



Bri-Steel Manufacturing
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Mill Test Certificate

Product: **Seamless Alloy Steel Pipe** Product Heat Number: **BSM-2943** Product Size: **NPS 28 X 0.929** Production Date: **November 7, 2016**
 Production Method: **Hot Expansion** Product Heat Treatment: **Normalized (1060°C/20min) and Tempered (770°C/90min)** MTR Certificate: **003032**

Product Standards: **ASME B36.10-2004, ASTM A335/ASME SA335-2015 GRADE P91**
 Product Markings: **BRI-STEEL MFG ASTM/ASME A/SA335 GR P91 NPS 28 X 0.929 inchWT**
HEAT BSM-2943 (PIPE # LENGTH MASS) 268.6lb/ft NDE(UT) 2390PSI SMLS 2016/11 MADE IN CANADA.

Product Details				Non-Destructive Testing													
Heat	Test Type	Product Size*	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT Pass	UT ASTM E213	ET	ET ASTM E309	HydroTest	End Condition	
BSM-2943	Heat	NPS 28 X 0.929 in. WT	1	DRL	268.60	<5	<20	Pass	Pass	Pass	Pass N12.5	-	-	Pass	PE		
Chemical Analysis (wt%)																	
Steelmaking Method		Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb		Zr	
Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed		Heat	0.08	0.42	0.009	0.002	0.29	8.74	0.03	0.96	0.16	0.190	0.001	0.07	0.0006	0.037	
		Product	0.08	0.42	0.009	0.001	0.29	8.63	0.04	0.98	0.15	0.193	0.002	0.08	0.0004	*	
Mechanical Properties																	
Microstructure		Hardness HBW	Flattening Test		Tension Test		Yield (Rt0.5)		Tensile (Rm)		Y/T		Elongation (A)				
Tempered Martensite & Fine Carbides		210	Pass		50mm GL		psi		psi		(Rt0.5/Rm)		%				
					Longitudinal; 12.7mm Round Bar		87,600		98,800		0.89		26				

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/SA335-2015, and the purchase order requirements, and that the results meet the corresponding requirements.
 ✓ 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.
 ✓ Bri-Steel Manufacturing is registered and certified to ISO-9001:2008, API Q1 and PED 97/23/EC.

Mill Test Certificate approved by:

 2016 Nov 14

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

* The product analysis instrument was not capable of measuring this element.