



Mill Test Certificate

Bri-Steel Manufacturing Inc.
 2125-64 Avenue, Edmonton, AB Canada T6B 1Z4
 Tel: 001 (780) 469-6603
 Fax: 001 (780) 469-6986
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1481** Product Size: **NPS 14 STD** Production Date: **December 23, 2013**
 Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled** MTR: **688**

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 NDE, A/SA53-2012 Grade B Type 5, NACE MR0175-2009, MR0103-2010**

Product Markings: **<API> 5L-0898 API SPEC 5L NPS 14 STD 0.375 INCHWT GR B PSL1 SMLS 2013/12 NDE 1300PSI** **MADE IN CANADA**
HEAT BSM-1481 (PIPE LENGTH WEIGHT) 54.57lb/ft ASTM/ASME A/SA333 GR 6 A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Gelger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition	
BSM-1481	Heat	NPS 14 STD	0.375 In.WT	7	DRL	54.57	UR/hr	Gauss	Insp.	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	Nb	B	CE (IIW)	CE (CSA)
BSM-1481	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.13	1.08	0.009	0.003	0.26	0.06	0.05	-	0.05	-	0.003	-	-	-	-
		Product	0.14	1.06	0.009	0.003	0.27	0.07	0.05	0.01	0.05	0.003	0.003	0.001	0.0003	0.34	0.32

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) %	Lateral Expansion	
					50mm GL	Longitudinal; 38.1mm x WT					% Shear	AVG
BSM-1481	Heat	Ferrite & Pearlite	78	Pass			52,500	69,000	0.76	45		
Heat	Standard	Impact Test Sample Details	Temp °C	Impact Energy J	AVG	%	%	AVG	mm	mm	AVG	
BSM-1481	A/SA333	CVN Longitudinal (X-Y) 10x8	-45°C	250	247	242	246	90	90	90	-	-

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:

2013 DEC 23

Paul Sowden, T.T.
 Assistant QA Manager