



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-1662

Product Size: 16XS

Production Date: Feb 25, 2014

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Certificate No.: MTR- 000913

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 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 16 XS 0.500 INCHWT GR B/X42 PSL1 SMLS 2014/02 NDE 2240PSI
HEAT BSM-1662 (PIPE # LENGTH MASS) 82.77lb/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	Gelger $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 2240 PSI/ 5 s	End Condition
BSM-1662	Heat	NPS 16 XS 0.500in. WT	10	DRL	82.77	<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	0.87	0.015	0.004	0.25	0.06	0.06	0.01	0.04				0.0002	-
		Product	0.22	0.86	0.013	0.003	0.25	0.06	0.07	0.02	0.04	0.002	0.001	0.001	0.0002	0.39	0.39
BSM-1662	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	V/T (Rt0.5/Rm)	Elongation (A) %				
BSM-1662	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 38.1 mm x WT	44,400	72,500	0.61	43				

Heat	Test	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
BSM-1662	Standard	-	-	J	J	J	AVG	%	%	%	AVG	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 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 Mar 3

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