



# 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-3024      Product Size: NPS 24 TRUE 80      Production Date: Jan 23, 2017  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 003126  
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. Grade B/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 80 1.219 INCHWT GRB/X42 PSL1 SMLS 2017/01 NDE 2970PSI  
 HEAT BSM-3024 (PIPE # LENGTH MASS) 296.84lb/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 Pass	UT (WT) ASTM E114	UT ASTM E213	ET ASTM E309	HydroTest 2970PSI/ 5 s	End Condition	
BSM-3024	Heat	NPS 24 TRUE 80 1.219in. WT	4	DRL	296.84	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	Plain End	

Heat	BSM-3024	Steelmaking Method Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed (at TRCO China)	Chemical Analysis (wt%)																																	
			Test Type		C		Mn		P		S		Si		Cr		Cu		Mo		Ni		V		Ti		Nb		B		CE(I/W)		CE(II/W)Max		CE(CSA)	
			Heat	Product	0.16	0.13	1.16	1.07	0.010	0.011	0.003	0.004	0.25	0.25	0.03	0.05	0.01	0.01	0.02	0.02	0.03	0.03	0.057	0.057	0.002	0.001	0.0001	0.0001	0.38	-	-	0.37				
						0.13	1.09	0.012	0.004	0.26	0.05	0.01	0.01	0.03	0.057	0.001	0.001	0.0003	0.34	-	-	0.31														

Heat	BSM-3024	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	0.5 in. Round Bar				
		Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 0.5 in. Round Bar	Longitudinal; 0.5 in. Round Bar	54 000	75 000	0.72	37
					Pass			51 500	74 500	0.69	38

Heat	BSM-3024	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						
		ASTM A333	Pass	CVN Long 10 x 10 mm	-45			(3 Tests) AVG	(74/64/98) 79	(3 Tests) AVG	(20/15/30) 22	(3 Tests) AVG	(0.92/0.96/1.24) 1.04

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with GRX42 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.

Mill Test Certificate approved by:

*T. Lam* Jan 26 / 2017

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

- ✓ 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.