



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1129** Product Size: **NPS 18 TRUE80** Production Date: **August 6, 2013**

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

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 18 TRUE80 0.94 inchWT HEAT BSM-1129 (PIPE # LENGTH MASS) 170.8lb/ft NDE SMLS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass	Gelger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End	
BSM-1129	Heat	NPS 18 TRUE80 0.94 in. WT	6	DRL	170.80	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	Condition	
						<5	<20	Pass	Pass	Pass	Pass	Pass	*	Plain End	

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-1129	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.18	0.89	0.010	0.004	0.31	0.05	0.08	0.01	0.02	0.006	0.002	0.001	0.0002	-	-
		Product	0.21	0.90	0.015	0.003	0.31	0.04	0.06	0.01	0.03	0.004	0.002	0.001	0.0001	0.38	0.39

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)				
BSM-1129	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL	psi	psi	(Rt0.5/Rm)	%				
			78	Pass	Longitudinal; 38.1mm x WT	53,000	71,500	0.74	57				
Heat	Test	Impact Test	Temp	Impact Energy	% Shear	Lateral Expansion	AVG	AVG	AVG				
BSM-1129	Standard	Sample Details	°C	J	%	mm	mm	mm	mm				
			-	-	-	-	-	-	-				

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/SA106-2011, A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.  
 ✓ This pipe product meets 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 not come into contact with mercury during the Bri-Steel Manufacturing processes.  
 ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.  
 \* Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:  
  
 2013 Aug 6  
 Kenton Dechant, P. Eng.  
 Manager of Quality and R&D