



# 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-2209      Product Size: 24T40      Production Date: Jan 07, 2015  
Production Method: Hot Expansion      Product Heat Treatment: As-rolled      Certificate No.: MTR- 001533  
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 24 TRUE 40 0.688 INCHWT SMLS 2015/01 NDE 1400PSI  
HEAT BSM-2209 (PIPE # LENGTH MASS) 171.2lb/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	Geiger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1400PSI/ 5 s	End Condition
BSM-2209	Heat	NPS 24 TRUE 40 0.688in. WT	4	DRL	171.2	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)
BSM-2209 Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Test Type	Heat	0.20	0.95	0.016	0.005	0.30	0.06	0.07	0.01	0.03	0.004	0.003	0.001	0.0002	-
	Product	Product	0.21	0.95	0.016	0.006	0.30	0.05	0.07	0.01	0.02	0.004	0.003	0.001	0.0003	0.39

Mechanical Properties										Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL								
BSM-2209	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 25.4 mm x WT								

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A106-2014/SA106-2013 Grade B/C 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-2009 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:


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

*Tanya Lam* Jan. 13. 2015



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Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001533  
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, AS3-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012  
Product Markings  <API & L/C No.> API SPEC 5L NPS 24 TRUE 40 0.688 INCHWT GR B PSL1 SMLS 2015/01 NDE 1400PSI  
HEAT BSM-2209 (PIPE # LENGTH MASS) 171.2lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

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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 1400 PSI/ 5 s	End Condition
BSM-2209	Heat	NPS 24 TRUE 40 0.688in. WT	4	DRL	171.2	<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)
BSM-2209	Blast Furnace; LAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.20	0.95	0.016	0.005	0.30	0.06	0.07	0.01	0.03	0.004	0.003	0.001	0.0002	-	-
		Product	0.21	0.95	0.016	0.006	0.30	0.05	0.07	0.01	0.02	0.004	0.003	0.001	0.0003	0.39	0.39

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-2209	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 25.4 mm x WT	50,500	73,000	0.69	45

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Mill Test Certificate approved by:

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

*Tonya Lam* Jan. 13. 2015