



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0724** Product Size: **NPS 20 XS** Production Date: **February 20, 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/SAS106-2011 Grade B/C 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/SAS106 GR B/C A/SAS3 GR B NPS 20 XS 0.5 inchWT HEAT BSM-0724 (PIPE # LENGTH MASS) 104.1lb/ft NDE 1260 PSI SMIS NACE MR0175 2013/02 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0724	Heat	NPS 20 XS 0.5 in. WT	9	DRL	104.10	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel


Chemical Analysis (wt%)																			
Heat	BSM-0724	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE	
				Heat	0.19	0.85	0.009	0.015	0.28	0.05	0.11	0.01	0.07	-	-	-	0.0003	-	-
				Vacuum Degassed, Fully Killed	Product	0.21	0.85	0.011	0.014	0.27	0.02	0.10	0.01	0.06	0.002	0.001	0.001	0.0003	0.37

Mechanical Properties																
Heat	BSM-0724	Test Type	Heat	Microstructure	Ferrite & Pearlite	Hardness	HRBW	Flattening Test	Pass	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
										50mm GL	Transverse: 38.1mm x WT					
						77				Longitudinal: 38.1mm x WT	42,600	45,300	71,500	0.60	43	41

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/SAS106-2011, 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 Feb 28
 Kenton Dechant, P. Eng.
 Manager of Quality and R&D