



# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0837** Product Size: **NPS 20 SCH 60** Production Date: **April 16, 2013**

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

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SAA106-2011 Grade B/C NDE, A/SAS3-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG ASTM/ASME A/SAA106 GR B/C A/SAS3 GR B NPS 20 SCH 60 0.812 inchWT HEAT BSM-0837 (PIPE # LENGTH MASS) 166.4lb/ft NDE SMIS NACE MR0175 2013/04 MADE IN CANADA.**

Product Details				Non-Destructive Testing									
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	WT	ET	HydroTest	End Condition
BSM-0837	Heat	NPS 20 SCH 60 0.812 in. WT	2	DRL	166.40	<5	<20	Pass	Pass	Pass	Pass	*	Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Min	P	S	SI	Cr	Cu	Mo	NI	V	TI	Nb	B	CE	CE
			Heat	0.19	0.89	0.013	0.004	0.32	0.06	0.03	0.01	0.02	0.003	0.002	0.001	0.0002	-
BSM-0837	Blast Furnace: EAF; Ladle Refining; Vacuum Degass: Fully Killed	Product	0.21	0.95	0.015	0.006	0.32	0.07	0.04	0.02	0.02	0.003	0.002	0.001	0.0002	0.39	0.40

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	V/T	Elongation (A)			
					HRBW	Pass					psi	psi	(Rt0.5/Rm)
BSM-0837	Heat	Ferrite & Pearlite	77	Pass	Longitudinal; 38.1mm x WT	48,900	70,500	0.69	58				
Heat	Test Standard	Impact Test	Temp	Impact Energy		% Shear	AVG	AVG	Lateral Expansion				
				J	J					%	mm	mm	mm
BSM-0837	-	Sample Details	-	-	-	-	-	-	-				

**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/SAA106-2011, A/SAS3-2012, 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: \_\_\_\_\_  
 \_\_\_\_\_  
 2013 Apr 19  
 Kenton Dechant, P. Eng.  
 Manager of Quality and R&D