



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-2705 Product Size: NPS 24 TRUE 40 Production Date: Apr 04, 2016
 Production Method: Hot Expansion Product Heat Treatment: As Rolled Certificate No.: MTR- 002154
 Product Standards: ASME B36.10M-2015, ASTM/ASME A333-2015/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009
 Product Markings: NPS 24 TRUE 40 0.688 INCHWT SMLS 2016/04 NDE 1200PSI
 HEAT BSM-2705 (PIPE # LENGTH MASS) 171.2lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) A/SA106 GR B 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	Gelger	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT	ET	HydroTest	End Condition	
BSM-2705	Heat	NPS 24 TRUE 40 0.688in. WT	1	DRL	171.2	<5	<20	Pass	Pass	Pass	ASTM E213	ASTM E309	1200 PSI/ 5 S	32° Bevel	

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)
			Heat	0.16	1.14	0.014	0.002	0.26	0.05	0.01	0.01	0.01	0.02	0.050	0.001	0.001	0.0001	0.37
BSM-2705	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.15	1.09	0.015	0.003	0.27	0.05	0.01	0.01	0.03	0.053	0.002	0.001	0.0003	0.36	-	0.34

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-2705	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 1.5 in. x WT	46 800	73 000	0.64	44

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy (J)	Shear (%)	Lateral Expansion (mm)
BSM-2705	ASTM A333	CVN Long 10 x 10 mm	-45	(14/14/14) 18	(3 Tests) AVG (106/56/54) 72	(3 Tests) AVG (40/20/20) 27	(3 Tests) AVG (1.70/0.90/0.80) 1.13

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A333-2015/SA333-2013, A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008, API Q1, and PED 97/23/EC.
 ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2012 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
 Tonya Lam, P. Tech (Eng.)
 Assistant QA Manager

April 11/2016