFICATE OF COMPLIANCE WITH THE ORDER	Reg. 32 Edic. 04. Julio 2017
	CLIENTE: CURADO (Customer) REF. GALVEXSA <u>Albarán 759/23</u> (Ref. Galvexsa) REF. CLIENTE: ME0012393-Tr.02 (Ref. Customer)	
CERTIFICADO Nº: 0226/23		FACTURA: (Invoice nº) FECHA: <u>09/03/2023</u>

GALVEXSA. Empresa dedicada a la galvanización en caliente por inmersión. CERTIFICA QUE:
 (GALVEXSA. Company dedicated to the hot dip galvanizing. CERTIFIES THAT:)


- La calidad del zinc usado es conforme a la norma UNE-EN 1179.
 (The quality of the zinc used is according to standard UNE-EN 1179)
- Los materiales indicados cumplen las normas de galvanizado UNE-EN ISO 1461 y ASTM 123.
 (Materials meet the standards of galvanized UNE-EN ISO 1461 y ASTM 123)

TABLA 3. UNE-EN ISO 1461. Espesores mínimos admisibles del espesor del recubrimiento galvanizado.
 (Minimum allowable thickness of the galvanized coatings)

Tipo de placa y espesor (Plate size and thickness)	Espesor local en µm (valor mínimo) (Local thickness in µm (minimum value))	Espesor medio en µm (valor mínimo) (Mean thick in µm (minimum value))
Acero/Steel > 6 mm	70	85
Acero/Steel > 3 mm hasta/until 6 mm	55	70
Acero/Steel ≥ 1,5 mm hasta/until ≤ 3 mm	45	55
Acero/Steel < 1,5 mm	35	45
Placa moldeada/Casting materials ≥ 6 mm	70	80
Piezas moldeadas/Casting materials < 6 mm	60	70

Equipo de control: Elcometer 456 N° de serie PA00360 (Control equipment) Resultado del control: (Result of control)	Inspección visual 100%: OK (Visual inspection 100%)	
Descripción del material (Description of the material)	Espeor medio de recubrimiento (Mean thick coating) (µm)	Gr/m²
4" STD TUBO AC SIN SOLD. BE A-116 GR.B - COLADA R59064 (114,00) 4" STD TUBO AC SIN SOLD. BE A-116 GR.B - COLADA R59064 (48,00) 4" STD TUBO AC SIN SOLD. BE A-116 GR.B - COLADA 128833 (114,76) 4" STD TUBO AC SIN SOLD. BE A-116 GR.B - COLADA 128833 (114,54) 4" STD TUBO AC SIN SOLD. BE A-106 GR.B - COLADA 128833 (42,28) 1" XS TUBO AC SIN SOLD. PE A-106 GR.B - COLADA R59124 (24,28) 3" STD TUBO AC SIN SOLD. BE A-106 GR.B - COLADA 23995 (16,34) 1" XS TUBO AC SIN SOLD. PE A-106 GR.B - COLADA R59124 (12,14) 3" STD TUBO AC SIN SOLD. BE A-106 GR.B - COLADA 23995 (16,05)	>100	>728
Observaciones: (Remarks)		

24.07.2023

	Cliente: (Client)	REPSOL POLIMEROS UNIPessoal, LDA	Problema: (Problem)	4500054867	Envío: (Shipment)	EXP1299550	
	Descripción: (Description)	4" STD TUBO AC SIN SOLD. ROSC./MAN A-106 GR.B / GALV.	S/Nº: (S/Nº)	250 L-11 MPG010C144			
	Código: (Code)	128833-16/44149	Cantidad: (Quantity)	273,88	Acabado: (Finishing)	1250/250	Factura Nº: (Invoice Nº)

Industrias Mecanicas Sumeca S.L.

ARGANDA DEL REY 4 MAYO 23

CERTIFICADO DE MECANIZACION (MACHINING CERTIFICATE)

Pedido de mecanizado
(Machining Order) 450012925
Cliente
(Customer) CUNADO
Albaran de mecanizado
(Machining Delivery Note) 36574


Certificamos que el material descrito a continuación ha sido mecanizado satisfactoriamente cumpliendo con todos los controles realizados de acuerdo a las normas de fabricación y de dimensión aplicables

We certify that the material described below has been satisfactorily machined, complying with standards
all the controls carried out in accordance with the applicable manufacturing and dimension

UNID (UNITS)	DESCRIPCION MATERIAL (MATERIAL DESCRIPTION)
567,57	2" X8 TUBO AC SIN SOLD. GALV. A-106B C-R09706 / C222480 / 129296 HACER ROSCAR EXTREMOS NPT
36,30	3" STD TUBO AC SIN SOLD. GALV. A-106B C-23965 HACER ROSCAR EXTREMOS NPT
433,88	4" STD TUBO AC SIN SOLD. GALV. A-106B C-R39064 / 129833 HACER ROSCAR EXTREMOS NPT

Control dimensional (ASME B36.10) satisfactorio
Dimensional Control (ASME B36.10) Satisfactory

24.07.2023

	Cliente: (Client)	REPSOL POLIMEROS UNIPessoal, LDA			Pedido: (Delivery)	4500434667	Envío: (Delivery)	EXP1299550
	Descripción: (Description)	4" STD TUBO AC SIN SOLD. ROSC.C/MAN A-106 BR.B / GALV.			Size: (Metric)	250 L-13 HP6010C144		
	Código: (Code)	128833-16/44149	Cantidad: (Quantity)	271,88	Almacen: (Inventory #)	/250/250	Forma MP: (Metric #)	



衡阳华菱钢管有限公司 HENG YANG VALIN STEEL TUBE CO.,LTD

item 550

1102628

产品质量证明书

INSPECTION CERTIFICATE



Address: 湖南省衡阳市大栗新村40号 邮编: 421001
Dalian: Hengyang City, Hunan P.R. China P.C. 421001
E-mail: hval@hysteeltube.com

Original Document



Scanned QR Code Verifiable Inspection Certificate

ACCORDING TO EN10204-2004 3.1

CUSTOMER:		CUMACO, S.A.		TRADE NO.:		CERTIFICATE NO.:		23405296						
CONTRACT/STOCK NO.:		230142010000		P.O. NO.:		DATE:		20180424						
PRODUCT:		Seamless Pipe		PROCESS OF MANUFACTURE:		DEFLECT CONDITION:		Normal						
SPECIFICATION:		ASTM A199M-2019		MATERIALS:		HEAT TREATMENT:								
DIMENSIONS:		273X12.7mm (10.8" x 0.5")		GRADE:		APPROX.		PIPE END DESCRIPTION:						
REMARK:		Part No 35 8870 912007		L/C NO.:		L/C EXPIRATION DATE:		TOTAL WEIGHT:						
TOTAL BUNDLES:		11		TOTAL LENGTH:		118.47		9.658						
TEST LOT No.:		HEAT No.:		BUNDLES:		PIECES:		LENGTH:						
NO.		TEST LOT No.		HEAT No.		BUNDLES		PIECES						
min														
max														
1		523030283		23302307		11		118.47						
2						11		9.658						
3														
4														
5														
NO.		TENSILE TEST (S T=38mm L/50)				HARDNESS TEST (HV10)			NONMETAL INCLUSION (Severity Level No.)					
		SAMPLE TYPE-SIZE(mm) ORIENTATION/GAUGE LENGTH(mm)												
		TS(MPa)		YS(MPa)		EL(%)		RA(%)		VS(%)				
		R0.5		R0.5		R0.5		R0.5		R0.5				
1		455		205		20.6		1.4		0.15				
2		455		205		20.6		1.4		0.15				
3		455		205		20.6		1.4		0.15				
4		455		205		20.6		1.4		0.15				
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		R0.5		R0.5		R0.5		R0.5		R0.5				
1		455		205		20.6		1.4		0.15				
2														



衡阳华菱钢管有限公司 HENG YANG VALIN STEEL TUBE CO.,LTD

item 50

Original
Document

Scanned QR
Code
Verifiable
Inspection
Certificate



产品质量证明书

1102629

INSPECTION CERTIFICATE



湖南省衡阳市大栗新村10号 邮编 421001
Hainan Hengyang City, Hunan P.R. China P.C. 421001
hysteel.com

ACCORDING TO EN10204-2004 3.1

CERTIFICATE NO.: 23406296

ACCORDING TO EN10204-2004 3.1															CHEMICAL COMPOSITION (%)			CERTIFICATE NO. 23406296									
NO.	HEAT No.	TEST LOT No.	TEST LOT No.	Type	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	SUM6	SUM6	SUM6										
Standard range			P	mm	2	2	2	3	4	3	3	3	3	4	3	3	2										
			mm	23			180	35	350	400	40	56	14	40	14	3	2										
1	23101307	H	19	30	42	12	48	43	17	56	14	40	14	40	14	30	41										
	23101308	P	14	29	42	15	31	47	20	52	13	30		136	31												
	23101309	P	14	29	41	15	30	47	20	52	13	30		137	31												
2																											
3																											
4																											
5																											
NOT FURNISHED																		Non-Destructive Test (p.p.t.)									

Particular	NDT Type	ET (Dried hole) Sept	MPI Scruply by Test Panel	Non-Destructive Test (each pipe)								
				Longitudinal (QUAREN type notch)		Transverse (QUAREN type notch)		Leakage		Tensile Testing Coverage %	Burst	
NPE BODY	in			External Surface	Internal Surface	External Surface	Internal Surface	(Flat bottom) hole	Sq			Coverage %
PIPE END	in			11.1mm	11.1mm							
BEVEL				11.1mm	11.1mm							

NOTE: NT=Wall Thickness, LT=ATM P DETAIL-ATM P/SW

NOTE: IT=HEAT ANALYSIS

The field area at the pipe end is 100mm x 100mm

NOTE: IT-HEAT ANALYSIS SUM6: Nb+Ti+V; SUM6: Cu+Ni+Cr+V+Mo; SUM6: CE; P-PRODUCT ANALYSIS CHEMICAL COMPOSITION* 1: 0-1 1-10 2-100 3-1000 4-10000 5-100000

The latest revision of any standard applies to this certificate.

We hereby declare that the product herein described has been manufactured, sampled, tested or inspected, or both, in accordance with the standard and specifications required in your order and has been found to meet the requirements.

This certificate is issued by a computerized system and it is valid with electronic signature. In case the owner of the certificate would release a copy of it, the user must accept its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use.

Any alteration and/or falsification will be subject to the law.

If you need to assure the authenticity of this certificate please do not hesitate to contact Hengyang Valin Steel Tube CO.,LTD, E-mail: hysteel@hysteel.com

Register of Shipping certificate NO.:


Supplier or customer third party:

Certificate-maker: 刘建明

Auditor: 刘建明

Quality Manager: 刘建明

Page: 2/2

Manufacturer: ArcelorMittal Tubular Products Romania S.A. STEFAN CEL MARE STR, DL 15, SC. A, PARTER IL ROMAN, NEAMT ROMANIA		MILL TEST CERTIFICATE according to EN 10204/3.1/2004		Page 9/9 B 16004/1		 ArcelorMittal	
Buyer: CUNADO S.A. CALLE CAMINO DEL OLIVAR 2, MADRID, SPAIN				28.11.2018			
Buyer's reference: PO NO.: PC003419 Contract: 50063828		SEAMLESS STEEL LINE PIPES		Total weight: 74.737 tmm @ 700	Total Length: 2 644.97 meters 8 677.92 feet	Pieces 224	Bundles 36
		Standard: API 5L ed.45-1012/ API 5L ed.46- 2018-PSL2, ASME B76.1 1994-2015; Pipes are with Rapped ends and AMR Technical Office Report 25 09 2018					
		Dimensions: 108.30 x 7.11 mm 4.262 x 0.280 inch		Schedule: 40		Length: 11.50 - 12.00 m 37.73 - 39.37 feet	
		Hydro Test:		Bar 195	PSI 2849	MPa 19.6	Time(sec) 10
				Steel Grade:		B7 - PSL2	

NDT full body:

-100% ultrasonic testing in accordance with ASTM E213 : Le +Li (12.5 % from W.T) – satisfactory.

NDT for the pipe ends:

- ultrasonic testing : Le+Li (12.5 % from W.T.) – satisfactory.

- detection of laminar imperfection on the pipe ends, surface coverage - satisfactory.

- bevel at each pipe end have been inspected for defects by wet magnetical particle, without stratification - satisfactory.

- ultrasonic inspection to verify that the 50 mm wide zone at each pipe end is free of such laminar imperfection.

Magnetism residual check : Four readings were taken approximately 90° apart around the circumference of each end of the pipe. The average of the four readings is ≤ 25 Gs, and no one reading is exceed 30 Gs.

The products was manufactured, sampled, tested, marked and inspected in accordance with the Standards, the supplementary requirements, and any other requirements designated in the purchase order, and has been found to meet such requirements.

C. CANTANUS
 #00. TSK
 29.11.2018

f

Quality Control Representative
 Eng. Diana Clontar

We state on our sole responsibility that the delivered products are in conformity with the order requirements.

DOSSIER DE QUALIDADE		
	Empreitada:	DOCUMENTO Nº:
	4001008 - "Nuevas Plantas de Poliolefinas, Plataformas Logísticas Y Offsites"	DATA:
		<i>31/01/2025</i>
		FOLHA Nº : / DE:
		<i>425 de 2080</i>

ITEM	DESCRIÇÃO DOCUMENTAL	Nº CERTIFICADO	DATA
MICROESTACAS			
1	DECLARAÇÃO DESEMPENHO TUBO PARA MICROESTACAS Nº38217		19/03/2024
2			

20/12/2023			
Data	Qualidade	Director Obra	Repsol
	Verificado	Aprovado	Cliente

DECLARACIÓN DE PRESTACIONES (MÉTODO 3a-EXC2) / DECLARATION OF PERFORMANCE (Method 3a-EXC2)

Número / No. 38217

1. Código de identificación única del producto tipo / *Unique identification code of the product-type:***COMPONENTES DE ACERO ESTRUCTURAL / Steel structural components**2. Tipo, lote o número de serie o cualquier otro elemento que permita la identificación del producto de construcción como se establece en el artículo 11, apartado 4 del Reglamento N° 305/2011: / *Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4) Regulation 305/2011:***ORDEN DE TRABAJO 38217. TUBO PARA MICROPILOTE/ Manufacturing order 38217. Micropile steel pipe**3. Uso o usos previstos del producto de construcción, con arreglo a la especificación técnica armonizada aplicable, tal como lo establece el fabricante: / *Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:***EN 1090-1:2009+A1:2011. PARA USO ESTRUCTURAL EN TODO TIPO DE OBRAS DE CONSTRUCCIÓN / For structural use in all types of construction works**4. Nombre, nombre o marca registrados y dirección de contacto del fabricante según lo dispuesto en el artículo 11, apartado 5 del Reglamento N° 305/2011: / *Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5) Regulation 305/2011:***COMERCIAL DE SONDEOS, S.L. – AVENIDA DEL LOMO, 2, POLÍGONO INDUSTRIAL DE VALDILECHA, 28511, VALDILECHA, MADRID, ESPAÑA**5. En su caso, nombre y dirección de contacto del representante autorizado cuyo mandato abarca las tareas especificadas en el artículo 12, apartado 2 del Reglamento N° 305/2011: / *Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2) Regulation 305/2011:***NO APLICABLE / Not applicable**6. Sistema o sistemas de evaluación y verificación de la constancia de las prestaciones del producto de construcción tal como figura en el anexo V del Reglamento N° 305/2011: / *System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V Regulation 305/2011:***SISTEMA 2+ / System 2+**

7. En caso de declaración de prestaciones relativa a un producto de construcción cubierto por una norma armonizada:

Nombre y número de identificación del organismo notificado: **OCA INSTITUTO DE CERTIFICACIÓN, S.L.U. (2375)**

Tarea realizada:

- i) la inspección inicial de la planta de producción y del control de producción en fábrica;
- ii) la vigilancia, evaluación y supervisión permanentes del control de producción en fábrica, por el **SISTEMA 2+**, emitiendo el certificado de conformidad del control de producción en fábrica **2375/CPR/21/3015**

*In case of the declaration of performance concerning a construction product covered by a harmonised standard:*Name and identification number of the notified body: **OCA INSTITUTO DE CERTIFICACIÓN, S.L.U. (2375)**

Performed:

- (i) initial inspection of the manufacturing plant and of factory production control;
- (ii) continuous surveillance, assessment and evaluation of factory production control, under **System 2+** and issued the certificate of conformity of the factory production control, **No. 2375/CPR/21/3015**

8. En caso de declaración de prestaciones relativa a un producto de construcción para el que se ha emitido una evaluación técnica europea: / *In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:*

NO APLICABLE / Not applicable

9. Prestaciones declaradas / *Declared performance*

Características esenciales / Essential characteristics	Prestaciones / Performance
Tolerancias dimensionales y de forma / <i>Tolerances on dimensions and shape</i>	EN 1090:2; EN 13920 (Clase C); API 5CT
Soldabilidad / <i>Weldability</i>	<i>Ceq tubo</i> ≤ 3%
Tenacidad a la fractura / <i>Fracture toughness</i>	PND
Capacidad portante / <i>Load bearing capacity</i>	PND
Deformación en el estado límite de servicio / <i>Deformation Serviceability Limit State</i>	PND
Resistencia a la fatiga / <i>Fatigue strength</i>	PND
Resistencia al fuego / <i>Resistance to fire</i>	PND
Reacción frente al fuego / <i>Reaction to fire</i>	A1
Emisión de cadmio / <i>Release of cadmium and its compounds</i>	PND
Emisión de radioactividad / <i>Emission of radioactivity</i>	Cumple
Durabilidad / <i>Durability</i>	PND

10. Las prestaciones del producto identificado en los puntos 1 y 2 son conformes con las prestaciones declaradas en el punto 9. *The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.*

La presente declaración de prestaciones se emite bajo la sola responsabilidad del fabricante identificado en el punto 4. / *This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.*

Firmado por y en nombre del fabricante por:

Signed for and on behalf of the manufacturer by:

Álvaro Torres Vallejo
Gerente (Manager)



Valdilecha, a 19 de marzo de 2024

DOSSIER DE QUALIDADE

Empreitada:

**4001008 - "Nuevas Plantas de Poliolefinas,
Plataformas Logísticas Y Offsites"**

DOCUMENTO Nº:

DATA:

31/01/2025

FOLHA Nº : / DE:

428 de 2080

1.4.4 MATERIAIS ARMAZÉM REPSOL

ITEM	DESCRIÇÃO DOCUMENTAL	CÓDIGO	DATA
ARMAZÉM REPSOL			
1	LISTA DE MATERIAIS ENTREGUES		

20/12/2023			
Data	Qualidade	Director Obra	Repsol
	Verificado	Aprovado	Cliente

LISTA DE MATERIAIS DO ARMAZÉM

PROJECTO:

4008 - PROJETO ALBA

EMPRESA SOLICITANTE:

01- ASCH INFRAESTRUTURAS Y SERVICIOS SA

Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
0001	24/08/2023	TUBO DN90-HDPE	DN90 - 4"				ROLO	264 ml	264 ml	0 ml	SEGMENTO Ad, Ae - TUBOS COMPRADOS PINTO&CRUZ
0001	24/08/2023	TUBO DN90-HDPE-P	DN90 - 4"				ROLO	264 ml	264 ml	0 ml	SEGMENTO Ad, Ae - TUBOS COMPRADOS PINTO&CRUZ
0002	06/09/2023	TUBOS DN1000-HDPE	DN1000	DN1000-HDPE			7	42 ml	36 ml	6ml	ZONA NORTE - NOVAS UNIDADES - existente a 45º 01SW/ 45º 01SW a SW1
0002	06/09/2023	CODO 45º	DN1000				1	1 ud	1 ud	0 ud	ZONA NORTE - NOVAS UNIDADES
0003	06/09/2023	TUBOS HDPE -315	DN315	DN315-HDPE			5	30 ml	30 ml	0 ml	ZONA ESTE - NOVAS UNIDADES - SWn3-Swn4
0003	06/09/2023	TUBOS HDPE -350	DN350	DN350-HDPE			31	186 ml	186 ml	0 ml	ZONA ESTE - NOVAS UNIDADES -SWe1 - SWe8
0004	27/09/2023	TUBOS CORRUGADOS (SN8) DN200	DN200	GEN/TUB-ACC	4500034776	10	8	48 ml	48 ml	42 ml	ZONA SUL - SSs1/20 to SWs1/9 - NOVAS UNIDADES
0004	27/09/2023	TUBOS ASTM A-53 B TP SMLS - ASME B36,10 Ø SCH 20, L4	DN250	PIPA020B11020			15	90 ml	0 ml	90 ml	AVENIDA 27 - JÁ DEVOLVIDO - VALE 4008-01-0001
0004	27/09/2023	TUBOS ASTM A-53 B TP SMLS - ASME B36,12 Ø SCH 20, L4	DN300	PIPA020B11020			1	6 ml	6 ml	0 ml	AVENIDA 27 - OCW26 - EXISTING MANHOLE
0004	27/09/2023	TUBOS CORRUGADOS (SN8) DN500	DN500	GEN/TUB-ACC	4500034776	70	45	270 ml	270 ml	0 ml	AVENIDA 27 - LINHA SWw1 a SWw6
0005	29/09/2023	TUBOS CORRUGADOS (SN8) DN200	DN200	GEN/TUB-ACC	4500034776	10	6	36 ml	36 ml	0 ml	ZONA NORTE - NOVAS UNIDADES - SSn1-14 /SWn1-7
0005	29/09/2023	TUBOS CORRUGADOS (SN8) DN225	DN250	GEN/TUB-ACC	4500034776	20	13	78 ml	78 ml	0 ml	ZONA NORTE - NOVAS UNIDADES - SWn1/SWn3
0005	29/09/2023	TUBOS CORRUGADOS (SN8) DN280	DN315	GEN/TUB-ACC	4500034776	30	5	96 ml	96 ml	0 ml	ZONA NORTE - NOVAS UNIDADES - SWn3-SWn5
0005	29/09/2023	TUBOS CORRUGADOS (SN8) DN355	DN350	GEN/TUB-ACC	4500034776	40	18	108 ml	108 ml	0 ml	ZONA NORTE - NOVAS UNIDADES - SWn5-SW1

01- ASCH INFRAESTRUCTURAS Y SERVICIOS SA

[illegible]

LISTA DE MATERIAIS DO ARMAZÉM

REFERÊNCIA: LMA-08/23

Revisão: 0 Obra: R007

PROJECTO:				EMPRESA SOLICITANTE:							
4008 - PROJETO ALBA				01- ASCH INFRAESTRUTURAS Y SERVICIOS SA							
Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
0012	02/04/2024	FLANGES LOUCAS 20" 150 lb (LOOSE BACKING FLANGE)					2 ud	2 ud	2 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0012	02/04/2024	T LADOS IGUAIS DN 500 SDR11/PN16 HDPE100 (EQUAL TEE)					1 ud	1 ud	1 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0012	02/04/2024	VARAS DE TUBO - DN 500 SDR11/PN16 HDPE 100	DN500				6 ud	6 ud	72 ml	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0013	15/04/2024	Cable puesta a tierra, Conductor desnudo,, Cobre, 1 Cond. Tierra (A/V), 70 mm2 Cable de		450003874		10	510 ml	510 ml	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Cable puesta a tierra, Conductor aislado, 35 mm2 (DERIVED EARTHING GRID SECTION 35 mm2)		450003874		20	189 ml	189 ml	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Embarado de conexion de 60X6X475 mm,incluyendo 6 grapas para cable de 35 -95		450003874		100	2 ud	2 ud	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Registro para inspección de picas en puesta a tierra sin fondo. Fabricada en poliéster, com tapa		450003874		80	2 ud	2 ud	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Grapa para fijación de cable 35 mm2 a estructura o equipo		450003874		30	32 ud	32 ud	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Grapa para fijación de cable 35 mm2 a estructura o equipo		450003874		40	32 ud	32 ud	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0013	15/04/2024	Puente de prueba de pletina de cobre, fijación de conductores de tierra mediante soldadura		450003874		50	3 ud	3 ud	0 ml	0 ml	REDE DE TERRAS - AVENIDA 27
0014	14/03/2024	Juntas de 150 libras					12 ud	12 ud	12 ud	0 ml	ZONA SUL - NOVAS UNIDADES - SEGMENTOS Ai, Aj, Ah
0014	14/03/2024	Esparragos para Bridas de 3/4					96 ud	96 ud	96 ud	0 ml	ZONA SUL - NOVAS UNIDADES - SEGMENTOS Ai, Aj, Ah
0015	22/04/2024	TUBOS POLIETILENO - HDPE - DN350	DN350				3 ud	18 ml	18 ml	0 ml	ZONA ESTE - SWe7 + SWe8
0015	22/04/2024	TUBOS POLIETILENO - DN500 SDR11/PN16 HDPE	DN500				2 ud	12 ml	12 ml	0 ml	- ZONA SUL - NOVAS UNIDADES - SEGMENTOS, Ah - SWw6-SW5

LISTA DE MATERIAIS DO ARMAZÉM

PROJECTO:

EMPRESA SOLICITANTE:

4008 - PROJETO ALBA

01- ASCH INFRAESTRUCTURAS Y SERVICIOS SA

[illegible]

LISTA DE MATERIAIS DO ARMAZÉM

REFERÊNCIA: LMA-08/23
Revisão: 0 Obra: R007

PROJECTO:
4008 - PROJETO ALBA

EMPRESA SOLICITANTE:
01- ASCH INFRAESTRUCTURAS Y SERVICIOS SA

Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
0017	13/05/2024	curvas 90° - DN250 mm SDR11 PN16		MF2P0G1226FI224			2	2	2	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0017	13/05/2024	VARAS TUBO PEAD DN250 SDR11 PN16	DN250	PPBP0R126FD24	4500035594	40	4	24 ml	24 ml	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0017	13/05/2024	PERNOS 1"1/8 com 250 mm de comprimento					80	80	80	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0017	13/05/2024	PERNOS 7/8 com 180 mm de comprimento					24	24	24	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0018	15/05/2024	TUBOS CORRUGADOS SW - DN500	DN500				6	36 ml	36 ml	0 ml	AVENIDA 26 - SWw6 - SW5
0019	15/05/2024	ANILHAS DE CHAPA PARA PERNOS 1"1/8					160 ud	160 ud	160 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0019	15/05/2024	ANILHAS DE CHAPA PARA PERNOS 7/8					160 ud	160ud	160 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0020	21/05/2024	TUBOS ASTM A53 B TP S SMLS - ASME B36.10 Ø10", SCH20, L4 - REVESTIDOS	DN250				8 ud	90 ml	90 ml	0 ml	AVENIDA 26/27 - LINHA DE PERÓXIDOS - OTHERS to OCW25
0020	21/05/2024	TUBOS ASTM A53 B TP S SMLS - ASME B36.10 Ø14", SCH20, L4 - REVESTIDOS	DN350				3 ud	35 ml	35 ml	0 ml	AVENIDA 26/27 - LINHA DE PERÓXIDOS - OCW25 to OCW26
0021	12/06/2024	Junta no metálica, C.S.F (Fibra sintética comprimida resistente al petróleo), Entre bridas		NMGQ001R1FB6			7 ud	7 ud	7 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0021	12/06/2024	Junta no metálica, C.S.F (Fibra sintética comprimida resistente al petróleo), Entre bridas de		NMGQ001R1FB10			1 ud	1 ud	1 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0021	12/06/2024	Anilhas de chapa de furo 1" 1/8 - (ou 35 mm)					80 ud	80 ud	80 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0021	12/06/2024	Anilhas de chapa de furo 7/8" - (ou 25 mm)					48 ud	48 ud	48 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
0021	12/06/2024	Espárrago y dos tuercas hexagonales pesadas, ASTM A-193 Gr B7 / ASTM A 194 Gr 2H, ASME		SB2R051G3/45			56 ud	56 ud	56 ud	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27

LISTA DE MATERIAIS DO ARMAZÉM

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01- ASCH INFRAESTRUCTURAS Y SERVICIOS SA

Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
0022	03/09/2024	Vent Type 2- oil drainage Sytem with Hydraulic Seal- as per detail drawing 00-000-8-05-01504		Incluido no conjunto do Vent Type 2		10	7 ud	7 ud	7 ud	0 ml	VENTS TYPE 2
0022	03/09/2024	M16 x54mm Hexagonal Head Bolts- for type 2 vents		Incluido no conjunto do Vent Type 2			56 ud	56 ud	56 ud	0 ml	VENTS TYPE 2
0022	03/09/2024	Spirometal Gasket 174-114 (3mm)- For Type 2 vents		Incluido no conjunto do Vent Type 2			14 ud	14 ud	14 ud	0 ml	VENTS TYPE 2
0022	03/09/2024	TUBOS ASTM A-106 B SMLS - ASME B36,10 Ø4" SCH40, L7805	DN100 - 4"	PIPA010B1440	4500034667	90	3 ud	34 ml	34 ml	0 ml	VENTS TYPE 1 (PARA FABRICO)
0022	03/09/2024	TUBOS ASTM A-106 B SMLS - ASME B36,10 Ø4" SCH40, L7805 - GR.B (POLIKEN) DN4 L-	DN100 - 4"	PIPA010B1440	4500034667	530	2 ud	20 ml	20 ml	0 ml	VENTS TYPE 1 (PARA FABRICO)
0022	03/09/2024	CODO DE 90° Y RADIO LARGO ASTM-A-234-WPB, ASME B16.9 4", SCH40, L-7961		90LA200F3440	4500034667	240	18 ud	18 ud	18 ud	0 ml	VENTS TYPE 1 (PARA FABRICO)
0023	19/08/2024	TUBOS AST A-53 B TP S SMLS - ASME B36,10 Ø14", SCH-20, L4	DN350	TUBERIA DE CORUÑA			2	24 ml	24 ml	0 ml	LIGAÇÃO CAIXAS OCW27 A OCW8
0024	16/09/2024	M16 x54mm Hexagonal Head Bolts- for type 2 vents		Incluido no conjunto do Vent Type 2			112 ud	112 ud	112 ud	0 ml	VENTS TYPE 2
0025	25/09/2024	TUBO DE POLIETILENO - DRENAJE - HDPE - DN400 (SW2/SW4 para OTHERS)	DN400				8 ud	48 ml	?	0 ml	LINHA SW - SEGMENTO Ad/AE - (OTHERS para SW2 + OTHERS para SW4)

RESUMO	COMPRAS EXTERIOR						
	<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>99,2 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div> <tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>174 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div><tr><td></td><td><div><div>TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM</div><div>DN100</div><div></div><div></div><div></div><div></div><div>550 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml</div></div><tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div></td></tr></td></tr></td></tr>		<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>174 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div> <tr><td></td><td><div><div>TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM</div><div>DN100</div><div></div><div></div><div></div><div></div><div>550 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml</div></div><tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div></td></tr></td></tr>		<div><div>TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM</div><div>DN100</div><div></div><div></div><div></div><div></div><div>550 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml</div></div> <tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div></td></tr>		<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div>
	<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>174 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div> <tr><td></td><td><div><div>TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM</div><div>DN100</div><div></div><div></div><div></div><div></div><div>550 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml</div></div><tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div></td></tr></td></tr>		<div><div>TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM</div><div>DN100</div><div></div><div></div><div></div><div></div><div>550 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml</div></div> <tr><td></td><td><div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div></td></tr>		<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div>		
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	<div><div>Tubo Cambidur PP SN8 (vara c/6,2) 250 mm</div><div>DN250</div><div></div><div></div><div></div><div></div><div>24,8 ml</div><div></div><div></div><div>COMPRADO A PINTO&CRUZ</div></div>						

LISTA DE MATERIAIS DO ARMAZÉM

PROJECTO:

4008 - PROJETO ALBA

EMPRESA SOLICITANTE:

01- ASCH INFRAESTRUTURAS Y SERVICIOS SA

Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
		TubFM PE 100 SDR 11d 90	DN100					48 ml			COMPRADO A PINTO&CRUZ

RESUMO	TUBOS AÇO CARBONO										
	TUBOS ASTM A-106 B SMLS - ASME B36,10 Ø4" SCH40, L7805	DN100 - 4"	PIPA010B1440	4500034667	0090	3 ud	34 ml	34 ml	0 ml		VENTS TYPE 1 (PARA FABRICO)
	TUBOS ASTM A-106 B SMLS - ASME B36,10 Ø4" SCH40, L7805 - GR.B (POLIKEN) DN4 L-	DN100 - 4"	PIPA010B1440	4500034667	0530	2 ud	20 ml	20 ml	0 ml		VENTS TYPE 1 (PARA FABRICO)
	TUBOS, ASTM A-106 B SMLS, ASME B36,10 Ø6", SCH 40, L-7805	DN150 - 6"	TUBERIA DE CORUÑA	—		7 ud	40 ml	40 ml	0 ml		MODIFICAÇÃO LINHA CONTRA INCÊNDIOS
	TUBOS ASTM A53 B TP S SMLS - ASME B36.10 Ø10", SCH20, L4 - REVESTIDOS	DN250 10"	TUBERIA DE CORUÑA	—		8 ud	90 ml	90 ml	0 ml		AVENIDA 27 - LIGAÇÃO HIDRANTES
	TUBOS ASTM A-53 B TP SMLS - ASME B36,12 Ø SCH 20, L4	DN300 12"	PIPA020B11020			1 ud	6 ml	6 ml	0 ml		AVENIDA 26/27 - LINHA DE PERÓXIDOS - OTHERS to OCW25
	TUBOS ASTM A53 B TP S SMLS - ASME B36.10 Ø14", SCH20, L4 - REVESTIDOS +	DN350 14"	TUBERIA DE CORUÑA	—		5 ud	60 ml	39 ml	21 ml		AVENIDA 27 - OCW26 - EXISTING MANHOLE
							TOTAL:	250 ml			AVENIDA 26/27 - LINHA DE PERÓXIDOS - OCW25 to OCW26 + LIGAÇÃO CAIXAS OCW27 A OCW8
RESUMO	TUBOS CORRUGADOS										
	TUBOS CORRUGADOS (SN8) DN200	DN200	GEN/TUB-ACC	4500034776	10	8+6	84 ml	42 ml	42 ml		ZONA NORTE - NOVAS UNIDADES - SSn1-14 /SWn1-7
	TUBOS CORRUGADOS (SN8) DN225	DN250	GEN/TUB-ACC	4500034776	20	13 ud	78 ml	78 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn1/SWn3
	TUBO CAMBIDUR PP SN8 (VARA c/6,2) 250 mm	DN250				50 ud	298 ml	270 ml	30 ml		AVENIDA 26 - LINHA SANITÁRIOS - OTHERS-SD6
	TUBOS CORRUGADOS (SN8) DN280	DN315	GEN/TUB-ACC	4500034776	30	16 ud	96 ml	96 ml	0 ml		COMPRADO A PINTO&CRUZ
	TUBOS CORRUGADOS HDPE -315	DN315	DN315-HDPE			5 ud	30 ml	30 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn5
	TUBOS CORRUGADOS HDPE -350	DN350	DN350-HDPE			31 ud	186 ml	186 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS POLIETILENO - HDPE - DN350	DN350				3 ud	18 ml	18 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS (SN8) DN355	DN350	GEN/TUB-ACC	4500034776	40	18 ud	108 ml	108 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBO POLIETILENO - DN400 HDPE	DN400				2+8 ud	60 ml	60 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS PEAD (SN8) DN450	DN450				23 ud	136 ml	136 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS (SN8) DN500	DN500	GEN/TUB-ACC	4500034776	70	45 ud	270 ml	270 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS SW - DN500	DN500				6 ud	36 ml	36 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS - DN500 SDR11/PN16 HDPE	DN500				2 ud	12 ml	12 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS CORRUGADOS SW - DN500	DN500				6 ud	36 ml	36 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4
	TUBOS PEAD (SN8) DN560	DN560				17 ud	100 ml	100 ml	0 ml		ZONA NORTE - NOVAS UNIDADES - SWn3-SWn4

LISTA DE MATERIAIS DO ARMAZÉM

PROJETO:				EMPRESA SOLICITANTE:							
4008 - PROJETO ALBA				01- ASCH INFRAESTRUTURAS Y SERVICIOS SA							
Nº VALE	DATA ENTREGA	MATERIAL	DIÂMETRO	UNICODE	PEDIDO	ITEM	UNIDADES	QUANTIDADE DESPACHADA	QUANTIDADE UTILIZADA	TOTAL DEVOLVIDA	OBSERVAÇÕES
	06/09/2023	TUBOS CORRUGADOS DN560	DN560	GEN/TUB-ACC	4500034776	80	7 ud	42 ml	42 ml	0 ml	NOVAS UNIDADES - SWs10-SW6 ZONA NORTE - NOVAS UNIDADES - existente a 45º 01SW/ 45º 01SW a SW1
		TUBOS DN1000-HDPE	DN1000	DN1000-HDPE			7ud	42 ml	36 ml	6ml	
								TOTAL:	1286 ml + 298 ml comprados		
RESUMO		TUBOS REDE DE INCÊNDIOS									
	02/04/2024	VARAS DE TUBO - DN 500 SDR11/PN16 HDPE 100	DN500				6 ud	6 ud	72 ml	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
	45425	VARAS DE TUBO - DN500 SDR11/PN16 HDPE	DN500	PPBP0R126FD30			2 ud	24 ml	24 ml	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
	13/05/2024	VARAS TUBO PEAD DN250 SDR11 PN16	DN250	PPBP0R126FD24	4500035594	40	4 ud	24 ml	24 ml	0 ml	REDE DE CONTRA - INCÊNDIOS AVENIDA 27
								TOTAL:	120 ml		
RESUMO		TUBOS REDE - RAW WATER									
	24/08/2023	TUBO DN100-HDPE - ÁGUA NORMAL	DN100		ANULADO		ROLO	264 ml	264 ml	0 ml	SEGMENTO Ad, Ae - TUBOS COMPRADOS PINTO&CRUZ
	24/08/2023	TUBO DN100-HDPE-P - ÁGUA POTÁVEL	DN100		ANULADO		ROLO	264 ml	264 ml	0 ml	SEGMENTO Ad, Ae - TUBOS COMPRADOS PINTO&CRUZ
	23/08/2023	TUBO PEAD MRS 100 PN16 ROLO 50MT 110 MM	DN100		COMPRADO		ROLO	550 ml	517 ml	33 ml	LINHA 4RW 220016 - AGUA NORMAL/POTÁVEL COMPRADO A PINTO&CRUZ - 11 ROLOS 50 ml