



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0412** Product Size: **NPS 24 SCH 60** Production Date: **July 12, 2012**

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

Product Standards: **ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 24 SCH 60 ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0412 (PIPE # LENGTH MASS) 238.1lb/ft NDE 1000PSI NACE MR0175 2012/07 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 WT	UT	ET	HydroTest	End Condition
BSM-0412	Heat	24	SCH 60	2	DRL	238.10	<5	<20	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	B	CE (IIV)	CE (CSA)
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass	0.16	0.98	0.015	0.002	0.28	0.06	0.06	0.01	0.02	0.004	0.002	0.001	0.0001	0.34	0.34	
BSM-0412	Heat																	

Mechanical Properties																			
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %								
					Ferrite & Pearlite	73						Pass	50mm GL; 38mm x WT	Transverse	Longitudinal	41,700	36,700	69,500	0.60
BSM-0412	Heat																		

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 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.

Mill Test Certificate approved by:


 2012 July 26
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D