



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0723** Product Size: **NPS 20 XS** Production Date: **February 19, 2013**

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

Product Standards: **ASME B36.10-2004, API SL-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> SL-0898 API SL GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 XS 0.5 inchWT HEAT BSM-0723 (PIPE # LENGTH MASS) 104.1lb/ft NDE 1260 PSI SMIS NACE MR0175 2013/02 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Gelger	Res. Mag.	Visual Insp.	OD	UT WT	UT	ET	HydroTest	End Condition
BSM-0723	Heat	20	XS	18	DRL	104.10	<5	Gauss	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel


		Chemical Analysis (wt%)														
Heat	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0723	Blast Furnace; EAF; Ladle Refining;	0.21	0.91	0.014	0.010	0.26	0.05	0.10	0.01	0.07	-	-	-	0.0003	-	-
	Vacuum Degass; Fully Killed	Product	0.21	0.86	0.010	0.016	0.25	0.04	0.10	0.01	0.05	0.002	0.001	0.001	0.0003	0.37

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.2)	Yield (Rp0.2)	Tensile (Rm)	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	38.1mm x WT					
BSM-0723	Heat	Ferrite & Pearlite	72	Pass	Transverse; 38.1mm x WT	Longitudinal; 38.1mm x WT	44,500	44,500	70,500	0.63	44

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-44th Ed., 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:

  
 2013Feb28  
 Kerton Dechant, P.Eng.  
 Manager of Quality and R&D