

Mill Test Certificate

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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1826 Product Size: 24STD

Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001106

Production Date:

May 08, 2014

ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings NPS 24 STD 0.375 INCHWT SMLS 2014/05 NDE 750PSI

Product Standards:

HEAT BSM-1826 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

| BSN | | | П |
|------------------------|----------------|--------------|-------------------------|
| BSM-1826 | | Heat | |
| Heat | | Test Type | |
| NPS 24 STD 0.375in. WT | | Product Size | Product: Details |
| 4 | | Pieces | |
| DRL | | Length | |
| 94.62 | lb/ft | Mass | |
| <5 | μR/hr | Geiger | |
| <10 | Gauss | Res. Mag. | |
| Pass | Insp. | Visual | |
| Pass | | OD | Z |
| Pass | WT | TU | on-Destruc |
| Pass | ASTM E213 ASTM | TU | Non-Destructive Testing |
| Pass | ASTM | ET | |
| Pass | 750PSI/ 5 s | HydroTest | |
| 32.5° Bevel | Condition | End | |

| | | BSM-1826 | Heat | |
|--|---|-------------|--------------------|-------------------------|
| The second secon | Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed | | Steelmaking Method | |
| 200 | Product 0.20 | Heat | Test Type | |
| | 0.20 | 0.20 | С | |
| | 0.83 | 0.86 | Mn | |
| - | 600.0 88.0 | 0.010 | Р | |
| | 800.0 | 0.010 0.009 | S | Chemical |
| | 0.24 | 0.24 | Si | Chemical Analysis (wt%) |
| | 0.06 | 0.06 | Cr | wt%) |
| | 0.07 | 0.09 | Си | |
| | 0.02 | 0.01 | Мо | |
| | 0.04 | 0.07 | N: | |
| | 0.003 | | ٧ | |
| | 100.0 | | Ti | |
| | 0.001 | | Nb | |
| | 0.0004 | 0.0003 | В | |
| | 0.36 | 1 | CE(IIW) | |
| | 0.36 | 1 | CE(CSA) | |

| | BSM-1826 | | Heat | |
|---|----------------------------|------------|-----------------|-----------------------|
| | Heat | | Test Type | |
| | Ferrite & Pearlite | | Microstructure | |
| 0.000 | 75 HRBW | | Hardness | D. |
| 2000 September 2000 | Pass | | Flattening Test | |
| | Longitudinal; 38.1 mm x WT | 50mm GL | Tension Test | Mechanical Properties |
| Service of the property of the property | 45,800 | psi | Yield (Rt0.5) | |
| | 68,500 | psi | Tensile (Rm) | |
| | 0.67 | (Rt0.5/Rm) | Υ/Τ | ii. |
| | 43 | % | Elongation (A) | |

| | BSM-1826 | | Heat | |
|--|----------|----------------|---------------|--|
| | ı | Standard | Test | |
| | | Sample Details | Impact Test | |
| | | °C | Temp | |
| | L | J | | |
| | - | J | Impact Energy | |
| | 1 | J | | |
| | 1 | AVG | | |
| | 1 | % | | |
| | 1 | % | % Shear | |
| | t | % | hear | |
| | ı | AVG | | |
| | - | mm | | |
| | ı | mm | Lateral Ex | |
| | ı | mm | l Expansion | |
| | r | AVG | | |

Additional Details:

- 🗸 We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2013 Grade B A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.
- \checkmark This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2010 Section 2.1
- ✓ No weld repairs have been performed on this product.
- √ This product has not come into contact with mercury during the Bri-Steel Manufacturing processes.
- \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

Kenton Dechant, P.Eng.

Manager of Quality and R&D

C- \$ 2014 May 21