



Mill Test Certificate

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

Product Heat Number: BSM-1510

Product Size: 24S60

Production Date: Jan 04, 2014

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Certificate No.: MTR- 000731

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



<API & L/C No.> API SPEC 5L NPS 24 SCH 60 0.969 INCHWT GR B PSL1 SMLS 2014/01 NDE 1900PSI

HEAT BSM-1510 (PIPE # LENGTH MASS) 238.1lb/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 μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1900 PSI/ 5 s	End Condition
BSM-1510	Heat	NPS 24 SCH 60 0.969in. WT	2	DRL	238.1	<5	<10	Pass	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	0.21	0.90	0.002	0.004	0.30	0.05	0.05	0.07	0.02	0.003	0.002
			Product	0.22	0.90	0.017	0.003	0.30	0.05	0.07	0.01	0.03	0.004	0.002
BSM-1510	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		
					Longitudinal; 19.05 mm x WT		72,500		
BSM-1510	Heat	Ferrite & Pearlite	78 HRBW	Pass			49,200		

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion		
				J	J	AVG	%	%	AVG	mm	mm	AVG
BSM-1510	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., 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 12

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