



Bri-Steel Manufacturing Inc.
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Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0605** Product Size: **NPS 20 TRUE40** Production Date: **December 11, 2012**

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/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/SA106 GR B/C A/SAS3 GR B NPS 20 TRUE40 HEAT BSM-0605 (PIPE # LENGTH MASS) 122.9lb/ft NDE 1370 PSI SWLS NACE MR0175 2012/12 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	WT	UT	UT	ET	HydroTest	End Condition
BSM-0605	Heat	20	TRUE40	25	DRL	122.90	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	Element														
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
			Heat	Heat	Product	Heat	Heat	Product	Heat	Heat	Product	Heat	Heat	Product	Heat	Heat	Product
BSM-0605	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.21	0.91	0.014	0.012	0.26	0.05	0.10	0.01	0.07	-	-	-	0.0003	-	-
		Product	0.20	0.89	0.014	0.014	0.25	0.05	0.10	0.01	0.06	0.002	0.001	0.001	0.0002	0.37	0.38

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Transverse; 38.1mm x WT					
BSM-0605	Heat	Ferrite & Pearlite	74	Pass	Longitudinal; 38.1mm x WT	42,700	42,500	73,500	0.69	44	

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/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.

Mill Test Certificate approved by:

 2012 Dec 19
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D