



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0761** Product Size: **NPS 18 STD** Production Date: **March 7, 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/SAI106-2011 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 18 STD 0.375 INCH WT HEAT BSM-0761 (PIPE # LENGTH MASS) 70.59LB/FT NDE 1030 PSI SM15 NACE MR0175 2013/03 MADE IN CANADA.**

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0761	Heat	NPS 18 STD 0.375 in. WT	3	DRL	70.59	µR/hr	Gauss	Insp.	Pass	Pass	ASTM E213	ASTM E309	1030 psi/5s	Condition
						<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	37.5° Bevel

Heat		Chemical Analysis (wt%)														
BSM-0761	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
	Blast Furnace; EAF; Ladle Refining;	0.20	0.90	0.008	0.006	0.25	0.03	0.11	0.01	0.05	-	-	-	0.0004	-	-
	Vacuum Degass; Fully Killed	0.21	0.93	0.008	0.005	0.23	0.04	0.09	0.02	0.04	0.003	0.002	0.001	0.0002	0.39	0.39

Heat		Mechanical Properties									
BSM-0761	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5)	Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL	psi	psi	psi	psi	(Rt0.5/Rm)	%
			79		Transverse: 38.1mm x WT	45,400	42,700	73,000	0.62		42
					Longitudinal: 38.1mm x WT	46,000	44,800	71,500	0.64		40

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:

[Signature]
 2013 Mar 13

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