



Mill Test Certificate

Bri-Steel Manufacturing Inc.
2125-64 Avenue, Edmonton, AB Canada T6P 1Z4
Tel: 001 (780) 469-6603
Fax: 001 (780) 469-6986
www.bri-steel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-1821

Product Size: 20S120

Production Date: May 07, 2014

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Certificate No.: MTR- 001101

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 20 SCH 120 1.500 INCHWT SMLS 2014/05 NDE

HEAT BSM-1821 (PIPE # LENGTH MASS) 296.4lb/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-1821	Heat	NPS 20 SCH 120 1.500in. WT	4	DRL	296.4	<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	B	CE(IIW)	CE(CSA)
			Heat	0.20	0.92	0.013	0.005	0.28	0.04	0.06	0.01	0.03	0.001	0.002	0.001	0.0002	-
		Product	0.21	0.90	0.014	0.003	0.29	0.05	0.07	0.01	0.03	0.003	0.002	0.001	0.0003	0.37	0.37
BSM-182.1			Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed														

Mechanical Properties										Yield (Rt0.5) psi			Tensile (Rm) psi			Y/T (Rt0.5/Rm)		Elongation (A) %	
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL					Longitudinal, 19.05 mm x WT			68,500			0.57		48	
BSM-1821	Heat	Ferrite & Pearlite	74 HRBW	Pass															

Heat	Test Standard	Impact Test Sample Details	Temp $^{\circ}C$	Impact Energy						% Shear			Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	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 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.

* Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:

2014 May 21

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