



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-3123      Production Date: Apr 27, 2017  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 0033328  
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2009  
 MR0103/ISO 17495:2015  
 Product Markings: <API & L/C No.> API SPEC 5L NPS 16 STD 0.375 INCHWT GRB PSL1 SMLS 2017/04 NDE 1150PSI  
 HEAT BSM-3123 (PIPE # LENGTH MASS) 62.67lb/ft ASTM/ASME A/SA106 GR B 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	Gelger	Res. Mag.	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition
BSM-3123	Heat	NPS 16 STD 0.375in. WT	2	DRL	62.67	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	35° Bevel

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)															
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B			
			0.21	0.58	0.008	0.002	0.24	0.02	0.01	0.01	0.01	0.01	0.002	0.002	0.001	0.0002	0.31	
BSM-3123	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed (at TPCCO China)	Heat	0.21	0.58	0.008	0.002	0.24	0.02	0.01	0.01	0.01	0.01	0.01	0.002	0.002	0.001	0.0002	0.31
		Product	0.22	0.57	0.014	0.003	0.25	0.03	0.01	0.00	0.01	0.00	0.01	0.002	0.002	0.001	0.0002	0.32
			0.23	0.56	0.017	0.006	0.25	0.03	0.01	0.00	0.01	0.00	0.01	0.002	0.002	0.001	0.0004	0.33

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)
BSM-3123	Heat	Ferrite & Pearlite	74 HRBW	Pass	Longitudinal; 1.5 in. x WT	41 500 psi	69 500 psi	0.60	39

Heat	Test	Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)		Impact Energy Results (J)		Shear (%)	Lateral Expansion (mm)
						(3 Tests) AVG	(3 Tests) AVG	(3 Tests) AVG	(3 Tests) AVG		
BSM-3123	-	-	-	-	-	-	-	-	-	-	-

**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/SA106-2015, A53-2012/SA53-2015, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 (APIQR-1584), API Q1, and PED 2014/68/EU.
- ✓ 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/ISO 17495:2015 Section 13.1
- ✓ 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 May 10/2/2017

Tonya Lam, P. Tech (Eng.)  
 Assistant QA Manager