



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0692** Product Size: **NPS 24 SCH 100** Production Date: **February 7, 2013**

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

Product Standards: **ASME B36.10-2004, 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 ASTM/ASME A/SA106 GR B/C A/SAS3 GR B NPS 24 SCH 100 HEAT BSM-0692 (PIPE # LENGTH MASS) 367.4lb/ft NDE SMIS NACE MR0175 2013/02 MADE IN CANADA.**


Product Details				Non-Destructive Testing										
Heat	Test Type	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT	ET	HydroTest	End Condition
BSM-0692	Heat	24 SCH 100	2	DRL	367.40	<5	<20	Pass	Pass	Pass	Pass	Pass	*	Plain End

Heat		Chemical Analysis (wt%)														
BSM-0692	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
	Blast Furnace; EAF; ladle refining; Vacuum Degass; Fully Killed	0.20	0.88	0.015	0.004	0.32	0.04	0.05	0.02	0.02	0.004	0.003	0.001	0.0002	-	-
		0.20	0.92	0.015	0.005	0.28	0.04	0.05	0.01	0.03	0.003	0.002	0.001	0.0002	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Tension Test		Yield (Rp0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
				50mm GL	19.1mm x WT					
BSM-0692	Heat	Ferrite & Pearlite	77	Pass	Transverse; 19.1mm x WT	53,000	51,500	74,000	0.72	39
				Pass	Longitudinal; 19.1mm x WT	46,900	47,600	73,000	0.64	45

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/SAS3-2012 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