



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-1852

Product Size: 18S100

Production Date: May 22, 2014

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Certificate No.: MTR- 001138

Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



NPS 18 SCH 100 1.156 INCHWT SMLS 2014/05 NDE

HEAT BSM-1852 (PIPE # LENGTH MASS) 208lb/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 $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest	End Condition
BSM-1852	Heat	NPS 18 SCH 100 1.156in. WT	1	DRL	208	<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	0.009	0.009	0.24	0.03	0.11	0.02	0.05		
			Product	0.21	0.85	0.008	0.007	0.24	0.03	0.05	0.01	0.04	0.004	0.002
BSM-1852	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-1852	Heat	Ferrite & Pearlite	74 HRBW	Pass	Longitudinal, 19.05 mm x WT	36,600	68,500	0.53	47

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy					% Shear			Lateral Expansion		
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm
				-	-	-	-	-	-	-	-	-	-	-
BSM-1852														

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 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:

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

T. Lam May-22-2014