



# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0428** Product Size: **NPS 20 XS** Production Date: **July 30, 2012**

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, 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 NPS 20 XS ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0428 (PIPE # LENGTH MASS) 104.1lb/ft SMLS NDE 1260PSI NACE MR0175 2012/07 MADE IN CANADA.**

Product Details				Non-Destructive Testing													
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger $\mu$ R/hr	Res. Mag. Gauss	Visual Insp.	OD	WT	UT	UT	ET	HydroTest	End Condition	
BSM-0428	Heat	20	XS	18	DRL	104.10	<5	<20	Pass	Pass	Pass	Pass	ASTM E213	ASTM E309	1260 psi/5s	Pass	37.5° Bevel

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-0428	Blast Furnace; EAF; Ladle Refining:	Heat	0.19	0.86	0.006	0.004	0.23	0.05	0.06	0.03	-	-	-	-	0.0004	-	-
	Vacuum Degas; Fully Killed	Product	0.20	0.88	0.007	0.006	0.22	0.05	0.06	0.04	0.03	0.002	0.001	0.001	0.0003	0.37	0.38

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Transverse: 38.1mm x WT					
BSM-0428	Heat	Ferrite & Pearlite	76	Pass	Longitudinal: 38.1mm x WT	43,200	43,200	43,900	68,500	0.66	43

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 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:  
  
 2013 May 16  
 Kenton Dechant, P. Eng.  
 Manager of Quality and R&D