



# 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.briharnsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0662** Product Size: **NPS 24 XS** Production Date: **January 21, 2013**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASME B36.10-2004, API SL-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> SL-0898 API SL GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 XS HEAT BSM-0662 (PIPE # LENGTH MASS) 125.5lb/ft NDE 970 PSI SMLS NACE MR0175 2013/01 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass	Gelger	Res. Mag.	Visual Insp.	OD	UT	UT	ET	HydroTest	End Condition
BSM-0662	Heat	24	XS	40	DRL	125.50	µR/hr	Gauss	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel

		Chemical Analysis (wt%)														
Heat	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0662	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	0.19	0.91	0.010	0.010	0.22	0.03	0.07	0.01	0.05	-	-	-	0.0003	-	-
	Product	0.19	0.91	0.015	0.012	0.21	0.03	0.07	0.01	0.03	0.003	0.001	0.001	0.0002	0.36	0.36

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.2) psi	Yield (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Pass				
BSM-0662	Heat	Ferrite & Pearlite	76	Pass	Transverse; 38.1mm x WT	Longitudinal; 38.1mm x WT	47,600	49,400	0.63	44
							48,100	47,700	0.64	45

**Additional Details:**

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 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:

*Kenton Dechant*  
 2013 Apr 17  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D



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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0662** Product Size: **NPS 24 STD** Production Date: **January 21, 2013**

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Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger uR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 970 psi/5s	End Condition
BSM-0662	Heat	24	STD	40	DRL	125.50	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel

Steelmaking Method		Chemical Analysis (wt%)														
Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIV)	CE (CSA)
BSM-0662		0.19	0.91	0.010	0.010	0.22	0.03	0.07	0.01	0.05	-	-	-	0.0003	-	-
		Product	0.19	0.91	0.015	0.012	0.21	0.03	0.07	0.01	0.03	0.003	0.001	0.001	0.0002	0.36

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (R0.5/Rm)	Elongation (A) %
					50mm GL	38.1mm x WT					
BSM-0662	Heat	Ferrite & Pearlite	76	Pass	Transverse: 38.1mm x WT	Longitudinal: 38.1mm x WT	48,100	47,700	76,000	0.63	44

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*[Signature]*  
 2013 Jan 29

Kenton Dechant, P.Eng.  
 Manager of Quality and R&D