



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2627 Product Size: NPS 20 TRUE 40 Production Date: Jan 18, 2016
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002056
 Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
 Product Markings: NPS 20 TRUE 40 0.594 INCHWT SMLS 2016/01 NDE 1200PSI
 HEAT BSM-2627 (PIPE # LENGTH MASS) 122.9lb/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	Gelger	Res. Mag.	Visual Insp.	OD	UT WTR	UT	ET	HydroTest	End Condition	
BSM-2627	Heat	NPS 20 TRUE 40 0.594in. WT	2	DRL	122.9			Pass	Pass	Pass	Pass	Pass	Pass	Plain End	

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)															
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)	
BSM-2627	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.20	0.56	0.013	0.008	0.24	0.02	0.01	0.01	0.01	0.01	0.004	0.002	0.001	0.0003	0.30	0.31
		Product	0.21	0.55	0.014	0.005	0.25	0.03	0.01	0.01	0.01	0.002	0.001	0.001	0.0002	0.31	0.32	-

Heat		Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
Heat	Test Type					2 in. GL	1.5 in. x WT				
BSM-2627	Heat	Heat	Ferrite & Pearlite	73 HRBW	Pass	Longitudinal; 1.5 in. x WT	41,100	68,500	0.60	46	

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	AVG	%	%	AVG	mm	mm	mm	AVG	
BSM-2627	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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
 Jan 21 2016