



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0693** 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/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 SCH 100 HEAT BSM-0693 (PIPE # LENGTH MASS) 367.4lb/ft NDE SMIS NACE MR0175 2013/02 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	HydroTest	End Condition
BSM-0693	Heat	24	SCH 100	6	DRL	367.40	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	*	Plain End

		Chemical Analysis (wt%)																
Heat	Steelmaking Method	Analysis		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0693	Blast Furnace; FAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	Product	0.19	0.88	0.014	0.002	0.34	0.06	0.05	0.01	0.03	0.004	0.003	0.001	0.0002	-	-
				0.20	0.92	0.014	0.004	0.29	0.05	0.05	0.01	0.03	0.003	0.003	0.001	0.0003	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
				HRBW	Flattening Test					
BSM-0693	Heat	Ferrite & Pearlite	75	Pass	Transverse; 38.1mm x WT	45,600	49,100	73,500	0.69	40
					Longitudinal; 38.1mm x WT	45,600	45,400	72,000	0.63	52

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/SA53-2012 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.
- *Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:


 2013 Feb 15

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