



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0331** Product Size: **NPS 24 STD** Production Date: **May 16, 2012**

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

Product Standards: **ASTM/ASME A/SA106-2011 Grade B/C, A/SA53-2012 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-0331 (PIPE # LENGTH MASS) 94.62lb/ft NDE 740PSI NACE MR0175 2012/05 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass lb/ft	Gelger $\mu\text{F/hr}$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 740 psi/5s	End Condition
BSM-0331	Heat	24	STD	10	DRL	94.62	<5	<20	Pass	Pass	Pass	...	Pass	Pass	37.5° Bevel


Chemical Analysis (wt%)																		
Heat	Test Type	Steelmaking Method		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass	0.20	0.88	0.012	0.007	0.26	0.04	0.11	0.03	0.04	0.003	0.001	0.002	0.0003	0.37	0.38	
BSM-0331	Heat																	

Mechanical Properties																		
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %							
					Ferrite & Pearlite	78						Pass	50mm GL, 38mm x WT	Transverse	Longitudinal	44,200	42,900	76,000
BSM-0331	Heat																	

**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 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.
- ✓ No weld repairs have been performed on this product. This product has no mercury contamination.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

  
 2012 May 29  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D