

Mill Test Certificate

2125-64 Avenue, Edmonton, AB Canada T6P 1Z4 **Bri-Steel Manufacturing**

Tel: 001 (780) 469-6603

Fax: 001 (780) 469-6986 www.bri-steel.com

BSM-2464 Product Size: NPS 36 STD Production Date: Jul 09, 2015

ThermoMechanical Formed Certificate No.: MTR- 001875

ASME B36.10-2004, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Product Markings

Product Standards: Production Method: Product:

Seamless Carbon Steel Pipe

Hot Expansion

Product Heat Treatment: Product Heat Number:

NPS 36 STD 0.375 INCHWT SMLS 2015/07 NDE 790PSI

HEAT BSM-2464 (PIPE # LENGTH MASS) 142.71b/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

		Product: Details							N	Non-Destructive Testing	ive Testing			
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	UT	UT	ET	HydroTest	End
					lb/ft	μR/hr	Gauss	Insp.		WT	ASTM E213	ASTM E309	ASTM E213 ASTM E309 790 PSI/ 5 s	5 _S Condition
BSM-2464	Heat	NPS 36 STD 0.375in. WT	3	DRL	142.7	~ 5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End
				5.000	Ch	Chemical Analysis (w+%)	veic (w+0%)							

BSM-2464 Heat Degas; Fully Killed Blast Furnace; EAF; Ladle Refining; Vacuum Steelmaking Method Product Test Type Heat 0.18 0.17 1.27 1.21 Σ 0.0130.016Mechanical Properties JIEITICAL ATTAIYSIS (WL/0) 0.004 0.004 0.28 0.29 S 0.02 0.03 Ç 0.01 0.01 C 0.01 0.01 Mo 0.01 0.01 \mathbf{Z} 0.053 0.050 < 0.003 0.001 ∄ 0.001 0.001 N_p 0.0003 0.0005 В CE(IIW) CE(CSA) 0.41 0.39 0.41 0.39

42	0.73	71,500	52,000	Longitudinal; 1.5 in. x WT	Pass	80 HRBW	Ferrite & Pearlite	Heat	BSM-2464
%	(Rt0.5/Rm)	psi	psi	2 in. GL					
Elongation (A)	Τ/Υ	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat

Heat	Test	Impact Test	Temp		Impact E	Energy			% Shear	near			Lateral Expansion	xpansion	
	Standard	Sample Details	ငိ	_	Ĺ	ſ	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-2464	1	•	1		1	-		-	-		1	-	4	-	:1
												The state of the s			

Additional Details:

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

 \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

Suly /21/2015

Tonya Lam, C.E.T.

Assistant QA Manager