



Mill Test Certificate

Bri-Steel Manufacturing Inc.

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Product: **Seamless Carbon Steel Pipe**

Product Heat Number: **BSM-0148**

Product Size: **NPS 18 XS**

Production Date: **2011 Dec 15**

Production Method: **Hot Expansion**

Product Heat Treatment: **As-rolled**

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

Product Markings: **.BRI-STEEL MFG NPS 18 XS ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0148 (PIPE # LENGTH MASS) NDE 1370PSI NACE MR0175 2011/11 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT	UT	ET	HydroTest	End Condition
BSM-0148	Heat	18	XS	5	DRL	18,093 LB	<5	<20	Pass	Pass	Pass	ASTM E213	ASTM E309	1370 psi/5s	37.5° Bevel

Chemical Analysis (wt%)																														
Steelmaking Method		C	Mn	P	S	Si	Cr	Cu	Mg	Ni	V	Ti	Nb	B	CE	CE														
Heat	Test Type	Blast Furnace; EAF; Ladle Refining; Vacuum Degass										0.20	0.92	0.018	0.012	0.25	0.03	0.13	0.02	0.04	0.003	0.001	0.001	0.0001	0.37	0.38				
BSM-0148	Heat																													

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.2) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL; 38mm x WT	Transverse					
BSM-0148	Heat	Ferrite & Pearlite	79	Pass			47,400	48,000	74,500	0.64	40
							47,200	46,500	74,500	0.63	44

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 Jan 11

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