



## Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0014** Product Size: **NPS 18 STD** Production Date: **2011 Aug 23**

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-0014 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	Gelger $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 900 psi/5s	End Condition
BSM-0014	Heat	18	STD	2	DRL	2.82	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel

Steelmaking Method		Chemical Analysis (wt%)																
Heat	Test Type	Blast Furnace; EAF; Ladle		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (I/W)	CE (CSA)
		Refining; Vacuum Degas		0.20	0.86	0.013	0.008	0.23	0.03	0.11	0.02	0.03	0.002	0.001	0.001	0.0001	0.36	0.37
BSM-0014	Heat																	

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRB	Flattening Test	Tension Test		Yield (Rp0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Elongation (A) %
					Transverse; 50mm GL; 38mm x WT	Pass				
BSM-0014	Heat	Ferrite & Pearlite	77	Pass						

**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.

Mill Test Certificate approved by:

*[Signature]*  
 2011 Sept 21

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

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