



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1720 Product Size: 16 X 0.350 Production Date: Mar 24, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001090
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



NPS 16 X 0.350 INCHWT SMLS 2014/03 NDE
HEAT BSM-1720 (PIPE # LENGTH MASS) 58.4lb/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 $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest	End Condition
BSM-1720	Heat	NPS 16 X 0.350in. WT	18	DRL	58.4	<5	<10	Pass	Pass	Pass	Pass	Pass	-	32.5° Bevel

Chemical Analysis (wt%)																			
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)		
			Heat	0.20	0.85	0.020	0.010	0.23	0.07	0.01		0.05					-		
			Product	0.21	0.85	0.024	0.010	0.24	0.10	0.01	0.01	0.01	0.05	0.002	0.003	0.001	0.0003	0.37	0.37
BSM-1720			Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed																

Mechanical Properties												
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %			
BSM-1720	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 38.1 mm x WT	46,500	72,000	0.65	39			

Heat	Test	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
BSM-1720	Standard	-	-	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
				-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2010 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:

2014 May 21

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