



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.brihemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0784** Product Size: **NPS 14 SCH 140** Production Date: **March 21, 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 SCH 140 1.25 inchWT HEAT BSM-0784 (PIPE # LENGTH MASS) 170.2lb/ft NDE SMLS NACE MR0175 2013/03 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geliger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition
BSM-0784	Heat	NPS 14 SCH 140 1.25 in. WT	7	DRL	170.20	<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
			Heat	0.22	0.92	0.014	0.001	0.27	0.05	0.04	0.01	0.03	0.003	0.002	0.001	0.0003	-
BSM-0784	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Product	0.22	0.93	0.015	0.002	0.31	0.05	0.05	0.01	0.02	0.003	0.002	0.001	0.0001	0.39	0.40

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
				HRBW	Flattening Test					
BSM-0784	Heat	Ferrite & Pearlite	78	Pass	Pass	55,000	54,000	74,500	0.74	48
						49,000	49,000	73,500	0.67	56

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:

[Signature]
2013 APR 1

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