



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0104** Product Size: **NPS 16 STD** Production Date: **2011 Nov 16**

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 16 STD ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT BSM-0104 (PIPE # LENGTH MASS) NDE 1140PSI 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-0104	Heat	16	STD	1	DRL	62.58	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5° Bevel


		Chemical Analysis (wt%)														
Heat	Test Type	Steelmaking Method														
		Blast Furnace; EAF; Ladle Refining; Vacuum Degas														
BSM-0104	Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
		0.21	0.88	0.015	0.005	0.23	0.04	0.09	0.01	0.03	0.004	0.001	0.001	0.0002	0.38	0.38

		Mechanical Properties							
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (R _m)	Y/T	Elongation (A)
					HRBW	Pass			
BSM-0104	Heat	Ferrite & Pearlite	76	Pass	47,200	49,200	74,500	0.63	41
					47,200	50,000	76,000	0.65	43

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:


 2011 Feb 3
 Kenton Dechant, P. Eng.
 Manager of Quality and R&D