



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1124** Product Size: **NPS 18 TRUE80** Production Date: **August 2, 2013**

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

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

Product Markings: **BRI-STEEL MFG ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 18 TRUE80 0.94 inchWT HEAT BSM-1124 (PIPE # LENGTH MASS) 170.8lb/ft NDE SMILS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End	
BSM-1124	Heat	NPS 18 TRUE80 0.94 in. WT	3	DRL	lb/ft	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	Pass	Condition	
					170.80	<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-1124	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.21	0.91	0.015	0.003	0.32	0.04	0.06	0.01	0.02	0.003	0.002	0.001	0.0002	-	-
		Product	0.21	0.94	0.016	0.003	0.31	0.05	0.07	0.01	0.03	0.005	0.002	0.001	0.0002	0.39	0.40

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)			
					HRBW	Pass					50mm GL	psi	psi
BSM-1124	Heat	Ferrite & Pearlite	74	Pass	Longitudinal; 38.1mm x WT	46,900	68,000	0.69	59				
Heat	Test Standard	Impact Test	Temp	Impact Energy			% Shear			Lateral Expansion			
				9C	J	J	J	AVG	%	%	AVG	mm	mm
BSM-1124	-	-	-	-	-	-	-	-	-	-	-	-	-

**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.

Mill Test Certificate approved by: \_\_\_\_\_  
*Kenton Dechant*  
 2013 Aug 8  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D