

## Mill Test Certificate

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

Fax: 001 (780) 469-6986 Tel: 001 (780) 469-6603

www.bri-steel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number:

Product Size: 18STD

Production Date: Feb 17, 2015

Hot Expansion **Product Heat Treatment:** 

BSM-2246 As-rolled

Certificate No.: MTR-001586

Product Standards: Production Method:

**Product Markings** 

HEAT BSM-2246 (PIPE # LENGTH MASS) 70.59lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA <API & L/C No.> API SPEC 5L NPS 18 STD 0.375 INCHWT GR B/X42 PSL1 SMLS 2015/02 NDE 1640PSI ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-

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32.5° Bevel	Pass	Pass	Pass	Pass	Pass	Pass	<10	Ġ.	70.59	DRL	20	NPS 18 STD 0.375in. WT	Heat	BSM-2246
s Conditio	1640PSI/ 5 s	ASTM	ASTM E213	WT		Insp.	Gauss	μR/hr	lb/ft					
End	HydroTest	ET	UT	TU	90	Visual	Res. Mag.	Geiger	Mass	Length	Pieces	Product Size	Test Type	Heat
			tive Testing	Non-Destructive Testing	Z							Product: Details		
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0.0	Ou Bo	BSM-2246 Blast	Heat	
	Degas, runy nineu	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
	Product	Heat	Test Type	
	0.20	0.21	С	
	0.88	0.90	Mn	
	0.016	0.010	Р	_
	0.004	0.003	S	Chemical
	0.22	0.22	Si	Chemical Analysis (w
	0.03	0.04	Cr	(wt%)
	0.03	0.03	Cu	
	0.00	0.01	Mo	
	0.01	0.01	Ni	
	0.005	0.005	٧	
	0.027	-	П	
	0.001	1	Nb	
	0.0004	1	В	
	0.36	1	CE(IIW)	
	0.36	-	CE(CSA)	

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	Heat		SM-2246		Heat				
Standa	Test		Heat		Test Type				
rd			Ferrite & Pea		Microstruct				
Sample	lmpa		rlite		ure				
e Details	ct Test		76 HRBW		Hardness				
၁ိ	Temp		Pass		Flattening Test				
J						Mechar			
L	Impact Energy	Impact		ongitudina.	50	Ten	Mechanical Properties		
J			ıl; 38.1 m	)mm GL	sion Test	rties			
AVG			m x WT						
%	% Shear	10000000			Yie				
%		% Shear	% Shear	% She		44,600	psi	ld (Rt0.5)	
%				1000	70		Tensi		
AVG			,500	osi	le (Rm)				
mm	Lateral Expansion			0.63	(Rt0.5/	T/Y			
mm			ω	/Rm)					
mm		xpansion	46	%	Elongati				
AVG							on (A)		
	J J J AVG % % AVG mm mm mm	Test Impact Test Temp Impact Energy % Shear Lateral Expansion Standard Sample Details °C J J AVG % % AVG mm mm	Test Impact Test Temp Impact Energy % Shear Lateral Expansion Standard Sample Details °C J J AVG % % AVG mm mm	6 Heat Ferrite & Pearlite 76 HRBW Pass Longitudinal; 38.1 mm x WT 44,600 70,500 0.63 46  Test Impact Test Standard Sample Details °C J J AVG % % 8 AVG mm mm mm	Heat         Ferrite & Pearlite         76 HRBW         Pass         Longitudinal; 38.1 mm x WT         44,600         70,500         0.63         46           Test Standard         Impact Test Sample Details         Temp Standard         Temp Standard         Temp Standard         Temp Standard         Temp Standard         J         J         J         AVG         %         %         AVG         mm         mm <t< td=""><td>Test Type         Microstructure         Hardness         Flattening Test Standard         Tension Test Sample Details         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation stongation psi         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation psi         X         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation psi         X         Y/T Stongation psi         X         <t< td=""></t<></td></t<>	Test Type         Microstructure         Hardness         Flattening Test Standard         Tension Test Sample Details         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation stongation psi         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation psi         X         Yield (Rt0.5)         Tensile (Rm) psi         Y/T Stongation psi         Elongation psi         X         Y/T Stongation psi         X <t< td=""></t<>			

## Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1. API 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013 Grade B/C A53-2012/SA53-2013, and the purchase order requirements, and that the
- ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE
- No weld repairs have been performed on this product.
- $\checkmark$  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:

Tonya Lam, C.E.T.

Assistant QA Manager