



**Bri-Steel Manufacturing Inc.**  
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## Mill Test Certificate

Product: **Seamless Carbon Steel Pipe**      Product Heat Number: **BSM-0180**      Product Size: **NPS 18 XS**      Production Date: **January 17, 2012**  
 Production Method: **Hot Expansion**      Product Heat Treatment: **As-rolled**

Product Standards: **ASTM/ASME A/SA106-2010 Grade B/C, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 18 XS ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0180 (PIPE # LENGTH MASS) NDE 1370PSI NACE MR0175 2012/01 MADE IN CANADA.**

Product Details				Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	UT	ET	HydroTest	End
BSM-0180	Heat	18	XS	11	DRL	93.45	µR/hr	Gauss	Insp.	WT	ASTM E309	1370 psi/5s	Condition
							<5	<20	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	CE	CE	
BSM-0180	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degas	0.18	0.89	0.018	0.008	0.24	0.03	0.13	0.02	0.04	0.003	0.001	0.001	0.0001	0.35	0.35

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
BSM-0180	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL; 38mm x WT	psi	psi	(Rt0.5/Rm)	%
			75		Longitudinal	44,500	73,000	0.61	43

**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/SA106-2010, 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 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 Section 2.1.
- ✓ 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:

*Kesph*  
 2014 Mar 18

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