



**Bri-Steel Manufacturing Inc.**  
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# Mill Test Certificate

Product: **Seamless Carbon Steel Pipe**      Product Heat Number: **BSM-0494**      Product Size: **NPS 24 XS**      Production Date: **October 11, 2012**

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 NDE, A/SA53-2012 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 A/SA53 GR B NPS 24 XS HEAT BSM-0494 (PIPE # LENGTH MASS) 125.5lb/ft NDE 890PSI SMLS NACE MR0175 2012/10 MADE IN CANADA.**

Product Details				Non-Destructive Testing												
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger $\mu$ R/hr	Res.Mag. Gauss	Visual Insp.	OD	Pass*	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 890 psi/5s	End Condition
BSM-0494	Heat	24	XS	28	DRL	125.50	<5	<20	Pass	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	CE (IIW)	CE (CSA)
BSM-0494	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat Product	0.20 0.22	0.84 0.85	0.008 0.008	0.005 0.006	0.24 0.23	0.06 0.06	0.09 0.11	0.01 0.01	0.07 0.07	- 0.002	- 0.001	- 0.001	0.0003 0.0001	- 0.39

## Mechanical Properties

Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test 50mm GL		Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					Transverse; 38.1mm x WT	Longitudinal; 38.1mm x WT				
BSM-0494	Heat	Ferrite & Pearlite	76	Pass	42,400	43,500	41,600	69,000	0.61	47
							43,200	66,000	0.66	51

### 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:

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

\* OD Tolerances as per API 5L.