



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.brichemsteel.com

Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1559 Product Size: 20 STD Production Date: Jan 22, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000773
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA333-2011 Grade 6 LT(M45C) A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



NPS 20 STD 0.375 INCHWT SMLS 2014/01 NDE 1760PSI
HEAT BSM-1559 (PIPE # LENGTH MASS) 78.6lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) 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 µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1760PSI/ 5 s	End Condition
BSM-1559	Heat	NPS 20 STD 0.375in. WT	11	DRL	78.6	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	34° 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	0.92	0.014	0.001	0.26	0.07	0.02	0.01	0.03	0.044	-	-		
		Product	0.23	0.97	0.017	0.003	0.30	0.07	0.03	0.01	0.03	0.051	0.002	0.001	0.0005	0.43	0.43
BSM-1559	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-1559	Heat	Ferrite & Pearlite	81 HRBW	Pass	Longitudinal; 38.1 mm x WT	50,500	79,000	0.64	42

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-1559	ASTM A333	CVN Long 10 x 8 mm	-45	106.5	98.5	97.0	100.7	40	35	40	38	2.05	0.00	1.80	1.28

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/SA333-2011 Grade 6 LT(M45C) A/SA106-2011 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.

Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1559

Product Size: 20 STD

Production Date:

Jan 22, 2014

Mill Test Certificate approved by:

Paul Sowden
2014 JAN 24

Paul Sowden, T.T.
Assistant QA Manager