



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0021** Product Size: **NPS 18 STD** Production Date: **2011 Aug 31**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASTM/ASME A/SA106-2010 Grade B, A/SA53-2010 Grade B Type S, NACE MR0175-2003**

Product Markings: **.BRI-STEEL MFG NPS 18 STD ASTM/ASME A/SA106 GR B HEAT BSM-0021 NDE 900 PSI NACE MR0175-03 2011/09 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Metric Tonnes	Geiger $\mu$ R/hr	Res Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 900 psi/5s	End Condition
BSM-0021	Heat	18	STD	1	DRL	1.41	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel

Chemical Analysis (wt%)																		
Heat	Test Type	Steelmaking Method		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (I/W)	CE (CSA)
BSM-0021	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass		0.21	0.88	0.011	0.009	0.23	0.03	0.11	0.03	0.03	0.002	0.001	0.001	0.0001	0.38	0.39

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRB	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Elongation (A) %
BSM-0021	Heat	Ferrite & Pearlite	77	Pass	Transverse; 50mm GL; 38mm x WT		51000	51000	77500	34

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected in accordance with ASTM/ASME A/SA106-2010, A/SA53-2010 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meet the sour service requirements of NACE MR0175/ISO 15156-2003 Annex A2 for Region 3 Sour Service, and NACE MR0103-2004 Para. 2.1.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

  
 2011 Sept 21  
 Kenton Dechant, P. Eng.  
 Manager of Quality and R&D