



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-2077 Production Date: Oct 02, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001406

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A/SA106-2014 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 20 SCH 100 1.281 INCHWT GR B/X42 PSL1 SMLS 2014/10 NDE 2970PSI
HEAT BSM-2077 (PIPE # LENGTH MASS) 256.1lb/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 2970PSI/ 5 s	End Condition
Heat	Heat	NPS 20 SCH 100 1.281in. WT	1	DRL	256.1	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Plain End
BSM-2077														

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	0.12	1.23	0.013	0.003	0.28	0.05	0.10	0.01	0.03	0.003	0.001	0.001	0.0003	-
		Product	0.12	1.22	0.013	0.005	0.28	0.07	0.11	0.01	0.05	0.005	0.001	0.001	0.0004	0.35	0.35
BSM-2077	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-2077	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 19.05 mm x WT	42,900	71,000	0.60	53

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear			Lateral Expansion				
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2077	ASTM A333	CVN Long 10 x 10 mm	-45	295.0	296.0	290.5	293.8	100	100	100	100	0.00	0.00	0.00	0.00

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/SA333-2013 Grade 6 LT(M45C) A/SA106-2014 Grade B/C A/SA53-2012, 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-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:

T. Lam 04/08/2014

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