



Vallourec Tubos do Brasil S.A.
BARREIRO PLANT - Belo Horizonte - MG - Brazil
CEP: 30161-970 - PO BOX: 1453



Inspection Certificate

(According to DIN EN 10204.3.1)

Nº.: 0030032064

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Customer: SUMITOMO CORPORATION OF AMERICA

Country: CAMEROON

Material Number: 314353
Work Order: 365839 / 10
Customer Order: 4500301107

Inspection: Vallourec Tubos do Brasil S.A.

PRODUCT: SEAMLESS STEEL PIPE, HOT FINISHED , BUTTRESS THREAD AND COUPL , NORMALIZED
DIMENSIONS: 13.3/8" X 0.380" GRADE: GR K-55
STANDARD: API SPEC 5CT, 07.2011, 9TH EDITION - PSL 1
CUSTOMER SPECIFICATION: CHAD - ATTACHMENT 5-D , 16.11.2000
SURFACE PROTECTION: EXTERNAL: LACQUER PIPE ENDS PROTECTOR: COMPOSITE CLOSED LIFTABLE
TOLERANCES: OUTSIDE DIAMETER (PIPE BODY): -0.067 " / + 0.134 " WALL THICKNESS: -0.047 "
LENGTH: RANDOM 38.00 FT - 42.0 FT
STANDARD MARKING: Paint stenciled in the pipe body: 365839/10 MANUFACTURER 5CT-0186.4 API MONOGRAM YEAR/QUARTER 13.3/8 54.50 K Z S S1 P 2500 BC D LENGTH HEAT NUMBER
SHIPPING MARKING: MADE IN BRAZIL * SCOA * ESSO PO #4501036784,SCOA PO #4500301107 ESSO EXPLORATION AND PRODUCTION CHAD INC.

Heat	Pieces
130482	3
131253	24
131254	5
Total	32

PIPES

THE PRODUCT IS SATISFACTORY IN THE FOLLOWING TESTS / INSPECTIONS: DIMENSIONAL # VISUAL # HYDROSTATIC TEST: 2500.0 PSI 5 S # ELECTROMAGNETIC TEST : SR1-L4(N12.5), LONG, OUT/INS # ULTRASONIC TEST FOR WALL THICKNESS MEASUREMENT: VERIFIED HELICAL OR LONG. PATH # DRIFT TEST: DIAMETER 12.459 IN LENGTH 12 " #

Chemical Composition (%)		Process: Basic Oxygen Furnace, heats fully killed													
		C	Mn	P	S	Si	Ni	Cr	Mo	Al	Cu	V	Nb	B	Ti
Heat Analysys	Min														
	Max			0.025	0.015										
Product Analysys	Min														
	Max			0.025	0.015										
Heat	Control Lot														
130482	030002436257	0.37	1.38	0.009	0.005	0.21	0.01	0.08	0.02	0.024	0.010	0.008	0.020	0.0004	0.001
	Check 1	0.37	1.36	0.008	0.004	0.22	0.01	0.08	0.02	0.023	0.009	0.007	0.020	0.0004	0.001
	Check 2	0.38	1.36	0.008	0.005	0.23	0.01	0.08	0.02	0.023	0.010	0.007	0.018	0.0004	0.001
131253	030002436242	0.36	1.39	0.010	0.001	0.22	0.01	0.07	0.01	0.025	0.010	0.005	0.020	0.0003	0.002
	Check 1	0.35	1.37	0.010	0.001	0.20	0.01	0.07	0.01	0.022	0.006	0.005	0.019	0.0003	0.002
	Check 2	0.35	1.37	0.010	0.001	0.20	0.01	0.07	0.01	0.022	0.006	0.005	0.019	0.0003	0.002



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Process: Basic Oxygen Furnace, heats fully killed

		C	Mn	P	S	Si	Ni	Cr	Mo	Al	Cu	V	Nb	B	Ti
Heat	Analysys	Min													
		Max		0.025	0.015										
Product	Analysys	Min													
		Max		0.025	0.015										
Heat	Control Lot														
131254	030002436256	0.36	1.37	0.011	0.002	0.20	0.01	0.07	0.01	0.025	0.010	0.004	0.020	0.0003	0.001
	Check 1	0.36	1.37	0.011	0.003	0.21	0.01	0.07	0.01	0.023	0.008	0.004	0.021	0.0003	0.002
	Check 2	0.37	1.36	0.011	0.003	0.21	0.01	0.07	0.01	0.024	0.008	0.004	0.020	0.0003	0.001

Specimen Direction: Longitudinal

Temperature: Room Temperature

Gage Length: L0= 2"

YS Method: 0,50 %

		Type of Specimen	Area (S _{qin})	YS (PSI)	TS (PSI)	E (%)
		Required: Min		55000	95000	18
		Max		80000		
Heat	Control Lot					
130482	030002436257	STRIP WIDTH 38,1 MM	0.6	69473	103701	30
131253	030002436242	STRIP WIDTH 38,1 MM	0.6	66717	99930	33
131254	030002436256	STRIP WIDTH 38,1 MM	0.6	69183	102976	33

YS-Yield Strength; TS-Tensile Strength; E-Elongation;

Test Specimen: CHARPY 10X55X7.5 V NOTCH

Direction: Transverse

Temperature: 32°F

Striking tup: 0.315"

		AE1	AE2	AE3	AE4	AE5	AE Avg
		(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)
Required: Min		8	8	8			12
Max							
Heat	Control Lot						
130482	030002436257	40	46	41			42
131253	030002436242	56	47	50			51
131254	030002436256	47	49	43			46

AE - Absorbed Energy;



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COUPLINGS

THE PRODUCT IS SATISFACTORY IN THE FOLLOWING TESTS / INSPECTIONS: DIMENSIONAL # VISUAL # MAGNETIC PARTICLE TEST #

Chemical Composition (%)		Process: Basic Oxygen Furnace, heats fully killed													
		C	Mn	P	S	Si	Ni	Cr	Mo	Al	Cu	V	Nb	B	Ti
Heat	Control Lot														
129764	030002405071	0.33	1.36	0.013	0.002	0.26	0.02	0.10	0.01	0.025	0.010	0.006	0.025	0.0002	0.002
	Check 1	0.34	1.34	0.013	0.004	0.26	0.02	0.10	0.01	0.028	0.008	0.006	0.026	0.0002	0.002
	Check 2	0.34	1.34	0.013	0.003	0.26	0.02	0.10	0.01	0.027	0.009	0.006	0.027	0.0002	0.002
130492	030002420596	0.39	1.39	0.017	0.003	0.20	0.01	0.08	0.02	0.017	0.010	0.005	0.000	0.0004	0.001
	Check 1	0.38	1.37	0.016	0.002	0.20	0.01	0.08	0.02	0.017	0.006	0.004	0.000	0.0003	0.001
	Check 2	0.38	1.38	0.016	0.002	0.20	0.01	0.08	0.02	0.017	0.006	0.005	0.000	0.0003	0.001

Tensile Test

Specimen Direction: Longitudinal

Temperature: Room Temperature

		Type of Specimen		Area	YS	TS	E
				(Sqin)	(PSI)	(PSI)	(%)
		Required: Min			55000	95000	19
		Max			80000		
Heat	Control Lot						
129764	030002405071	ROUND BAR	DIAMETER 12,7 MM	0.2	65702	101671	24
130492	030002420596	ROUND BAR	DIAMETER 12,7 MM	0.2	60625	102976	25

YS-Yield Strength; TS-Tensile Strength; E-Elongation;

Impact Test

Test Specimen: CHARPY 10X55X10 V NOTCH

Direction: Transverse

Temperature: 70°F

Striking tup: 0.315"

		AE1	AE2	AE3	AE4	AE5	AE Avg
		(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)
		Required: Min	10	10	10		15
		Max					
Heat	Control Lot						
129764	030002405071		63	66	62		64
130492	030002420596		40	34	41		38

AE - Absorbed Energy;

Remarks:

We hereby certify that this product has been manufactured and examined in accordance with all requirements of the standards and specifications and all the results are found to be satisfactory. This testimonial and certificate respectively is recorded by a computer system and is valid without signature. Alteration or use for others products are regarded as falsification of documents and will be subject to criminal jurisdiction.

QUALITY CONTROL DEPARTMENT

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SÉRGIO RICARDO SILVA LOPES - CREA/MG 60498
TECHNICAL RESPONSIBLE

DATE
11.17.2014

ECO TUBES: The tubes from Vallourec do Brasil S.A. are manufactured with steel which uses charcoal as a source of energy in its production. This coal comes from more than 100,000 ha of forest planted by Vallourec Florestal Ltda.. With the acquisition of 33.3 ton(s) of steel tubes from Vallourec do Brasil S.A., your company contributed to the reduction of the greenhouse effect, avoiding the accumulation of 59.9 ton(s) of Carbon Dioxide CO₂ in the atmosphere.