




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2588 Product Size: NPS 18 TRUE 40 Production Date: Nov 23, 2015
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002018
 Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
 Product Markings
 NPS 18 TRUE 40 0.562 INCHWT SMLS 2015/11 NDE 1500PSI
 HEAT BSM-2588 (PIPE # LENGTH MASS) 104.8lb/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	Geliger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1500PSI/ 5 s	End Condition
BSM-2588	Heat	NPS 18 TRUE 40 0.562in. WT	9	DRL	104.8	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	33° Bevel

Heat	BSM-2588	Steelmaking Method Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Chemical Analysis (wt%)																
			Test Type		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)
			Heat	Product	0.18	1.06	0.013	0.006	0.32	0.03	0.02	0.00	0.01	0.01	0.062	0.002	0.001	0.0004	0.38

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-2588	Heat	Ferrite & Pearlite	89 HRBW	Pass	Longitudinal; 1.5 in. x WT	63,500	84,500	0.75	46

Heat	BSM-2588	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion						
					J	J	J	AVG	%	%	%	AVG	mm	mm	mm	mm	AVG		
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008, API Q1, and PED 97/23/EC.
 ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2012 Section 2.1.
 ✓ 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, C.E.T.
 Assistant QA Manager
 Dec 103/2015