



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0040** Product Size: **NPS 20 STD** Production Date: **2011 Oct 3**

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 20 STD ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0040 (PIPE # LENGTH MASS) NDE 800PSI NACE MR0175 2011/09 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 800 psi/5s	End Condition
BSM-0040	Heat	20	STD	6	DRL	78.60	<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 (IIW)	CE (CSA)
BSM-0040	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass		0.20	0.85	0.014	0.010	0.22	0.03	0.11	0.03	0.03	0.002	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-0040	Heat	Ferrite & Pearlite	79	Pass	Transverse; 50mm GL; 38mm x WT	54,000	54,000	76,500	32

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/SA106-2010, 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.
- ✓ 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 Feb 3

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