



# Mill Test Certificate

Bri-Steel Manufacturing Inc.  
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Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-2092

Product Size: 24STD

Production Date:

Oct 09, 2014

Production Method:

Hot Expansion

Product Heat Treatment:

As-rolled

Certificate No.: MTR- 001416

Product Standards:

ASME B36.10-2004, API 5L-45th Ed. Grade B/X42/X46/X52 PSL1, ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A/SA106-2014 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



<API & L/C No.> API SPEC 5L NPS 24 STD 0.375 INCHWT GR B/X42/X46/X52 PSL1 SMLS 2014/10 NDE 1470PSI  
HEAT BSM-2092 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) 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 µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1470PSI/ 5 s	End Condition
BSM-2092	Heat	NPS 24 STD 0.375in. WT	28	DRL	94.62	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	32.5° 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	0.17	1.11	0.017	0.004	0.35	0.11	0.03	0.01	0.05	0.060				-	-
		Product	0.20	1.11	0.021	0.004	0.37	0.13	0.04	0.01	0.09	0.068	0.002	0.001	0.0003	0.44	0.44
BSM-2092	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-2092	Heat	Ferrite & Pearlite	82 HRBW	Pass	Longitudinal; 38.1 mm x WT	54,500	77,000	0.71	43

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear			Lateral Expansion				
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2092	ASTM A333	CVN Long 10 x 7.5 mm	-48	36.5	104.0	81.5	152.5	40	60	50	50	0.88	2.01	1.98	1.62

## Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A/SA106-2014 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1.

✓ 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.

Mill Test Certificate approved by:

Tonya Lam, C.E.T.  
Assistant QA Manager

*T. Lam* Oct 15 / 2014

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