



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe    Product Heat Number: BSM-2947    Product Size: NPS 24 TRUE 40    Production Date: Nov 14, 2016  
 Production Method: Hot Expansion    Product Heat Treatment: Normalizing Forming    Certificate No.: MTR- 003039  
 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,

Product Markings  
 <API & L/C No.> API SPEC 5L NPS 24 TRUE 40 0.688 INCHWT GRB PSL1 SMLS 2016/11 NDE 1220PSI  
 HEAT BSM-2947 (PIPE # LENGTH MASS) 171.2lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B MADE IN CANADA




Product: Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Length	Pieces	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT (WT) ASTM E114	UT	ET	HydroTest	End Condition
BSM-2947	Heat	NPS 24 TRUE 40 0.688in. WT	DRL	7	171.2	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	30° 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(IIW)Max	CE(CSA)
BSM-2947	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed (at TPCO China)	Heat	0.18	1.12	0.013	0.002	0.30	0.04	0.01	0.01	0.01	0.055	0.002	0.001	0.0004	0.39	-	0.39
		Product	0.17	1.12	0.012	0.005	0.32	0.04	0.01	0.01	0.01	0.057	0.001	0.0003	0.38	-	-	0.38
			0.17	1.12	0.012	0.004	0.32	0.04	0.01	0.01	0.01	0.057	0.001	0.0003	0.38	-	-	0.38

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)
BSM-2947	Heat	Ferrite & Pearlite	0	Pass	2 in. GL Longitudinal; 1.5 in. x WT	48 500	75 500	0.64	50

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-2947	-	-	-	-	-	-	-	-

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  
 ✓ 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