




Mill Test Certificate

Bri-Steel Manufacturing
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-2442 Product Size: NPS 20 XS Production Date: Jun 19, 2015
Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 001842
Product Standards: ASME B36.10-2004, API 5L-45th Ed. GradeB PS1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
Product Markings
 <API & L/C No.> API SPEC 5L NPS 20 XS 0.500 INCHWT GRB PS1 SMLS 2015/06 NDE 1200PSI
HEAT BSM-2442 (PIPE # LENGTH MASS) 104.1lb/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	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT	UT	ET	HydroTest	End Condition
BSM-2442	Heat	NPS 20 XS 0.500in. WT	16	DRL	104.1	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Steelmaking Method		Chemical Analysis (wt%)												
Heat	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B
BSM-2442	Blast Furnace; EAF; ladle Refining; Vacuum Degass; Fully Killed	Heat	0.16	1.19	0.012	0.001	0.27	0.03	0.02	0.01	0.01	0.051	0.002	0.0005
		Product	0.15	1.22	0.011	0.004	0.29	0.02	0.01	0.01	0.050	0.002	0.001	0.0004
			0.16	1.23	0.011	0.004	0.29	0.03	0.02	0.01	0.050	0.002	0.001	0.0004

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-2442	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 1.5 in. x WT	48,900	71,500	0.68	48

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy					% Shear			Lateral Expansion			
				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 in accordance with API 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2012 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:

 June 23/2015

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