



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

Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0804** Product Size: **NPS 24 SCH 60** Production Date: **April 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 24 SCH 60 0.969 inchWT HEAT BSM-0804 (PIPE # LENGTH MASS) 238.1lb/ft NDE SMLS NACE MR0175 2013/04 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	WT	UT	ET	HydroTest	End Condition
BSM-0804	Heat	NPS 24 SCH 60 0.969 in.WT	3	DRL	238.10	<5	<20	Pass	Pass	Pass	Pass	Pass	*	Plain End

Steelmaking Method		Chemical Analysis (wt%)														
Heat	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	NI	V	TI	Nb	B	CE	CE
BSM-0804	Blast Furnace; EAF; ladle Refining;	0.20	0.89	0.012	0.006	0.24	0.09	0.08	0.07	0.07	-	-	-	0.0003	-	-
	Vacuum Degass; Fully Killed	0.19	0.84	0.011	0.009	0.25	0.07	0.07	0.02	0.05	0.002	0.001	0.001	0.0001	0.36	0.36

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Yield (Rt0.5)		Yield (Rp0.2)		Tensile (Rm)	Y/T (Rt0.5/Rm)	Elongation (A)
					psi	psi	psi	psi			
BSM-0804	Heat	Ferrite & Pearlite	73	Pass	46,900	45,800	70,000	67,500	0.67	53	
				Transverse; 38.1mm x WT	38,700	39,600					
				Longitudinal; 38.1mm x WT						0.57	

Heat	Test Standard	Impact Test Sample Details	Temp 9C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	mm	mm	mm	AVG	
BSM-0804	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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, P.Eng.
 Manager of Quality and R&D
 2013 Apr 12

*Note that this product was hydrotested to 1000 psi for 5 seconds.