



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0718** Product Size: **NPS 20 STD** Production Date: **February 18, 2013**

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

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, 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 <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 20 STD 0.375 inch WT HEAT BSM-0718 (PIPE # LENGTH MASS) 78.6lb/ft NDE 910 PSI SMLS NACE MR0175 2013/02 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition
BSM-0718	Heat	20	STD	10	DRL	78.60	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5° Bevel


Chemical Analysis (wt%)															
Heat	Steelmaking Method	Analysis		Analysis		Analysis		Analysis		Analysis		Analysis		Analysis	
BSM-0718	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE
		0.20	0.88	0.009	0.014	0.21	0.04	0.09	0.01	0.06	-	-	-	0.0005	(IIW)
		Product	0.21	0.89	0.010	0.015	0.22	0.03	0.10	0.02	0.05	0.002	0.001	0.001	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
				HRBW	Flattening Test					
BSM-0718	Heat	Ferrite & Pearlite	74	Pass	Transverse: 38.1mm x WT Longitudinal: 38.1mm x WT	39,600	40,500	71,500	0.55	42
						46,700	47,100	72,500	0.64	41

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-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:

  
 293 Feb 22  
 Kenton Dechant, P. Eng.  
 Manager of Quality and R&D