




# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-3191      Product Size: NPS 36 STD      Production Date: Jul 12, 2017  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 003407  
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B/C NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2015  
 Product Markings  
   
 <API & L/C No.> API SPEC 5L NPS 36 STD 0.375 INCHWT GRB PSL1 SMLS 2017/07 NDE 500PSI  
 HEAT BSM-3191 (PIPE # LENGTH MASS) 142.89lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175 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 Pass	UT (WT) ASTM E114	UT ASTM E213	ET ASTM E309	HydroTest 500PSI/ 5s	End Condition
BSM-3191	Heat	NPS 36 STD 0.375in. WT	5	DRL	142.89	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	Plain End

Heat	BSM-3191	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed (at Huanan China)	Chemical Analysis (wt%)																
			Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)
			Heat	0.16	1.10	0.007	0.004	0.26	0.15	0.14	0.01	0.05	0.060	0.001	0.001	0.0001	0.40	-	-
Product	0.16	1.12	0.008	0.003	0.26	0.17	0.10	0.01	0.05	0.063	0.037	0.001	0.0004	0.41	-	-	0.40		
			0.16	1.09	0.006	0.004	0.29	0.16	0.15	0.01	0.05	0.063	0.039	0.001	0.0004	0.40	-	0.39	

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-3191	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 1.5 in. x WT	51 000	72 500	0.70	38

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J) (3 Tests) AVG	Impact Energy Results (J) (3 Tests) AVG	Shear (%) (3 Tests) AVG	Lateral Expansion (mm) (3 Tests) AVG
BSM-3191	-	-	-	-	-	-	-	-

**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 ANSI/NACE MR0175/ISO 15156-2A:2015 (Annex A2 for Region 3 Sour Service)  
 ✓ 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, P. Tech (Eng.)  
 Assistant QA Manager