



Bri-Steel Manufacturing Inc.
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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1495** Product Size: **NPS 16 STD** Production Date: **January 3, 2014**
 Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, A/SA333-2011 Grade 6, 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** MANUFACTURING INC. **<API> 5L-0898 API SPEC 5L NPS 16 STD 0.375 INCHWT GR B PSL1 SMLS 2013/12 NDE 1150PSI** **MADE IN CANADA**
HEAT BSM-1495 (PIPE LENGTH WEIGHT) 62.58lb/ft ASTM/ASME A/SA333 GR 6 A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT Pass	ET ASTM E309	HydroTest 1.150 psi/5s	End Condition
BSM-1495	Heat	NPS 16 STD 0.375 in. WT	25	DRL	62.58	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)															
Heat	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE (IIW)	CE (CSA)
BSM-1495	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	0.18	1.12	0.014	0.007	0.32	0.02	0.03	-	0.02	0.050	-	-	-	-
		0.20	1.10	0.014	0.014	0.33	0.02	0.02	0.01	0.06	0.050	0.003	0.001	0.0003	0.40

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	Longitudinal; 38.1mm x WT				
BSM-1495	Heat	Ferrite & Pearlite	79	Pass	Pass	56,500	77,000	0.73	41	

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear	Lateral Expansion						
				J	J	J		mm	mm	mm	mm	mm	mm	
BSM-1495	A/SA333	CVN Longitudinal (X-Y) 10x8	-45°C	87	62	127	40	35	45	60	74	1.05	1.89	1.23

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/SA333-2011, 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:

Kent Dechant 2014 Jan 3
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D