



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-3124 Production Date: Apr 27, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003330
 Product Standards: ASME B36.10M-2015, 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: NPS 36 XS 0.500 INCHWT SMLS 2017/04 NDE
 HEAT BSM-3124 (PIPE # LENGTH MASS) 189.75lb/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	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition
BSM-3124	Heat	NPS 36 XS 0.500in. WT	6	DRL	189.75	<5	<10	Pass	Pass	ASTM E114	ASTM E213	ASTM E309	-	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(IIW)Max	CE(CSA)
BSM-3124	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.18	1.29	0.011	0.006	0.34	0.04	0.01	0.00	0.04	0.003	0.002	0.0006	0.41	-	0.42	
		Product	0.17	1.30	0.011	0.005	0.35	0.05	0.01	0.00	0.04	0.039	0.004	0.001	0.0005	0.41	-	0.41
			0.17	1.28	0.012	0.005	0.35	0.05	0.01	0.00	0.04	0.039	0.004	0.001	0.0005	0.40	-	0.41

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-3124	Heat	Ferrite & Pearlite	81 HRBW	Pass	Longitudinal: 1.5 in. x WT Longitudinal: 1.5 in. x WT	50 500	76 500	0.66	51
				Pass		52 000	74 500	0.70	52

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-3124	ASTM A333	Pass	CVN Long 10 x 10 mm	-45	(3 Tests) AVG (14/14/14) 18	(3 Tests) AVG (53/65/82) 67	(5/5/15) 8	(3 Tests) AVG (0.78/0.89/1.42) 1.03

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A333-2016/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

Mill Test Certificate approved by:

T. Lam May 07 2017

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

- ✓ 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.