



Mill Test Certificate

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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0084** Product Size: **NPS 24 STD** Production Date: **2011 Nov 3**

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

Product Standards: **ASTM/ASME A/SA106-2010 Grade B/C, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 24 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0084 (PIPE # LENGTH MASS) NDE 740PSI NACE MR0175 2011/11 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	Hydrotest 740 psi/5s	End Condition
BSM-0084	Heat	24	STD	1	DRL	3056 LB	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel


		Steelmaking Method		Chemical Analysis (wt%)														
Heat	Test Type	Blast Furnace; EAF; Ladle		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0084	Heat	Refining; Vacuum Degass		0.20	0.86	0.017	0.006	0.22	0.03	0.13	0.02	0.04	0.003	0.001	0.001	0.0002	0.36	0.37

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Elongation (A) %
BSM-0084	Heat	Ferrite & Pearlite	78	Pass	50mm GL, 38mm x WT	Transverse	47,100	47,100	76,500	40
					Longitudinal		47,800	47,500	74,000	41

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected in accordance with ASTM/ASME A/SA106-2010, A/SA53-2010 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meet 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.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:


 2011/11/03
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D