



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0569** Product Size: **NPS 16 STD** Production Date: **November 26, 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/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> 5L-0899 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 16 STD HEAT BSM-0569 (PIPE # LENGTH MASS) 62.58lb/ft NDE 1140 PSI SMLS NACE MR0175 2012/11 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass	Gelger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0569	Heat	16	STD	1	DRL	62.58	uR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	Pass

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0569	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.20	0.94	0.015	0.008	0.25	0.04	0.09	0.01	0.04	0.002	-	-	-	-	-
		Product	0.23	0.96	0.013	0.009	0.23	0.04	0.09	0.01	0.03	0.004	0.001	0.002	0.0003	0.41	0.42

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Tension Test		Yield (Rp0.2)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
				HRBW	Flattening Test					
BSM-0569	Heat	Ferrite & Pearlite	78	Pass	Transverse; 38.1mm x WT	47,600	47,600	76,500	0.62	42
					Longitudinal; 38.1mm x WT	47,100	47,000	76,000	0.62	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 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.

Mill Test Certificate approved by:

*[Signature]*  
 2012x00v28  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D