



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0006** Product Size: **NPS 20 STD** Production Date: **2011 Aug 9**

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-0006 NDE 800PSI NACE MR0175-03 2011/09 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	WT	UT ASTM E213	UT ASTM E309	ET ASTM E309	HydroTest 800 psi/5s	End Condition
BSM-0006	Heat	20	STD	3	DRL	9023 LB	<5	<20	Pass	Pass	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 (IIV)	CE (CSA)
BSM-0006	Heat	Blast Furnace: EAF; Ladle Refining: Vacuum Degass		0.20	0.86	0.016	0.013	0.23	0.03	0.11	0.03	0.03	0.003	0.002	0.001	0.0001	0.36	0.37

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRB	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Elongation (A) %
BSM-0006	Heat	Ferrite & Pearlite	79	Pass	Transverse; 50mm GL; 38mm x WT		52500	52500	78000	33

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 meets the sour service requirements of NACE MR0175/ISO 15156-2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2004 Para. 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
 2011 Oct 18

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