



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0965** Product Size: **NPS 24 TRUE80** Production Date: **June 4, 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 TRUE80 1.219 inchWT HEAT BSM-0965 (PIPE # LENGTH MASS) 296.4lb/ft NDE SMIS NACE MR0175 2013/06 MADE IN CANADA.**


Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End	
BSM-0965	Heat	NPS 24 TRUE80 1.219 in.WT	3	DRL	lb/ft 296.40	µR/hr <5	Gauss <20	Insp. Pass	Pass	Pass	Pass	Pass	Pass	Platn End	

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0965	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.21	0.92	0.012	0.004	0.28	0.04	0.09	0.01	0.03	0.003	0.001	0.001	0.0003	-	-
		Product	0.23	0.90	0.010	0.004	0.31	0.04	0.09	0.01	0.04	0.004	0.002	0.001	0.0001	0.40	0.41

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)				
BSM-0965	Heat	Ferrite & Pearlite	HRBW 78	Pass	50mm GL Longitudinal; 19.1mm x WT	psi 51,000	psi 72,000	(Rt0.5/Rm) 0.71	% 46				
Heat	Test Standard	Impact Test	Temp	Impact Energy	% Shear	Lateral Expansion	Elongation (A)						
BSM-0965	-	Sample Details	9C	J	%	mm	%	mm	AVG				
			-	-	-	-	-	-	-				

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:

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

*Note that this product was hydrotested to 1000 psi for 5 seconds.