



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2778 Production Date: May 26, 2016
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 002841
 Product Standards: ASME B36.10M-2015, 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
 NPS 30 STD 0.375 INCHWT SMLS 2016/05 NDE 950PSI
 HEAT BSM-2778 (PIPE # LENGTH MASS) 118.6lb/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	Geiger	Res. Mag.	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest	End Condition	
BSM-2778	Heat	NPS 30 STD 0.375in. WT	4	DRL	118.6	<5	<20	Pass	Pass	Pass	N12.5 Pass	-	Pass	35° Bevel	

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)																		
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)			
BSM-2778	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	Heat	0.17	1.21	0.016	0.004	0.29	0.03	0.01	0.01	0.01	0.01	0.01	0.050	0.001	0.001	0.0005	0.39	-	0.39
			Product	0.16	1.22	0.017	0.003	0.32	0.03	0.01	0.01	0.01	0.01	0.01	0.053	0.003	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-2778	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 1.5 in. x WT	49 300 psi	74 500 psi	0.66 (Rt0.5/Rm)	42 %

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-2778	-	-	-	-	-	(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 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 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/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:

2016 June 14

Kenton Dechant, P.Eng.
 Manager of Quality and R&D