



# Mill Test Certificate

Bri-Steel Manufacturing  
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4  
 Tel: 001 (780) 469-6603  
 Fax: 001 (780) 469-6986  
 www.bri-steel.com

Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-3104      Production Date: Apr 11, 2017  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 003287  
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB/X42 PSL1, ASTM/ASME A333-2016/SA333-2015 Grade 6 LT(M45C) A106-2014/SA106-2015 Grade B/C NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2009 MR0103/ISO 17495:2015  
 Product Markings: <API & L/C No. > API SPEC 5L NPS 24 TRUE 40 0.688 INCHWT GRB/X42 PSL1 SM15 2017/04 NDE 2170PSI  
 HEAT BSM-3104 (PIPE # LENGTH MASS) 171.5lb/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	Geliger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition
BSM-3104	Heat	NPS 24 TRUE 40 0.688in. WT	2	DRL	171.5	<5	<10	Pass	Pass	ASTM E114	ASTM E213	ASTM E309	2170PSI/ 5 s	Plain End

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)																
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIIW)Max	CE(CSA)	
BSM-3104	Blast Furnace, EAF, Ladle Refining, Vacuum Degass, Fully Killed (at TRCO China)	Heat	0.17	1.11	0.012	0.002	0.32	0.05	0.01	0.01	0.01	0.01	0.054	0.002	0.001	0.0004	0.38	-	0.38
		Product	0.17	1.09	0.011	0.005	0.33	0.06	0.01	0.01	0.01	0.01	0.056	0.002	0.001	0.0004	0.38	-	0.38
			0.17	1.10	0.011	0.005	0.33	0.06	0.01	0.00	0.01	0.057	0.002	0.001	0.0004	0.38	-	0.38	

Heat	Test Type	Microstructure	Hardness	Flattening Test				Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
				2 in. GL	1.5 in. x WT	1.5 in. x WT	Longitudinal; 1.5 in. x WT						
BSM-3104	Heat	Ferrite & Pearlite	79 HRBW	Pass	Pass	Pass	Pass	48 400	48 700	75 500	76 000	0.64	50

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)		Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
					(3 Tests) AVG	(14/14/14) 18			
BSM-3104	ASTM A333	Pass	CVN Long 10 x 10 mm	-45	(3 Tests) AVG	(14/14/14) 18	(3 Tests) AVG	(20/20/20) 20	(3 Tests) AVG
							(104/93/106) 101		(1.65/1.48/1.59) 1.57

### Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with GRR42 ASTM/ASME A333-2016/SA333-2015, A106-2014/SA106-2015, A53-2012/SA53-2015, 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 2014/68/EU.

✓ 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/ISO 17495:2015 Section 13.1

✓ 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/17/2017

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