



# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-1693      Production Date: Mar 11, 2014  
Production Method: Hot Expansion      Product Heat Treatment: As-rolled      Certificate No.: MTR- 000943  
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

## Product Markings



NPS 24 STD 0.375 INCHWT SMLS 2014/03 NDE 1180PSI  
HEAT BSM-1693 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA106 GR B/C 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 $\mu$ R/hr	Res. Mag. Gauss	Visual Insp.	OD*	UT WT	UT ASTM E213	ET ASTM	HydroTest 1180 PSI/ 5 s	End Condition
BSM-1693	Heat	NPS 24 STD 0.375in. WT	4	DRL	94.62	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	34° Bevel

Chemical Analysis (wt%)																		
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)	
		Heat	0.20	0.90	0.013	0.004	0.24	0.04	0.08	0.01	0.04					0.0003	-	-
		Product	0.21	0.93	0.008	0.006	0.22	0.04	0.09	0.02	0.04	0.004	0.001	0.001	0.0004	0.39	0.39	
BSM-1693		Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed																

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %				
BSM-1693	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 38.1 mm x WT	45,200	70,000	0.65	41				

Heat	Test	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
BSM-1693	Standard	-	-	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
				-	-	-	-	-	-	-	-	-	-	-	-

## 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/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2010 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.

*Additional Tolerances as per API*

Mill Test Certificate approved by:

*Paul Sowden*  
2014 MAR 12

Paul Sowden, T.T.  
Assistant QA Manager