



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2739 Product Size: NPS 24 STD Production Date: Apr 27, 2016
 Production Method: Hot Expansion Product Heat Treatment: As Rolled Certificate No.: MTR- 002798
 Product Standards: ASME B36.10M-2015, ASTM/ASME A333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
 Product Markings: NPS 24 STD 0.375 INCHWT SMLS 2016/04 NDE 660PSI
 HEAT BSM-2739 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 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 ASTM E213	ET ASTM E309	HydroTest 660 PSI/ 5 s	End Condition
BSM-2739	Heat	NPS 24 STD 0.375in. WT	10	DRL	94.62	<5	<20	Pass	Pass	Pass	N12.5 Pass	-	Pass	32° Bevel

Heat	BSM-2739	Steelmaking Method Blast Furnace; EAF; ladle Refining; Vacuum Degass; Fully Killed	Chemical Analysis (wt%)																		
			Test Type		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)/Max	CE(CSA)	
			Heat	Product	0.16	1.18	0.010	0.002	0.26	0.01	0.01	0.01	0.01	0.02	0.050	0.001	0.001	0.0001	0.37	-	0.37
						0.15	1.19	0.009	0.003	0.27	0.04	0.01	0.01	0.02	0.060	0.002	0.002	0.0002	0.37	-	0.36

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-2739	Heat	Ferrite & Pearlite	82 HRBW	Pass	Longitudinal; 1.5 in. x WT Longitudinal; 1.5 in. x WT	50 500 51 000	75 500 77 500	0.67 0.66	42 44

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy (J)	Shear (%)	Lateral Expansion (mm)
BSM-2739	ASTM A333	CVN Long 10 x 7.5 mm	-48	(11/11/11) 14	(3 Tests) AVG (102/99/96) 99	(3 Tests) AVG (50/50/50) 50	(3 Tests) AVG (2.16/2.02/1.93) 2.04

- 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 NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2012 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.

Mill Test Certificate approved by:

T. Lam APR 28 / 2016

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