



Bri-Steel Manufacturing Inc.
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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0920** Product Size: **NPS 24 XS** Production Date: **May 21, 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/SA106-2011 Grade B NDE, A/SA53-2012 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/SA106 GR B A/SA53 GR B NPS 24 XS 0.5 inchWT HEAT BSM-0920 (PIPE # LENGTH MASS) 125.5lb/ft NDE 970 PSI SMLS NACE MR0175 2013/05 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT Pass	ET ASTM E309	HydroTest 970 psi/5s	End Condition
BSM-0920	Heat	NPS 24 XS 0.5 in. WT	11	DRL	125.50	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)

Heat	Steelmaking Method	Analysis Heat	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE (IIW)	CE (CSA)
BSM-0920	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Product	0.19	0.86	0.015	0.011	0.24	0.05	0.06	0.02	0.03	0.002	0.001	0.001	0.0001	0.35
		Heat	0.18	0.87	0.011	0.008	0.24	0.05	0.06	0.02	0.04	-	-	-	0.0003	-

Mechanical Properties

Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %						
					50mm GL	Longitudinal; 38.1mm x WT										
BSM-0920	Heat	Ferrite & Pearlite	73	Pass	Pass	42,300	67,500	0.63	47							
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion						
				J	J	J	%	%	%	mm	mm	mm	AVG			
BSM-0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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/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:

Paul Sowden
 2013 MAY 28

Paul Sowden, T.T.
 Assistant QA Manager

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