



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-2473 Product Size: NPS 22 SCH 60 Production Date: Jul 15, 2015
Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 001885
Product Standards: ASME B36.10-2004, 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



NPS 22 SCH 60 0.875 INCHWT SMLS 2015/07 NDE 1900PSI
HEAT BSM-2473 (PIPE # LENGTH MASS) 197.4lb/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	Geliger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1900PSI/ 5 s	End Condition				
BSM-2473	Heat	NPS 22 SCH 60 0.875in. WT	6	DRL	197.4	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End				
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	0.16	1.16	0.014	0.001	0.29	0.03	0.01	0.01	0.01	0.047	-	-	-	0.37	0.37
			Product	0.15	1.20	0.013	0.003	0.29	0.03	0.01	0.01	0.01	0.052	0.002	0.001	0.0004	0.37	0.36
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BSM-2473	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed																	

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-2473	Heat	Ferrite & Pearlite	76 HRBW	Pass	Longitudinal; 0.5 in. Round Bar	50,000	75,000	0.67	40

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy						% Shear						Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	mm	mm	mm	mm	AVG
BSM-2473	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with 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:

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

T. Lam *July 12/1/2015*