



Bri-Steel Manufacturing Inc.
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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-1024** Product Size: **NPS 24 STD** Production Date: **June 27, 2013**

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

Product Standards: **ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SAA106-2011 Grade B NDE, A/SAS3-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SAA106 GR B A/SAS3 GR B NPS 24 STD 0.375 inchWT HEAT BSM-1024 (PIPE # LENGTH MASS) 94.62lb/ft NDE 750 PSI SMILS 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	Hydro Test	End
BSM-1024	Heat	NPS 24 STD 0.375 in. WT	10	DRL	94.62	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
			Heat	0.19	0.91	0.016	0.006	0.22	0.04	0.07	0.03	0.03	-	-	-	0.0005	-
BSM-1024	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Product	0.21	0.88	0.018	0.006	0.22	0.04	0.07	0.03	0.03	0.005	0.001	0.001	0.0003	0.37	0.38

Mechanical Properties														
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)	Impact Test			
					HRBW	Pass					50mm GL	Longitudinal; 38.1mm x WT	Temp	Impact Energy
BSM-1024	Heat	Ferrite & Pearlite	75	Pass	-	-	43,000	66,500	0.65	44	Temp	Impact Energy	% Shear	Lateral Expansion
BSM-1024	Test Standard	-	-	-	Temp	Impact Energy	% Shear	Lateral Expansion	AVG	AVG	mm	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 API 5L-44th Ed., ASTM/ASME A/SAA106-2011, 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:

2013 JUL 03

Paul Sowden, T.T.
 Assistant QA Manager