



# 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.brichemsteel.com

Product: **Seamless Carbon Steel Pipe**      Product Heat Number: **BSM-0440**      Product Size: **NPS 16 STD**      Production Date: **August 8, 2012**

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

Product Standards: **API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**


Product Markings: **.BRI-STEEL MFG-44P-SL-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 16 STD HEAT BSM-0440 (PIPE # LENGTH MA55) 62.5R16/NDE 1330PSI SMLS NACE MR0175 2012/08 MADE IN CANADA.**

Product Details				Non-Destructive Testing												
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	UT	UT	ET	HydroTest	End Condition		
BSM-0440	Heat	16	STD	47	DRL	62.58	µR/hr	Gauss	Insp.	OD	WT	ASTM E213	ASTM E309	1330 psi/5s	Pass	37.5° Bevel

Chemical Analysis (wt%)																		
Heat	BSM-0440	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
				Heat	0.19	0.87	0.015	0.006	0.24	0.05	0.08	0.01	0.04	-	-	-	0.0005	-
		Vacuum Degas; Fully Killed	Product	0.19	0.84	0.016	0.007	0.22	0.04	0.07	0.01	0.03	0.001	0.001	0.001	0.0002	0.35	0.35

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	V/T	Elongation (A)
					HRBW	Pass					
BSM-0440	Heat	Ferrite & Pearlite	76	Pass	Transverse: 38.1mm x WT	Longitudinal: 38.1mm x WT	51,500	51,000	70,500	0.73	34

- 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 meet 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 no mercury contamination.
  - ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:  
  
 2013 Apr 12  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D

# 313 (STD)  
 # 315 (XS)



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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0440** Product Size: **NPS 16 XS** Production Date: **August 8, 2012**

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

Product Standards: **API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG -API 5L-GR B PSL1 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 16 XS HEAT BSM-0440 (PIPE # LENGTH MASS) 82.77lb/ft NDE 1330PSI SM15 NACE MR0175 2012/08 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	Hydro Test	End Condition
BSM-0440	Heat	16	X5	47	DRL	82.77	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5" Bevel

Chemical Analysis (wt%)																
Heat	BSM-0440	Steelmaking Method	Analysis									CE	CE			
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	(IIW)
Blast Furnace; EAF; Ladle Refining:		Heat	0.19	0.87	0.015	0.006	0.24	0.05	0.08	0.01	0.04	-	-	-	0.0005	-
Vacuum Degass; Fully Killed		Product	0.19	0.84	0.016	0.007	0.22	0.04	0.07	0.01	0.03	0.001	0.001	0.001	0.0002	0.35

Mechanical Properties												
Heat	BSM-0440	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rp0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
						HRBW	Pass					
		Heat	Ferrite & Pearlite	76	Pass	Transverse: 38.1mm x WT	41,300	51,500	51,000	70,500	0.73	34
						Longitudinal: 38.1mm x WT	41,300	41,300	73,000	0.57	42	

- 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.
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  - ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

*Kenton Dechant*  
 2012 Aug 20  
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 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D