



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



ISO 9001  
 ISO 14001  
 ISO/TS 16949  
 OHSAS 18001  
 ISO 50001  
 BUREAU VERITAS  
 Certification



## Inspection Certificate

(According to DIN EN 10204.3.1)

N°: 0030031939

Sheet: 1 / 4

**Customer:** SUMITOMO CORPORATION OF AMERICA

**Country:** CAMARÕES

**Material Number:** 314565

**Work Order:** 365839 / 30

**Customer Order:** 4500301107

**Inspection:** Vallourec Tubos do Brasil S.A.

**PRODUCT:** SEAMLESS STEEL PIPE, HOT FINISHED , BUTTRESS THREAD AND COUPL , QUEN+ TEMPER

**DIMENSIONS:** 9.5/8" X 0.545" **GRADE:** GR P-110

**STANDARD:** API SPEC 5CT, 07.2011, 9TH EDITION - PSL 2

**SURFACE PROTECTION:** EXTERNAL: LACQUER **PIPE ENDS PROTECTOR:** COMPOSITE CLOSED LIFTABLE

**TOLERANCES: OUTSIDE DIAMETER (PIPE BODY):** -0.048 " / + 0.096 " **WALL THICKNESS:** -0.068 "

**LENGTH:** RANDOM 38.00 FT - 42.0 FT

**STANDARD MARKING:** Paint stenciled in the pipe body: 365839/30 MANUFACTURER 5CT-0186.4 API MONOGRAM YEAR/QUARTER 9.5/8 53.50 P S S2 L2 P 10000 BC DA8.500 LENGTH HEAT NUMBER

**SHIPPING MARKING:** MADE IN BRAZIL \* SCOA \* ESSO PO #4501036784,SCOA PO #4500301107 \* ESSO EXPLORATION AND PRODUCTION CHAD INC.

Heat	Pieces
127876	40
130730	3
130961	5
<b>Total</b>	<b>48</b>

## PIPES

**THE PRODUCT IS SATISFACTORY IN THE FOLLOWING TESTS / INSPECTIONS:** DIMENSIONAL # VISUAL # HYDROSTATIC TEST: 703.0 KGF/CM2 5 S # ULTRASONIC TEST : SR2-L2(N5),LONG/TRANS,OUT/INS # ULTRASONIC TEST FOR WALL THICKNESS MEASUREMENT: COVER RATIO 25% # DRIFT TEST: DIAMETER 8.500 IN LENGTH 12 " #

### Chemical Composition (%)

Process: Basic Oxygen Furnace, heats fully killed

		C	Mn	P	S	Si	Ni	Cr	Mo	Al	V	Nb	B	Ti
<b>Heat Analysys</b>	<b>Min</b>													
	<b>Max</b>			0.030	0.030									
<b>Product Analysys</b>	<b>Min</b>													
	<b>Max</b>			0.030	0.030									
<b>Heat</b>	<b>Control Lot</b>													
127876	030002428101	0.30	0.46	0.010	0.002	0.27	0.03	0.97	0.78	0.035	0.044	0.028	0.0004	0.013
	Check 1	0.29	0.45	0.011	0.001	0.28	0.03	0.96	0.80	0.033	0.042	0.030	0.0003	0.013
	Check 2	0.29	0.45	0.010	0.001	0.27	0.03	0.98	0.78	0.035	0.040	0.025	0.0003	0.012
130730	030002430690	0.24	1.00	0.010	0.003	0.22	0.01	0.31	0.06	0.033	0.006	0.002	0.0016	0.028
	Check 1	0.23	1.00	0.009	0.001	0.22	0.01	0.32	0.05	0.030	0.004	0.001	0.0015	0.027
	Check 2	0.24	1.01	0.011	0.002	0.22	0.01	0.31	0.05	0.031	0.008	0.000	0.0015	0.028
130961	030002430679	0.23	1.00	0.009	0.001	0.22	0.02	0.32	0.06	0.029	0.005	0.000	0.0017	0.024

#### Chemical Composition (%)

Process: Basic Oxygen Furnace, heats fully killed

	C	Mn	P	S	Si	Ni	Cr	Mo	Al	V	Nb	B	Ti	
Heat Analysys	Min													
	Max		0.030	0.030										
Product Analysys	Min													
	Max		0.030	0.030										
Heat	Control Lot													
	Check 1	0.22	1.01	0.008	0.001	0.22	0.02	0.31	0.05	0.032	0.004	0.000	0.0016	0.025
	Check 2	0.23	0.98	0.008	0.001	0.22	0.02	0.32	0.05	0.031	0.004	0.000	0.0015	0.024

#### Tensile Test

Specimen Direction: Longitudinal

Temperature: Room Temperature

Gage Length: L0= 2"

YS Method: 0,60 %

					Type of Specimen	Area (S <sub>qin</sub> )	YS (PSI)	TS (PSI)	E (%)
					Required: Min		110000	125000	16
					Max		140000		
Heat	Control Lot	Heat Pipe N°	Position	Tr.Lot					
127876	030002428101	D 01	Bottom		STRIP WIDTH 38,1 MM	0.8	122266	132129	27
130730	030002430690	A 817	Bottom		STRIP WIDTH 38,1 MM	0.8	118930	131984	26
130961	030002430679	B 43	Bottom		STRIP WIDTH 38,1 MM	0.8	117770	129083	24

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

#### Impact Test

Test Specimen: CHARPY 10X55X7.5 V NOTCH

Direction: Transverse

Temperature: 32F

Striking tup: 0.315"

					AE1	AE2	AE3	AE4	AE5	AE Avg	SA1	SA2	SA3	SA4	SA5	SA Avg
					(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(%)	(%)	(%)	(%)	(%)	(%)
					Required: Min	9	9	9		13	75	75	75			
					Max											
Heat	Control Lot	Heat Pipe N°	Position	Tr.Lot												
127876	030002428101	D 01	Bottom		41	44	43			43	100	100	100			
130730	030002430690	A 817	Bottom		40	38	38			39	100	100	100			
130961	030002430679	B 43	Bottom		81	81	75			79	100	100	100			

AE - Absorbed Energy; SA - Shear Area;

## COUPLINGS

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

Chemical Composition (%)		Process: Basic Oxygen Furnace, heats fully killed												
		C	Mn	P	S	Si	Ni	Cr	Mo	Al	V	Nb	B	Ti
Heat	Min													
	Max			0.030	0.030									
Heat	Control Lot													
128230	030002380109	0.21	0.89	0.015	0.003	0.23	0.02	0.91	0.24	0.032	0.004	0.001	0.0014	0.022
	Check 1	0.21	0.89	0.015	0.002	0.23	0.02	0.90	0.24	0.030	0.005	0.001	0.0014	0.022
	Check 2	0.21	0.89	0.014	0.002	0.23	0.02	0.90	0.24	0.030	0.008	0.000	0.0014	0.023

### Tensile Test

Specimen Direction: Longitudinal

Temperature: Room Temperature

Type of Specimen

Area	YS	TS	E
(Sqin)	(PSI)	(PSI)	(%)
	110000	125000	12
	140000		

Required: Min

Max

Heat	Control Lot	Heat Pipe N°	Position	Type of Specimen			Area	YS	TS	E
		Tr.Lot					(Sqin)	(PSI)	(PSI)	(%)
128230	030002380109	E 01	Bottom	ROUND BAR	DIAMETER	12,7 MM	0.2	124587	137205	20

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

### Impact Test

Test Specimen: CHARPY 10X55X10 V NOTCH

Direction: Transverse

Temperature: 32°F

Striking tup: 0.315"

AE1	AE2	AE3	AE4	AE5	AE Avg	SA1	SA2	SA3	SA4	SA5	SA Avg
(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(%)	(%)	(%)	(%)	(%)	(%)
					22	75	75	75			

Required: Min

Max

Heat	Control Lot	Heat Pipe N°	Position	AE1	AE2	AE3	AE4	AE5	AE Avg	SA1	SA2	SA3
		Tr.Lot		(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(Ftlb)	(%)	(%)	(%)
128230	030002380109	E 01	Bottom	110	116	115			114	100	100	100

AE - Absorbed Energy; SA - Shear Area;

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

FAX: (55-31) 3328-2632

e-mail:sergio.lopes@vallourec.com

SÉRGIO RICARDO SILVA LOPES - CREA/MG 60498

TECHNICAL RESPONSIBLE

DATE

10.30.2014

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 47.9 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 86.2 ton(s) of Carbon Dioxide CO<sub>2</sub> in the atmosphere.