

Heat: 820171
Your PO: 243419

Order: 3171475 Line: 1
Item: 1/2" 160 0.188" PIPE SMLS A106 GR B PE SRL



Vallourec Tubos para Indústria S/A
Barreiro Plant - Av. Olinto Meireles, 65
ZIP 30640-010 - Belo Horizonte, MG



Inspection Certificate

(According to DIN EN 10204.3.1)

Nº.: 0030058749 / 00

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Customer Order No/Item: 21009720 - PO 113718

Country: USA

Material Number: 415525

Work Order: 615918 / 20

Customer Order: 21009720 - PO 113718

Material Supply Authorization: 21009720 - PO 113718

Inspection: Vallourec Soluções Tubulares do Brasil S.A.

DESCRIPTION OF PRODUCTS: SEAMLESS STEEL PIPE COLD DRAWN , PLAIN ENDS , NORMALIZED

DIMENSIONS: 0.840" X 0.188" **GRADE:** C # B # B

STANDARD: ASTM A 106 - 19 A ASTM A 530 - 18

IN ACCORDANCE ALSO TO THE STANDARDS: ASTM A 53 - 20 # ASME SA-106 - 19 ASME SA 530 - 19 # ASME SA-53 - 19

SURFACE PROTECTION: EXTERNAL: OILED PIPE ENDS PROTECTOR: NO PROTECTOR

TOLERANCES: OUTSIDE DIAMETER (PIPE BODY): -0.02 " / +0.02 " WALL THICKNESS: -0.02 " / +0.39 "

LENGTH: RANDOM 18.0 FT - 24.0 FT

STANDARD MARKING: Paint stenciled in the pipe body: MANUFACTURER ASTM/ASME A/SA-106 B C NDE SCH 160 0.840 X 0.188 HEAT NUMBER ASTM/ASME A/SA-53 B S

SHIPPING MARKING: TEXAS PIPE * P.O 302119/ITEM 2 * VUSA 21009720 * HOUSTON * MADE IN BRAZIL 615918/20

| Heat | Colector Lot | Pieces |
|--------|--------------|------------|
| 196132 | 599715 | 33 |
| 196383 | 599716 | 50 |
| 820171 | 606216 | 169 |
| | 606217 | 254 |
| | Total | 506 |

THE PRODUCT IS SATISFACTORY IN THE FOLLOWING TESTS / INSPECTIONS: DIMENSIONAL # VISUAL # BENDING TEST # EDDY CURRENT TEST : EDDY-CURRENT ACC. ASTM E 309 #

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Chemical Composition (%)

Process: Electric Arc Furnace (EAF), heats fully killed

CE1: Cr + Cu + Mo + Ni + V

| | | C | Mn | P | S | Si | Ni | Cr | Mo | Al | Cu | V | Nb | B | Ti | N | Ca | CE1 |
|-------------------------|--------------------|-------|------|-------|--------|------|------|------|-------|-------|------|-------|-------|--------|-------|--------|--------|------|
| Product Analysis | Min | | 0.29 | | | 0.10 | | | | | | | | | | | | |
| | Max | 0.220 | 1.20 | 0.020 | 0.0300 | | 0.40 | 0.40 | 0.150 | | 0.40 | 0.060 | 0.020 | 0.0010 | | | | 1.00 |
| | Min | | 0.29 | | | 0.10 | | | | | | | | | | | | |
| | Max | 0.220 | 1.20 | 0.020 | 0.0300 | | 0.40 | 0.40 | 0.150 | | 0.40 | 0.060 | 0.020 | 0.0010 | | | | 1.00 |
| Heat | Control Lot | | | | | | | | | | | | | | | | | |
| 196132 | 030003815672 | 0.171 | 1.03 | 0.010 | 0.0025 | 0.29 | 0.05 | 0.09 | 0.024 | 0.031 | 0.11 | 0.004 | 0.000 | 0.0002 | 0.003 | 0.0077 | 0.0015 | 0.28 |
| | Check 1 | 0.173 | 1.04 | 0.010 | 0.0017 | 0.30 | 0.05 | 0.09 | 0.022 | 0.032 | 0.11 | 0.004 | 0.002 | 0.0000 | 0.003 | 0.0070 | 0.0018 | 0.28 |
| | Check 2 | 0.172 | 1.03 | 0.011 | 0.0024 | 0.30 | 0.05 | 0.09 | 0.022 | 0.033 | 0.12 | 0.001 | 0.003 | 0.0000 | 0.003 | 0.0077 | 0.0010 | 0.28 |
| 196383 | 030003815671 | 0.177 | 1.05 | 0.009 | 0.0039 | 0.30 | 0.05 | 0.07 | 0.018 | 0.026 | 0.15 | 0.004 | 0.000 | 0.0002 | 0.002 | 0.0059 | 0.0012 | 0.29 |
| | Check 1 | 0.174 | 1.06 | 0.010 | 0.0038 | 0.30 | 0.05 | 0.07 | 0.016 | 0.028 | 0.15 | 0.001 | 0.003 | 0.0000 | 0.002 | 0.0064 | 0.0015 | 0.29 |
| | Check 2 | 0.173 | 1.06 | 0.010 | 0.0042 | 0.30 | 0.05 | 0.07 | 0.016 | 0.028 | 0.16 | 0.001 | 0.003 | 0.0000 | 0.002 | 0.0069 | 0.0014 | 0.30 |
| 820171 | 030003853343 | 0.180 | 1.08 | 0.008 | 0.0010 | 0.29 | 0.03 | 0.03 | 0.010 | 0.024 | 0.02 | 0.002 | 0.001 | 0.0003 | 0.005 | 0.0050 | 0.0010 | 0.09 |
| | Check 1 | 0.172 | 1.08 | 0.007 | 0.0001 | 0.28 | 0.03 | 0.04 | 0.004 | 0.026 | 0.02 | 0.004 | 0.000 | 0.0000 | 0.004 | 0.0056 | 0.0014 | 0.10 |
| | Check 2 | 0.180 | 1.09 | 0.008 | 0.0010 | 0.28 | 0.03 | 0.03 | 0.004 | 0.026 | 0.02 | 0.002 | 0.000 | 0.0000 | 0.004 | 0.0050 | 0.0016 | 0.09 |

CE: Combined Elements;

Tensile Test

Specimen Direction: Longitudinal

Temperature: Room Temperature

Wall Thickness: 0.188"

Gauge Length: L0=2"

Method:Elong.Total Under Load 0.50 %

| Heat | Control Lot | Type of Specimen | Area (S _{qin}) | YS (PSI) | TS (PSI) | E (%) |
|--------|--------------|------------------|--------------------------|----------------------|----------|-------|
| | | | | Required: Min | | |
| | | | | Max | | |
| | | | | 40000 | 70000 | 30.0 |
| 196132 | 030003815672 | FULL SECTION | 0.4 | 47400 | 72700 | 44.0 |
| 196383 | 030003815671 | FULL SECTION | 0.4 | 48900 | 73100 | 42.0 |
| 820171 | 030003853343 | FULL SECTION | 0.4 | 48400 | 71600 | 48.0 |
| | 030003853344 | FULL SECTION | 0.4 | 48000 | 71200 | 47.0 |

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

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Hardness Test

Scale: HV10

| Heat | Control Lot | | Required: Min | |
|--------|--------------|------|---------------|-------|
| | | | Max | 246.0 |
| 196132 | 030003815672 | 5997 | 152.0 | |
| 196383 | 030003815671 | 5997 | 168.0 | |
| 820171 | 030003853343 | 6062 | 171.0 | |
| | 030003853344 | 6062 | 176.0 | |

Remarks:

NACE MR-01-75/ISO15156 <(>&<)> MR0103 CERTIFIED

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) 3328-2987
e-mail:assistencia.autoind-bra@vallourec.com


MIRELLE OLIVEIRA SPINDOLA - CREA-MG 173749
TECHNICAL RESPONSIBLE

DATE
10.03.2022