



# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-2080      Production Date: Oct 02, 2014  
Production Method: Hot Expansion      Product Heat Treatment: As-rolled      Certificate No.: MTR- 001407  
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A/SA106-2014 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

## Product Markings



<API & L/C No.> API SPEC 5L NPS 20 SCH 100 1.281 INCHWT GR B/X42 PSL1 SMLS 2014/10 NDE 2970PSI  
HEAT BSM-2080 (PIPE # LENGTH MASS) 256.1lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

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	UT	ET	HydroTest 2970 PSI/ 5 s	End Condition
BSM-2080	Heat	NPS 20 SCH 100 1.281in. WT	1	DRL	256.1	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)
			Heat	0.14	0.99	0.002	0.002	0.24	0.05	0.06	0.01	0.02	0.004	0.002	0.001	0.0001	-
		Product	0.16	1.03	0.022	0.004	0.32	0.06	0.06	0.03	0.02	0.006	0.003	0.001	0.0003	0.35	0.35
BSM-2080	Blast Furnace: EAF; Ladle Refining: Vacuum Degass; Fully Killed																

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL		Yield (Rt0.5) psi		Tensile (Rm) psi		V/T (Rt0.5/Rm)		Elongation (A) %
BSM-2080	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 19.05 mm x WT		50,000		71,500		0.70		48

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
BSM-2080	-	-	-	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	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 5L-45th Ed., ASTM/ASME A/SA106-2014 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 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:

Tonya Lam, C.E.T.  
Assistant QA Manager

*T. Lam* Oct 108/2014