

Will Test Certificate

2125-64 Avenue, Edmonton, AB Canada T6P 1Z4 **Bri-Steel Manufacturing Inc.**

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www.brichemsteel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-0380

Product Size: NPS 16 STD

Production Date: June 26, 2012

Production Method: **Hot Expansion**

Product Heat Treatment: As-rolled

Product Standards: ASTM/ASME A/SA106-2011 Grade B/C, A/SA53-2012 Grade B Type S, NACE MR0175-2009

Product Markings: .BRI-STEEL MFG NPS 16 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0380 (PIPE # LENGTH MASS) 62.58lb/ft NDE 1000PSI NACE MR0175 2012/06 MADE IN CANADA.

| Product Details Non-Destructive Testing Non-Destructive Testing Fig. Nation Structive Testing Non-Destructive Testing Fig. Nation Structive Testing | | т- | | |
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| Product Details Non-Destructive Testing | BSM-0380 | | | |
| Product Details Non-Destructive Testing Product Details Mass Geiger Res.Mag. Visual UT UT ET HydroTest SCH Pieces Length lb/ft μR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 1000 psi/5s STD DRL 62.58 <5 | Heat | Test Type | | |
| Details Non-Destructive Testing Non-Destructive Testing Mass Geiger Res.Mag. Visual UT UT ET HydroTest HydroTest H Pieces Length lb/ft µR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 1000 psi/5s DRL 62.58 <5 <20 Pass Pass Pass — Pass Pass | 16 | NPS | | P |
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| HydroTest 309 1000 psi/5s Pass | . — | ASTM E213 | TU | esting |
| /droTest 00 psi/5s Pass | Pass | ASTM E309 | ET | |
| End Condition 37.5° Bevel | Pass | 00 psi/5s | HydroTest | |
| | 37.5° Bevel | Condition | End | |

| BSM-0380 | Heat | | |
|------------------------|---------------------------|--------------------|-------------------------|
| Heat | Test Type | | |
| Refining; Vacuum Degas | Blast Furnace; EAF; Ladle | Steelmaking Method | |
| 0.20 | n | | |
| 0.90 | Μ'n | | |
| 0.012 | P | | |
| 0.012 0.007 | S | | Chemical Analysis (wt%) |
| 0.20 | Si | | l Analysis |
| 0.06 | գ | | (wt%) |
| 0.07 | ი | | |
| 0.01 | Mo | | |
| 0.03 | Ni | | |
| 0.004 | ٧ | | |
| 0.002 | Ti | | |
| 100.0 | Nb | | |
| 0.0003 | В | | |
| 0.37 | (IIW) | æ | |
| 0.38 | (CSA) | Œ | |

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|--------------|--------------------|--------------------------------------|----------------|-----------------------|
| | BSM-0380 Heat | Heat | | |
| | Heat | Test Type | | |
| | Ferrite & Pearlite | Microstructure | | |
| | 74 | HRBW | Hardness | |
| | Pass | Flattening Test | | Mechan |
| Longitudinal | Transverse | Flattening Test 50mm GL; 38mm x WT | Tension Test | Mechanical Properties |
| 54,500 | 46,100 | psi | Yield (Rt0.5) | |
| 54,500 | 50,500 | psi | Yield (Rp0.2) | |
| 75,000 | 82,500 | psi | Tensile (Rm) | |
| 0.73 | 0.56 | (Rt0.5/Rm) | Υ/Τ | |
| 43 | 4 | % | Elongation (A) | |

Additional Details:

- Inc. in accordance with ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, and that the results meet the corresponding requirements. We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing
- Service, and NACE MR0103-2010 Section 2.1. √ This pipe product meet the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour
- No weld repairs have been performed on this product. This product has no mercury contamination.

This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1

Mill Test Certificate approved by:

Manager of Quality and R&D Kenton Dechant, P.Eng.