



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0202** Product Size: **NPS 20 STD** Production Date: **February 13, 2012**

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

Product Standards: **ASTM/ASME A/SA106-2011 Grade B/C, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 20 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0202 (PIPE # LENGTH MASS) NDE 910PSI NACE MR0175 2012/02 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-0202	Heat	20	STD	2	DRL	78.60	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	910 psi/5s	Pass	37.5° Bevel

Steelmaking Method		Chemical Analysis (wt%)														
Heat	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0202	Heat	0.19	0.91	0.013	0.007	0.22	0.06	0.08	0.01	0.03	0.005	0.001	0.002	0.0002	0.36	0.37

Mechanical Properties														
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)			
					50mm GL, 38mm x WT	Transverse						psi	psi	psi
BSM-0202	Heat	Ferrite & Pearlite	HRBW 76	Pass	Longitudinal	Transverse	49,500	49,300	73,000	74,000	0.62	0.67	45	41

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/SA53-2010 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:


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