



**Bri-Steel Manufacturing Inc.**  
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## Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1136** Product Size: **NPS 18 TRUE80** Production Date: **August 7, 2013**

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

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SA106-2011 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 18 TRUE80 0.94 inchWT HEAT BSM-1136 (PIPE # LENGTH MASS) 170.8lb/ft NDE SMILS NACE MR0175 2013/08 MADE IN CANADA.**

Product Details						Non-Destructive Testing								
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition
BSM-1136	Heat	NPS 18 TRUE80	3	DRL	170.80 lb/ft	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	*	Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-1136	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.19	0.94	0.017	0.003	0.31	0.05	0.05	0.02	0.03	0.004	0.002	0.001	0.0004	-	-
		Product	0.20	0.93	0.014	0.003	0.32	0.05	0.06	0.01	0.03	0.003	0.002	0.001	0.0001	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)
BSM-1136	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL	Longitudinal; 38.1mm x WT	psi	psi	(Rt0.5/Rm)	%
			76				49,400	68,500	0.72	58
Heat	Test Standard	Impact Test	Temp °C	Impact Energy		% Shear		Lateral Expansion		AVG
BSM-1136	-	Sample Details	-	J	J	J	AVG	mm	mm	mm

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/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meets 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 not come into contact with mercury during the Bri-Steel Manufacturing processes.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

*Paul Sowden*

2013 AUG 15

Paul Sowden, T.T.  
Assistant QA Manager

cert # 164