



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0083** Product Size: **NPS 24 STD** Production Date: **2011 Nov 2**
 Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**
 Product Standards: **ASTM/ASME A/SA106-2010 Grade B, A/SA53-2010 Grade B Type S, NACE MR0175-2009**
 Product Markings: **.BRI-STEEL MFG NPS 24 STD ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0083 (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	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 650 psi/5s	End Condition
BSM-0083	Heat	24	STD	3	DRL	9528 LB	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel

		Chemical Analysis (wt%)														
Heat	Test Type	Steelmaking Method														
		Blast Furnace; EAF; Ladle Refining; Vacuum Degas														
BSM-0083	Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
		0.21	0.86	0.017	0.006	0.22	0.03	0.13	0.02	0.04	0.003	0.001	0.001	0.0002	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test			Elongation (A) %		
					50mm GL; 38mm x WT	Yield (Rp0.5) psi	Yield (Rp0.2) psi		Tensile (Rm) psi	
BSM-0083	Heat	Ferrite & Pearlite	77	Pass	Transverse	50,500	49,600	49,000	75,000	34
					Longitudinal	50,500			76,000	42

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:

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