



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0793** Product Size: **NPS 16 STD** Production Date: **March 26, 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/SAS3-2012 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/SAS3 GR B NPS 16 STD 0.375 INCH WT HEAT BSM-0793 (PIPE # LENGTH MASS) 62.58LB/FT NDE 1140 PSI SMIS NACE MR0175 2013/03 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0793	Heat	NPS 16 STD 0.375 in WT	3	DRL	62.58	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	1140 psi/5s	Condition
						<5	<20	Pass	Pass	Pass	Pass	Pass	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	CE
			Heat	0.20	0.87	0.012	0.004	0.23	0.04	0.06	0.01	0.04	-	-	-	0.0003	-
BSM-0793	Vacuum Degass; Fully Killed	Product	0.19	0.90	0.009	0.005	0.24	0.04	0.07	0.01	0.04	0.003	0.001	0.001	0.0002	0.36	0.36

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-0793	Heat	Ferrite & Pearlite	77	Pass	Transverse; 38.1mm x WT	44,900	43,600	72,000	0.62	43
					Longitudinal; 38.1mm x WT	48,200	48,200	73,000	0.66	39

**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/SAS3-2012 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 Apr 2  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D