



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 Alloy Steel Pipe** Product Heat Number: **BSM-2661** Product Size: **NPS 22 STD** Production Date: **2016 March 1**
 Production Method: **Hot Finished** Product Heat Treatment: **Normalized (920°C) and Tempered (700°C)** MTR Certificate No. **2104**
 Product Standards: **ASME B36.10M-2015, ASTM A335-2015a/ASME SA335-2015 GR P11**


Product Markings: **BRI-STEEL MFG NPS 22 STD 0.375 INCHWT SMLS 2016/02 NDE(UT) 600PSI**
HEAT BSM-2661 (PIPE# LENGTH MASS) 86.61lb/ft ASTM A335/ASME SA335 GR. P11 MADE IN CANADA.

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size*	Pieces	Length	Mass lb/ft	Gelger $\mu R/hr$	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 600 psi/5s	End Condition
BSM-2661	Heat	NPS 22 STD 0.375 in WT	3	*	86.61	<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 (IIV)	CE (CSA)
BSM-2661	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.12	0.41	0.011	0.004	0.67	1.06	-	0.51	-	-	-	-	-	0.50	0.43
		Product	0.11	0.42	0.010	0.004	0.71	1.06	0.02	0.51	0.01	0.003	0.001	0.002	0.0003	0.50	0.40

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Longitudinal; 38.1mm x WT				
BSM-2661	Heat	Ferrite (80%) Bainite (10%) Pearlite (10%)	76	Pass			46,200	68,500	0.67	44

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM A335-2015a/ASME SA335-2015, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO 9001:2008, API Q1 and PED 97/23/EC.
 ✓ 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.
 ✓ No weld repairs have been performed on this product.
 * Custom lengths supplied: 2 pc of 11 ft 3 in, 1 pc of 1 ft 0 in.

Mill Test Certificate approved by:

 2016 Mar 17
 Kenton Dechant, P. Eng.
 Manager of Quality and R&D