



# 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-2645    Product Size: NPS 20 XS    Production Date: Feb 10, 2016  
 Production Method: Hot Expansion    Product Heat Treatment: As Rolled    Certificate No.: MTR- 002090

Product Standards: ASME B36.10M-2015, API 5L-45th Ed. Grade X42 PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B 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 GR X42 PSL1 SMLS 2016/02 NDE 1890PSI HEAT BSM-2645 (PIPE # LENGTH MASS) 104.1lb/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	Length	Pieces	Mass lb/ft	Geiger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT Pass	ET	HydroTest	End Condition
BSM-2645	Heat	NPS 20 XS 0.500in. WT	DRL	24	104.1	<5	<20	Pass	Pass	Pass	Pass	-	Pass	33° Bevel

Chemical Analysis (wt%)																
Heat	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)
BSM-2645	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	0.17	1.20	0.010	0.002	0.26	0.01	0.01	0.01	0.02	0.050	0.001	0.001	0.0001	0.39	0.38
	Product	0.17	1.14	0.007	0.003	0.27	0.03	0.01	0.01	0.02	0.053	0.002	0.001	0.0002	0.38	0.38
		0.17	1.17	0.011	0.004	0.27	0.03	0.01	0.01	0.02	0.053	0.002	0.001	0.0002	0.39	0.38

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2645	Heat	Ferrite & Pearlite	82 HRBW	Pass	Longitudinal; 1.5 in. x WT	50,000	75,000	0.67	44

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	mm	mm	mm		
BSM-2645	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**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., X42, 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, API Q1, and PED 97/23/EC.

✓ 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:

Feb 12 / 2016

Tonya Lam, P. Tech (Eng.)  
 Assistant QA Manager