



Bri-Steel Manufacturing Inc.
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4
 Tel: 001 (780) 469-6603
 Fax: 001 (780) 469-6986
 www.brichemsteel.com

Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0658** Product Size: **NPS 24 XS** Production Date: **January 15, 2013**

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

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 XS HEAT BSM-0658 (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	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition
BSM-0658	Heat	24	XS	38	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 Degas; Fully Killed	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
		Heat	0.19	0.91	0.003	0.010	0.22	0.04	0.08	0.01	0.04	-	-	-	0.0004	-	-
Product			0.19	0.89	0.009	0.013	0.23	0.03	0.09	0.02	0.04	0.003	0.001	0.001	0.0003	0.36	0.36

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rp0.2)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
					HRBW	Pass					
BSM-0658	Heat	Ferrite & Pearlite	79	Pass	Transverse: 38.1mm x WT	50,000	55,500	45,100	75,000	0.74	44
					Longitudinal: 38.1mm x WT	50,000	50,000	50,000	75,000	0.67	41

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-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:

2013 Jan 29

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



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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0658** Product Size: **NPS 24 STD** Production Date: **January 15, 2013**

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

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SAS3-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SAS3 GR B NPS 24 STD HEAT BSM-0658 (PIPE # LENGTH MASS) 125.5lb/ft NDE 970 PSI SMIS NACE MR0175 2013/01 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 970 psi/5s	End Condition
BSM-0658	Heat	24	STD	2	DRL	125.50	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-0658	Blast Furnace: EAF; Ladle Refining: Vacuum Degas; Fully Killed	Heat	0.19	0.91	0.003	0.010	0.22	0.04	0.08	0.01	0.04	-	-	-	0.0004	-	-
		Product	0.19	0.89	0.009	0.013	0.23	0.03	0.09	0.02	0.04	0.003	0.001	0.001	0.0003	0.36	0.36

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Transverse: 38.1mm x WT					
BSM-0658	Heat	Ferrite & Pearlite	79	Pass	Longitudinal: 38.1mm x WT	50,000	50,000	75,000	0.67	41	

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