




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-3016 Product Size: NPS 18 STD Production Date: Jan 23, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003116
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB/X42 PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B/C 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 18 STD 0.375 INCHWT GRB/X42 PSL1 SMLS 2017/01 NDE 1490PSI
 HEAT BSM-3016 (PIPE # LENGTH MASS) 70.69lb/ft ASTM/ASME A/SA106 GR B/C 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. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition	
BSM-3016	Heat	NPS 18 STD 0.375in. WT	4	DRL	70.69	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	35° Bevel	

Heat	BSM-3016	Steelmaking Method Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed (at TRCO 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	Product	0.19	0.95	0.010	0.002	0.19	0.08	0.03	0.01	0.02	0.001	0.005	0.001	0.0008	0.37	-	0.38
			Product	0.20	0.99	0.009	0.003	0.21	0.08	0.03	0.01	0.02	0.003	0.005	0.002	0.0007	0.39	-	0.39	
				0.20	0.97	0.009	0.004	0.22	0.08	0.03	0.01	0.01	0.003	0.005	0.001	0.0007	0.38	-	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-3016	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 1.5 in. x WT	47 600	75 000	0.63	44		

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-3016	-	-	-	-	-	-	-	-	-

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with GRX42 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 / 24/2017

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