



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2946 Production Date: Nov 09, 2016
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003038
 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
 Product Markings: MR0103/ISO 17495:2015
 <API & L/C No.> API SPEC 5L NPS 24 TRUE 40 0.688 INCHWT GRB PSL1 SMIS 2016/11 NDE 1220PSI
 HEAT BSM-2946 (PIPE # LENGTH MASS) 171.2lb/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	Geiger	Res. Mag.	Visual	OD	ET	HydroTest	End			
BSM-2946	Heat	NPS 24 TRUE 40 0.688in. WT	7	DRL	171.2	<5	<10	Pass	Pass	Pass	Pass	30° Bevel			

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)																
			C	Min	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)	
			0.18	1.12	0.013	0.002	0.30	0.04	0.01	0.01	0.01	0.01	0.055	0.002	0.001	0.0004	0.39	-	0.39
BSM-2946	Blast Furnace: EAF; Ladle Refining; Vacuum Degass; Fully Killed (at TPCO China)	Heat	0.16	1.11	0.011	0.004	0.33	0.05	0.01	0.01	0.01	0.01	0.058	0.003	0.001	0.0004	0.37	-	0.37
		Product	0.17	1.11	0.011	0.004	0.32	0.04	0.01	0.01	0.01	0.01	0.058	0.002	0.001	0.0004	0.38	-	0.38

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	V/T	Elongation (A)		
BSM-2946	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 1.5 in. x WT	50 000 psi	75 500 psi	0.66	50		

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-2946	-	-	-	-	(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-9001:2008 (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 Nov 11/2016

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