



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0019** Product Size: **NPS 18 STD** Production Date: **2011 Aug 29**

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 18 STD ASTM/ASME A/SA106 GR B HEAT BSM-0019 NDE 900 PSI NACE MR0175-03 2011/09 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-0019	Heat	18	STD	3	DRL	8470 LB	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	900 psi/5s	Condition
							<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
BSM-0019	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass		0.23	0.90	0.003	0.001	0.27	0.04	0.09	0.01	0.03	0.004	0.004	0.015	0.0001	(IIW)	(CSA)

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Elongation (A)
BSM-0019	Heat	Ferrite & Pearlite	HRBW	Pass	Transverse; 50mm GL; 38mm x WT		psi	psi	psi	%
			80				53,500	53,500	72,500	39

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.

Mill Test Certificate approved by:


 2011 Oct 22
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D