



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0836** 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/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 SCH 60 0.812 inchWT HEAT BSM-0836 (PIPE # LENGTH MASS) 166.4lb/ft NDE SMILS 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	UT	UT	ET	HydroTest	End Condition	
BSM-0836	Heat	NPS 20 SCH 60 0.812 in. WT	1	DRL	166.40	LR/hr	Gauss	Insp.	Pass	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-0836	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.19	0.90	0.010	0.003	0.30	0.05	0.06	0.01	0.02	0.003	0.002	0.001	0.0003	-	-
		Product	0.20	0.94	0.017	0.008	0.34	0.08	0.06	0.02	0.02	0.004	0.002	0.001	0.0002	0.38	0.39

Mechanical Properties																	
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test			% Shear			Lateral Expansion						
					50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	%	AVG	mm	mm	mm	AVG			
BSM-0836	Heat	Ferrite & Pearlite	78	Pass	Longitudinal; 38.1mm x WT	50,500	71,000	0.71	-	-	-	-	-	-	-	57	
Heat	Standard	Impact Test		Temp °C	Impact Energy												
BSM-0836	-	Sample Details		-	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG	

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:

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

Note that this product was hydrotested to 1000 psi for 5 seconds.