




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-2021 Product Size: 24S60 Production Date: Sep 17, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001354
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2013 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010
Product Markings
 <API & L/C No. > API SPEC 5L NPS 24 SCH 60 0.969 INCH WT GR B PSL1 SMLS 2014/09 NDE 1900PSI
HEAT BSM-2021 (PIPE # LENGTH MASS) 238.1lb/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	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1900PSI/ 5 s	End Condition
Heat	Heat	NPS 24 SCH 60 0.969in. WT	3	DRL	238.1	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Plain End
BSM-2021														

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IW)	CE(CSA)
BSM-2021	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.20	0.88	0.011	0.005	0.23	0.04	0.06	0.01	0.03				0.0003	-	-
		Product	0.20	0.85	0.011	0.005	0.23	0.04	0.06	0.01	0.03	0.003	0.001	0.001	0.0002	0.36	0.36

Mechanical Properties										Elongation (A)		
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T				
BSM-2021	Heat	Ferrite & Pearlite	75 HRBW	Pass	50mm GL	psi	psi	(Rt0.5/Rm)				
					Longitudinal, 19.05 mm x WT	40,300	69,000	0.58				

Heat	Test	Impact Test	Temp	Impact Energy				% Shear				Lateral Expansion			
	Standard	Sample Details	°C	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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/SA106-2013 Grade B 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:

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

Tony Lam *Sept 18/23/2014*