



Bri-Steel Manufacturing Inc.
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4
 Tel: 001 (780) 469-6603
 Fax: 001 (780) 469-6986
 www.brichensteel.com

Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0141** Product Size: **NPS 18 STD** Production Date: **2011 Dec 13**

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 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0141 (PIPE # LENGTH MASS) NDE 1030PSI NACE MR0175 2011/11 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Gelger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0141	Heat	18	STD	2	DRL	lb/ft	uR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5° Bevel
						70.59	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Pass

		Chemical Analysis (wt%)														
Heat	Test Type	Steelmaking Method														
BSM-0141	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass														
		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
		0.21	0.92	0.010	0.015	0.24	0.02	0.10	0.01	0.03	0.003	0.001	0.001	0.0001	(IIW)	(CSA)
															0.38	0.39

		Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rp0.5)	Yield (Rp0.2)	Tensile (Rm)	V/T	Elongation (A)
BSM-0141	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL; 38mm x WT	Transverse	psi	psi	psi	(R0.5/Rm)	%
			78		Longitudinal		47,100	46,400	73,000	0.65	33
							48,600	47,800	75,000	0.65	42

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:

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