



Mill Test Certificate

Bri-Steel Manufacturing
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Product: **Seamless Alloy Steel Pipe** Product Heat Number: **BSM-3077** Product Size: **NPS 34 X 1.681** Production Date: **March 3, 2017**
 Production Method: **Hot Expansion** Product Heat Treatment: **Full Annealed (920°C)** Certificate No: **MTR: 003237**
 Product Standards: **ASME B36.10M-2015, ASTM A335-2015a/ASME SA335-2015 GRADE P22**

Product Markings: **BRI-STEEL MFG ASTM/ASME A/SA335 GR P22 NPS 34 X 1.681 INCHWT (1.471 MW) SMLS**
HEAT BSM-3077 (PIPE # LENGTH MASS) 580.2 LB/FT NDE(UT) 1800 PSI 2017/03 MADE IN CANADA.

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 900 psi/5s	End Condition
BSM-3077	Heat	NPS 34 X 1.681 inWT	5	LRL	580.20	<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 (I/W)	CE (CSA)
BSM-3077	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.11	0.44	0.008	0.002	0.20	2.16	0.05	0.98	0.03	0.008	-	-	-	-	-
		Product	0.13	0.46	0.009	0.002	0.24	2.05	0.04	0.97	0.03	0.010	0.001	0.003	0.0005	-	-
		Product	0.11	0.42	0.009	0.002	0.20	2.04	0.05	0.96	0.03	0.010	0.001	0.003	0.0004	-	-

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: 12.7mm Round Bar				
BSM-3077	Heat	Ferrite & Bainite	79	Pass	Longitudinal: 12.7mm Round Bar	Pass	56,800	76,200	0.75	41
					Pass	Longitudinal: 12.7mm Round Bar	Pass	46,700	74,200	0.63

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 2014/68/EU.
 Mill Test Certificate approved by:

✓ 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.

T. Lam **MAR 15 / 2017**

Tonya Lam, P. Tech. (Eng.)
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