



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0989** Product Size: **NPS 30 XS** Production Date: **June 12, 2013**

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

Product Standards: **ASME B36.10-2004, API SL-44th Ed. Grade B PSL1, 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 <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 30 XS 0.5 inchWT HEAT BSM-0989 (PIPE # LENGTH MASS) 157.5lb/ft NDE 800 PSI SMLS 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*	WT	UT	UT	ET	HydroTest	End
BSM-0989	Heat	NPS 30 XS 0.5 in. WT	1	DRL	157.50	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	800 psi/5s	Condition
						<5	<20	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
BSM-0989	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.18	0.89	0.017	0.009	0.24	0.03	0.08	0.02	0.04	-	-	-	-	0.0005	-
		Product	0.19	0.85	0.013	0.007	0.23	0.06	0.06	0.02	0.03	0.002	0.001	0.001	0.0002	0.35	0.36

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Y/T	Elongation (A)	Lateral Expansion			
BSM-0989	Heat	Ferrite & Pearlite	HRBW	77	Pass	50mm GL	psi	psi	(Rt0.5/Rm)	mm			
						Longitudinal; 38.1mm x WT				45,300	70,000	0.65	48
Heat	Test	Impact Test	Temp	Impact Energy	% Shear	mm			mm				
BSM-0989	Standard	Sample Details	°C	J	J	J	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/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.

*OD tolerances as per API

Mill Test Certificate approved by: *Paul Sowden* 2013 JUN 18
 Paul Sowden, T.T. Assistant QA Manager