



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.brihemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0427** Product Size: **NPS 20 XS** Production Date: **July 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, 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 NPS 20 XS ASTM/ASME A/SA106 GR B/C A/SA53 GR B HEAT 95M-0427 (PIPE # LENGTH MASS) 104.1lb/ft SMLS NDE 1260PSI NACE MR0175 2012/07 MADE IN CANADA.**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Gelger μR/hr	Res.Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1260 psi/5s	End Condition
BSM-0427	Heat	20	XS	2	DRL	104.10	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel

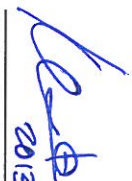
Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIV)	CE (CSA)
BSM-0427	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.19	0.86	0.006	0.004	0.23	0.05	0.06	0.03	0.03	-	-	-	0.0004	-	-
		Product	0.20	0.88	0.008	0.007	0.22	0.05	0.06	0.04	0.03	0.002	0.001	0.001	0.0003	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test					Elongation (A) %
					50mm GL	Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	
BSM-0427	Heat	Ferrite & Pearlite	75	Pass	Transverse: 38.1mm x WT	50,000	49,500	72,000	0.69	42
					Longitudinal: 38.1mm x WT	49,700	49,300	70,000	0.71	44

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 meet 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 no mercury contamination.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:


 2013 Mar 18
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D