




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-3019 Product Size: NPS 18 STD Production Date: Jan 23, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003118
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB/X42 PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B/C NDE, AS3-2012/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 SM1S 2017/01 NDE 1490PSI
 HEAT BSM-3019 (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 μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition	
BSM-3019	Heat	NPS 18 STD 0.375in. WT	1	DRL	70.69	<5	<10	Pass	Pass	Pass	ASTM E114	ASTM E213	ASTM E309	1490PSI/ 5s	35° Bevel

Heat	BSM-3019	Steelmaking Method Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed (at TPCCO 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	0.20	0.88	0.84	0.007	0.007	0.016	0.015	0.23	0.22	0.05	0.06	0.10	0.10	0.01	0.01	0.07	0.06	-	0.002	0.001	0.001	0.001	0.0002	0.0004	0.36	0.36	-	0.36	0.37		
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GI	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-3019	Heat	Ferrite & Pearlite	76 HRBW	Pass	Longitudinal; 1.5 in. x WT	42 300	73 500	0.58	46

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-3019	-	-	-	-	-	(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 GRX42 ASTM/ASME A106-2014/SA106-2015, AS3-2012/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:

T. Lam Jan 24 / 2017

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