



# Mill Test Certificate

**Bri-Steel Manufacturing Inc.**  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.brichemsteel.com

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0575** Product Size: **NPS 16 STD** Production Date: **November 26, 2012**

Production Method: **Hot Expansion** Product Heat Treatment: **Austenitized (940°C 10min), Quenched, Tempered (720°C 45min), Air Cooled, Hot Finished (800°C 20min), Air Cooled**

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SA335-2010a Grade P11 NDE 850 PSI, NACE MR0175-2009, MR0103-2010**

Product Markings: **.BRI-STEEL MFG ASTM/ASME A/SA335 GR P11 NPS 16 STD HEAT BSM-0575 (PIPE 001 LENGTH MASS) 62.58lb/ft NDE 850 PSI SM1S NACE MR0175 2012/11 MADE IN CANADA.**

Product Details				Non-Destructive Testing																
Heat	Test Type	NPS	Wall Thickness	STD	Pieces	Length	DRL	Mass lb/ft	Gelger	Res. Mag.	Visual Insp.	OD	WT	UT*	UT*	ET*	ET*	HydroTest	End Condition	
BSM-0575	Heat	16	STD		1	DRL		62.58	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel


Heat		Steelmaking Method	Chemical Analysis (wt%)																		
BSM-0575	Blast Furnace, Basic Oxygen Steelmaking; Fully Killed	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B						
		Heat	0.10	0.44	0.011	0.002	0.53	1.11	-	0.46	0.07	-	-	-	-	-					
		Product	0.10	0.43	0.013	0.002	0.54	1.07	0.04	0.44	0.07	0.002	0.002	0.001	-	-					

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-0575	Heat	Ferrite & Pearlite	74	Pass	Longitudinal: 38.1mm x WT		45,600	45,300	66,500	0.69	47

**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/SA335-2010a 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.
- \* NDT methods calibrated with drilled holes and longitudinal OD N12.5 notches.

Mill Test Certificate approved by:

  
 2013 July 22  
 Kenton Dechant, P.Eng.  
 Manager of Quality and R&D