



## Mill Test Certificate

Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-1021

Product Size: NPS 18 XS

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Production Date: June 26, 2013

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Product Standards: ASME B36.10-2004, 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 18 XS 0.5 inchWT HEAT BSM-1021 (PIPE # LENGTH MASS) 93.45lb/ft NDE 1300 PSI SMLS NACE MR0175 2013/06 MADE IN CANADA.

Product Details						Non-Destructive Testing								
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	UT	ET	HydroTest	End		
BSM-1021	Heat	NPS 18 XS 0.5 in. WT	1	DRL	lb/ft	µR/hr	Gauss	Insp.	OD	WT	ASTM E213	ASTM E309	1300 psi/5s	Condition
					93.45	<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	Nb	B	CE	CE
BSM-1021	Blast Furnace: EAF; Ladle Refining: Vacuum Degass; Fully Killed	Heat	0.19	0.91	0.009	0.004	0.24	0.04	0.07	0.01	0.04	-	-	-	-	(IIW)	(CSA)
		Product	0.20	0.93	0.008	0.003	0.25	0.04	0.08	0.01	0.04	0.004	0.001	0.001	0.0003	0.37	0.38

Mechanical Properties												
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)	Lateral Expansion		
BSM-1021	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL	psi	psi	(Rt0.5/Rm)	%	mm	mm	mm
			75	Pass	Longitudinal; 38.1mm x WT	44,000	71,000	0.62	46			
Heat	Test Standard	Impact Test	Temp	Impact Energy	% Shear							
BSM-1021	-	Sample Details	°C	J	%							
			-	J	%							
			-	J	%							
			-	AVG	AVG							
			-	mm	mm							
			-	mm	mm							
			-	AVG	AVG							

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-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 03

Paul Sowden, T.T.  
 Assistant QA Manager