



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0246** Product Size: **NPS 20 TRUE40** Production Date: **March 6, 2012**

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

Product Standards: **ASTM/ASME A/SAA106-2011 Grade B, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 20 TRUE40 ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0246 (PIPE # LENGTH MASS) NDE 1370PSI NACE MR0175 2012/03 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-0246	Heat	20	TRUFA0	10	DRL	lb/ft	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	1370 psi/5s	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	
		Blast Furnace; EAF; Ladle	Refining; Vacuum Degass																0.19
BSM-0246	Heat																		

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
					50mm GL; 38mm x WT	Transverse					
BSM-0246	Heat	Ferrite & Pearlite	76	Pass	Longitudinal	Longitudinal	47,700	47,500	72,500	0.66	48

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
 2012 Mar 21

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