



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-2551 Product Size: NPS 24 STD
 Production Date: Oct 14, 2015
 Production Method: Hot Expansion
 Product Heat Treatment: ThermoMechanical Formed
 Certificate No.: MTR- 001975

Product Standards: ASME B36.10-2004, API 5L-45th Ed, GradeB/X42 PSL1, ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type 5, NACE MR0175-2009 MR0103-2012

Product Markings



<API & L/C No.> API SPEC 5L NPS 24 STD 0.375 INCHWT GRB/X42 PSL1 SMLS 2015/10 NDE 1180PSI
 HEAT BSM-2551 (PIPE # LENGTH MASS) 94.62lb/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	Gelger μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT	ASTM E213	ASTM E309	HydroTest	End Condition		
BSM-2551	Heat	NPS 24 STD 0.375in. WT	5	DRL	94.62	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel		

Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)	Degas; Fully Killed														
																		Blast Furnace; EAF; Ladle Refining; Vacuum	Heat	Product												
BSM-2551	Heat	Heat	0.16	1.14	0.005	0.002	0.25	0.01	0.01	0.01	0.01	0.050	0.001	0.001	0.0001	0.37	0.36	0.17	1.14	0.009	0.003	0.28	0.04	0.01	0.01	0.02	0.055	0.002	0.001	0.0002	0.38	0.38

Mechanical Properties

Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2551	Heat	Ferrite & Pearlite	83 HRBW	Pass	Longitudinal; 1.5 in. x WT	53,000	77,000	0.69	40
				Pass	Longitudinal; 1.5 in. x WT	55,000	76,500	0.72	39

Heat	Test	Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion					
					J	J	J	%	%	%	mm	mm	mm			
BSM-2551	Heat	ASTM A333	CVN Long 10 x 7.5 mm	-48	35.0	11.0	30.0	25.3	5	0	5	3	0.73	0.19	0.72	0.55
																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 A/SA333-2013, 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 Type 3.1.

Mill Test Certificate approved by:

Tonya Lam Oct 19/2015

Tonya Lam, C.E.T.

Assistant QA Manager