



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1610 Product Size: 20S100 Production Date: Feb 06, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001504
Product Standards: ASME B36.10-2004, 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 SCH 100 1.281 INCHWT SMLS 2014/02 NDE
HEAT BSM-1610 (PIPE # LENGTH MASS) 256.1lb/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	Geiger $\mu\text{R/hr}$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest	End Condition
BSM-1610	Heat	NPS 20 SCH 100 1.281in. WT	1	DRL	256.1	<5	<10	Pass	Pass	Pass	Pass	Pass	*	Plain End

Chemical Analysis (wt%)														
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb
			Heat	0.19	0.89	0.008	0.010	0.22	0.04	0.08	0.02	0.03		
			Product	0.18	0.85	0.006	0.008	0.21	0.04	0.07	0.02	0.03	0.003	0.000
BSM-1610	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-1610	Heat	Ferrite & Pearlite	74 HRBW	Pass	Longitudinal; 25.4 mm x WT	37,200	65,500	0.57	47

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear			Lateral Expansion			
				J	J	J	AVG	%	%	%	mm	mm	mm	AVG
BSM-1610	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 A106-2014/SA106-2013 Grade B 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 and API Q1.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2012 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.
- * Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:

Tonya Lam, C.E.T.
Assistant QA Manager