



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-3136      Product Size: NPS 20 TRUE 40      Production Date: May 10, 2017  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 003338  
 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



<API & L/C No.> API SPEC 5L NPS 20 TRUE 40 0.594 INCHWT GRB PSL1 SMLS 2017/05 NDE 2250PSI  
 HEAT BSM-3136 (PIPE # LENGTH MASS) 123.24lb/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 μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition	
BSM-3136	Heat	NPS 20 TRUE 40 0.594in. WT	5	DRL	123.24	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	Plain End	

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)															
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)
			0.20	0.92	0.007	0.004	0.23	0.04	0.03	0.01	0.01	0.003	0.001	0.001	0.0001	0.37	-	0.37
BSM-3136	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed (at TPCCO China)	Heat	0.21	0.91	0.007	0.004	0.25	0.05	0.02	0.02	0.01	0.01	0.003	0.001	0.0002	0.37	-	0.38
		Product	0.21	0.90	0.010	0.004	0.26	0.05	0.02	0.01	0.01	0.003	0.001	0.001	0.0002	0.37	-	0.38

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-3136	Heat	Ferrite & Pearlite	77 HRBW	Pass	Longitudinal; 1.5 in. x WT	40 600	72 500	0.56	50

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-3136	-	-	-	-	(3 Tests) AVG	(3 Tests) AVG	-	(3 Tests) AVG

**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 9001:2015 (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

Mill Test Certificate approved by:  
  
 2017 May 16

✓ 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.

Kerton Dechant, P.Eng.  
 Manager of Quality and R&D