



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0338** Product Size: **NPS 24 STD** Production Date: **May 21, 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-0338 (PIPE # LENGTH MASS) 94.62lb/ft NDE NH NACE MR0175 2012/05 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0338	Heat	24	STD	1	DRL	94.62	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	740 psi/5s	Condition
							<5	<20	Pass	Pass	Pass	---	Pass	*	37.5° Bevel

		Chemical Analysis (wt%)															
Heat	Test Type	Steelmaking Method															
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass															
BSM-0338	Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE	
		0.21	0.90	0.017	0.010	0.23	0.03	0.11	0.02	0.03	0.003	0.001	0.001	0.0001	0.38	(IIW)	(CSA)
																	0.39

		Mechanical Properties								
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test			Y/T	Elongation (A)	
					HRBW	Pass	50mm GL, 38mm x WT			Transverse
BSM-0338	Heat	Ferrite & Pearlite	78	Pass	Longitudinal	49,600	49,500	72,500	0.68	44

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.

*Note that this pipe was too short to perform the hydrotest.

Mill Test Certificate approved by:

Kenton Dechant
 2012 May 30

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