



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0689** Product Size: **NPS 24 SCH 120** Production Date: **January 6, 2013**

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

Product Standards: **ASME B36.10-2004, 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 ASTM/ASME A/SA106 GR B/C A/SAS3 GR B NPS 24 SCH 120 HEAT BSM-0689 (PIPE # LENGTH MASS) 429.4lb/ft NDE SMIS NACE MR0175 2013/01 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-0689	Heat	24	SCH 120	3	DRL	429.40	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass		*
							<5	<20	Pass	Pass	Pass	Pass	Pass		Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-0689	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.20	0.99	0.017	0.002	0.35	0.04	0.05	0.01	0.02	0.004	0.002	0.001	0.0001	-	-
		Product	0.21	0.96	0.017	0.005	0.29	0.04	0.05	0.01	0.03	0.004	0.002	0.001	0.0003	0.39	0.40

Mechanical Properties												
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test					Yield (R _m)	Y/T	Elongation (A)
					HRBW	Pass	50mm GL	Yield (R _{t0.5})	Yield (R _{p0.2})			
BSM-0689	Heat	Ferrite & Pearlite	77	Pass	Transverse; 19.1mm x WT	51,000	51,000	50,500	74,500	0.68	41	46
					Longitudinal; 19.1mm x WT	51,000	50,500	74,500	0.68	46		

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/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.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

 2013 Feb 15
 Kenton Dechant, P.Eng.
 Manager of Quality and R&D