



**Bri-Steel Manufacturing Inc.**  
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## Mill Test Certificate

Product: **Seamless Carbon Steel Pipe**

Product Heat Number:

**BSM-1057**

Product Size:

**NPS 16 STD**

Production Date:

**July 9, 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/C 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/C A/SA53 GR B NPS 16 STD 0.375 inchWT HEAT BSM-1057 (PIPE # LENGTH MASS) 62.5lb/ft NDE 1150 PSI SMIS NACE MR0175 2013/07 MADE IN CANADA.**

Product Details					Non-Destructive Testing									
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	UT OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1150 psi/5s	End Condition
BSM-1057	Heat	NPS 16 STD 0.375 in. WT	24	DRL	62.58	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)														
Heat	Steelmaking Method	Analysis		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti
		Heat		0.22	0.91	0.011	0.006	0.22	0.09	0.06	0.01	0.06	-	-
		Product		0.23	0.93	0.018	0.007	0.23	0.09	0.07	0.01	0.05	0.004	0.001
BSM-1057	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed													

Mechanical Properties												
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %		
					50mm GL	Pass						
											Longitudinal; 38.1mm x WT	
BSM-1057	Heat	Ferrite & Pearlite	77	Pass			48,900	77,000	0.64	46		

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-1057	-	-	-												

### 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:

2013 JUL 15

Paul Sowden, T.T.  
Assistant QA Manager