



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0646** Product Size: **NPS 24 SCH 60** Production Date: **January 10, 2013**

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

Product Standards: **ASME B36.10-2004, 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 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 24 SCH 60 HEAT BSM-0646 (PIPE # LENGTH MASS) 238.1lb/ft NDE SMIS NACE MR0175 2013/01 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT	UT	ET	HydroTest	End Condition
BSM-0646	Heat	24	SCH 60	1	DRL	238.10	<5	<20	Pass	Pass	Pass	Pass	Pass		Plain End


Chemical Analysis (wt%)																			
Heat	BSM-0646	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)	
				Heat	0.13	0.98	0.016	0.002	0.26	0.06	0.06	0.01	0.02	0.004	0.002	0.001	0.0001	-	-
				Vacuum Degass; Fully Killed	Product	0.16	1.07	0.025	0.004	0.31	0.04	0.06	0.03	0.03	0.006	0.003	0.001	0.0002	0.36

Mechanical Properties														
Heat	BSM-0646	Test Type	Heat	Microstructure	Ferrite & Pearlite	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
								50mm GL	Pass					

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.

Mill Test Certificate approved by:


 2013 Jan 30
 Kenton Dechant, P. Eng.
 Manager of Quality and R&D