



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0560** Product Size: **NPS 30 STD** Production Date: **November 14, 2012**

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

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SAIL06-2011 Grade B NDE, A/SAS3-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010**

Product Markings: **BRI-STEEL MFG ASTM/ASME A/SAIL06 GR B A/SAS3 GR B NPS 30 STD HEAT BSM-0560 (PIPE # LENGTH MASS) 118.6lb/ft NDE 530PSI SMLS NACE MR0175 2012/11 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	Wall Thickness	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End Condition
BSM-0560	Heat	30	STD	32	DRL	118.60	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	Pass	37.5" Bevel

Chemical Analysis (wt%)																
Heat	Steelmaking Method	Analysis														
BSM-0560	Blast Furnace: EAF; Ladle Refining: Vacuum Degas: Fully Killed	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
		0.19	0.89	0.010	0.004	0.21	0.03	0.07	0.01	0.04	-	-	-	0.0001	-	-
		0.20	0.89	0.010	0.016	0.21	0.03	0.08	0.01	0.03	0.003	0.001	0.001	0.0002	0.36	0.37

Mechanical Properties											
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rp0.5) psi	Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Transverse: 38.1mm x WT					
BSM-0560	Heat	Ferrite & Pearlite	76	Pass	Longitudinal: 38.1mm x WT		42,900	41,100	72,500	0.59	42
							45,100	45,000	72,500	0.62	43

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SAIL06-2011, 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:

Kenton Dechant
 2012 Nov 21

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