




# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-2374      Product Size: 18STD      Production Date: Apr 30, 2015  
Production Method: Hot Expansion      Product Heat Treatment: As-rolled      Certificate No.: MTR- 001757  
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012  
Product Markings  
 <API & L/C No.> API SPEC 5L NPS 18 STD 0.375 INCHWT 70.59LB/FT GR B PSL1 SMLS 2015/04 NDE 1000PSI  
HEAT BSM-2374 (PIPE # LENGTH MASS) 70.59lb/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 $\mu$ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT	ET	HydroTest 1000 PSI/ 5 s	End Condition
BSM-2374	Heat	NPS 18 STD 0.375in. WT	28	DRL	70.59	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5" Bevel

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	0.20	1.17	0.017	0.010	0.29	0.02	0.05	0.01	0.01	0.045	-	-	-	-	-
		Product	0.17	1.18	0.013	0.005	0.30	0.03	0.04	0.01	0.01	0.060	0.017	0.001	0.0004	0.39	0.39
			0.17	1.14	0.017	0.005	0.29	0.03	0.04	0.01	0.01	0.045	0.019	0.001	0.0005	0.38	0.38
BSM-2374		Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed															

Mechanical Properties										Yield (Rt0.5) psi			Tensile (Rm) psi			V/T (Rt0.5/Rm)		Elongation (A) %	
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL					50,000			73,500			0.68		42	
BSM-2374	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 1.5 in. x WT														

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy J						% Shear						Lateral Expansion mm			
				J	J	J	AVG	%	%	%	%	AVG	mm	mm	mm	mm	mm	mm	mm
BSM-2374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013 Grade B/C A53-2012/SA53-2013, 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.

Mill Test Certificate approved by:

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2012 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.

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

 May 10/02/2015