



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

Product: **Seamless Carbon Steel Pipe**      Product Heat Number: **BSM-0400**      Product Size: **NPS 20 TRUE80**      Production Date: **July 5, 2012**  
 Production Method: **Hot Expansion**      Product Heat Treatment: **Q&T then Hot Worked**  
 Product Standards: **API 5L-44th Ed. Grade X52/X56 PSL1**  
 Product Markings: **.BRI-STEEL MFG NPS 20 TRUE80 <API> 5L GR X52/X56 PSL1 HEAT BSM-0400 (PIPE # LENGTH MASS) 208.9lb/ft NDE 2970PSI SMLS 2012/07 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	SCH	Pieces	Length	Mass lb/ft	Geiger $\mu$ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 2970 psi/5s	End Condition
BSM-0400	Heat	20	TRUE80	5	DRL	208.90	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																	
Heat	Test Type	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE (IIW)	CE (CSA)	
BSM-0400	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degass	0.14	1.53	0.015	0.006	0.36	0.24	0.10	0.23	0.17	0.084	0.002	0.017	0.0002	0.52	0.48

Mechanical Properties								
Heat	Test Type	Microstructure	Hardness HRC	Flattening Test	Tension Test			Elongation (A) %
					50mm GL; 19.1mm x WT	Yield (Rp0.5) psi	Tensile (Rm) psi	
BSM-0400	Heat	Tempered Martensite	23	Pass	Transverse	74,500	132,000	0.56
					Longitudinal	61,500	120,000	0.51

**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. and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ 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:

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