



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe    Product Heat Number: BSM-2736    Product Size: NPS 24 STD    Production Date: Apr 25, 2016  
 Production Method: Hot Expansion    Product Heat Treatment: As Rolled    Certificate No.: MTR- 002794

Product Standards: ASME B36.10M-2015, ASTM/ASME A333-2015/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B NDE, A53-2012/SA53-2013 Grade B Type S,

Product Markings  
 NPS 24 STD 0.375 INCHWT SMLS 2016/04 NDE 660PSI  
 HEAT BSM-2736 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) A/SA106 GR B A/SA53 GR B 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 ASTM E309	HydroTest 660PSI/ 5 s	End Condition
BSM-2736	Heat	NPS 24 STD 0.375in. WT	6	DRL	94.62	<5	<20	Pass	Pass	Pass	N12.5 Pass	-	-	Pass	31° Bevel

### Chemical Analysis (wt%)

Heat	Steelmaking Method	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE(IIW)	CE(IIW)Max	CE(CSA)
BSM-2736	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	0.16	1.18	0.010	0.002	0.26	0.01	0.01	0.01	0.02	0.050	0.001	0.001	0.0001	0.37	0.37
	Product	0.15	1.15	0.009	0.003	0.27	0.04	0.01	0.01	0.02	0.060	0.002	0.001	0.0002	0.37	0.35
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

### Mechanical Properties

Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2736	Heat	Ferrite & Pearlite	0	Pass	Longitudinal; 1.5 in. x WT	48 800	74 000	0.66	44
				Pass	Longitudinal; 1.5 in. x WT	57 500	78 000	0.74	44

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy Min. (J) (3 Tests) AVG	Impact Energy (J) (3 Tests) AVG	Shear (%) (3 Tests) AVG	Lateral Expansion (mm) (3 Tests) AVG
BSM-2736	ASTM A333	CVN Long 10 x 7.5 mm	-48	(11/11/11) 14	(114/104/89) 102	(60/60/40) 53	(2.27/2.08/1.69) 2.01

### Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A333-2015/SA333-2013, A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 (APIQR-1584), API Q1, and PED 97/23/EC.

✓ This pipe product meets the sour service requirements of

✓ 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:

*T. Lam* APR/27/2016

Tonya Lam, P. Tech (Eng.)  
 Assistant QA Manager