



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0248** Product Size: **NPS 20 TRUE80** Production Date: **March 7, 2012**

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

Product Standards: **ASTM/ASME A/SA106-2011 Grade B, A/SA53-2010 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 20 TRUE80 ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0248 (PIPE # LENGTH MASS) NDE NH 1000PSI NACE MR0175 2012/03 MADE IN CANAC**

Product Details						Non-Destructive Testing									
Heat	Test Type	NPS	SCH	Pieces	Length	Mass lb/ft	Gelger μR/hr	Res. Mag. Gauss	Visual Insp.	OD Pass	UT WT Pass	UT ASTM E213	ET ASTM E309	HydroTest 1000 psi/5s	End Condition
BSM-0248	Heat	20	TRUE80	5	DRL	208.90	<5	<20	Pass	Pass	Pass	---	Pass	*	37.5° Bevel

		Chemical Analysis (wt%)														
Heat	Test Type	Steelmaking Method														
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass														
BSM-0248	Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
		0.19	0.84	0.009	0.008	0.22	0.05	0.07	0.01	0.03	0.003	0.001	0.001	0.0001	0.35	0.35

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 (Rp0.5/Rm)	Elongation (A) %
					Ferrite & Pearlite	73					
BSM-0248	Heat						45,700	43,400	69,500	0.66	53
							39,100	39,100	69,000	0.57	56

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2011, A/SA53-2010 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.
- \* The Hydrotest was performed at a test pressure lower than recommended by ASTM/ASME A/SA106 and A/SA53

Mill Test Certificate approved by:

  
 2012 Mar 21

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