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-0787** Product Size: **NPS 14 STD** Production Date: **March 25, 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 14 STD 0.375 inchWT HEAT BSM-0787 (PIPE # LENGTH MASS) 54.57lb/ft NDE SMLS NACE MR0175 2013/03 MADE IN CANADA.**

Product Details						Non-Destructive Testing								
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res.Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest	End Condition
BSM-0787	Heat	NPS 14 STD 0.375 in.WT	4	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	--	37.5° Bevel

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0787	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.22	0.92	0.016	0.003	0.34	0.06	0.07	0.01	0.03	0.004	0.002	0.001	0.0001	-	-
		Product	0.21	0.94	0.017	0.005	0.34	0.05	0.07	0.01	0.03	0.003	0.002	0.001	0.0002	0.39	0.40

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-0787	Heat	Ferrite & Pearlite	84	Pass	Transverse; 38.1mm x WT	51,500	49,600	76,000	0.68	41
					Longitudinal; 38.1mm x WT	53,000	52,000	74,000	0.72	36

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:

2013Apr1

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