

## Mill Test Certificate

Bri-Steel Manufacturing Inc. 2125-64 Avenue, Edmonton, AB Canada T6P 124

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

www.bri-steel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-2042

Product Size: 24S60

Production Date: Sep 29, 2014

Production Method: Hot Expansion Product Heat Treatment:

Certificate No.: MTR- 001371

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2014 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

As-rolled

**Product Markings** 

HEAT BSM-2042 (PIPE # LENGTH MASS) 238.1lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA <API & L/C No.> API SPEC 5L NPS 24 SCH 60 0.969 INCHWT GR B PSL1 SMLS 2014/09 NDE 1900PSI

BSM-2042		Heat	
Heat		Test Type	
NPS 24 SCH 60 0.969in. WT		Product Size	Product; Details
1		Pieces	
DRL		Length	
238.1	lb/ft	Mass	
\$	µR/hr	Geiger	
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		00	Z
Pass	WT	TU	Non-Destructive Testin
Pass	ASTM E213 ASTM	UT	tive Testing
Pass	ASTM	ĘŢ	
Pass	1900 PSI/ 5 s	HydroTest	
Plain End	s Condition	End	

	BSM-2042	Heat	
Control of the second	Blast Furnace; CAF; Ladle Refining; Vacuum Depas: Fully Killed	Steelmaking Method	
Product	Heat	Test Type	
0.19	0.19	0	
0.87	0.85	Mn	
0.007	0.006	סי	
0.012	0.012	S	Chemical
0.21	0.20	Si	ical Analysis (
0.05	0.05	Cr	WEZa)
0.06	0.05	Cu	
0.01	0.01	Mo	
0.03	0.03	N.	
0.002		٧	
0.001		П	
0.001		Nb	
0.0003	0.0003	В	
0.35	ı	CE(IIW)	
0.35	ŧ	CE(CSA)	

~	(11.00.0)		-	444					
20			-	00111101				-	
9/	10+0 F/0	3		7					
				)					
	•		•						
	1/1			יתופוטון זכטר	The state of the s	1010100			
Topostion (A)	< T	Toncilo (Dm)	V:012 (0+0 C)	Tension Test	במותם דובוד	Laranass	VICTOSTTICTICE	PST VDP	Tear
					1		A CONTRACTOR OF THE PARTY OF TH	Took Trime	-
				A CONTRACT OF CITES					
				Viernanical properties					

	BSM-2042		Heat
	,	Standard	Test
	j.	Sample Details	Impact Test
		°C	Temp
-		<u>_</u>	
-		_	Impact
		_	Energy
		AVG	
	,	%	
	ı	%	% Shear
	E	%	ear
	ı	AVG	
	E	mm	
	ı	mm	Lateral Ex
	Ċ	mm	(pansion
	10	AVG	

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1. API 5L-45th Ed., ASTM/ASME A/SA106-2014 Grade B A/SA53-2012, and the purchase order requirements, and that the results meet the

Mill Test Certificate approved by:

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2010 Section 2.1

Tonya Lam, C.E.T.

11 lam Sept /30/2014

Assistant QA Manager

✓ 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

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Production Method:

**Product Markings** 

Product Heat Number:

BSM-2042 Product Size: 24S60

Production Date:

Certificate No.: MTR- 001371 Sep 29, 2014

Hot Expansion Product Heat Treatment: As-rolled

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2014 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

<API & L/C No.> API SPEC 5L NPS 24 SCH 60 0.969 INCHWT GR B PSL1 SMLS 2014/09 NDE 1900PSI

BSM-2042 Heat Test Type Heat NPS 24 SCH 60 0.969in. WT **Product Size** Product; Details HEAT BSM-2042 (PIPE # LENGTH MASS) 238.1lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA Pieces Length DRL 238.1 Mass lb/ft µR/hr S Res. Mag. Gauss 10 Visual insp. Pass Pass QD Non-Destructive Testing Pass S S ASTM E213 Pass ASTM Pass 日 1900 PSI/ HydroTest Pass S Condition Plain End

	BSM-2042	Heat	
Cogos, out when	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
Product	Heat	Test Type	
0.19	0.19	C	
0.87	0.85	Mn	
0.007	0.006	P	
0.012	0.012	S	Chemical Analysi
0.21	0.20	Si	Analysis (
0.05	0.05	Cr	wt%)
0.06	0.05	Cu	
0.01	0.01	Mo	
0.03	0.03	Z	
0.002		<	
0.001		11	
0.001		Nb	
0.0003	0.0003	В	
0.35	r	CE(IIW)	
0.35	ŧ	CE(CSA)	

45	0.60	67,500	40,400	Longitudinal; 19.05 mm x WT	Pass	74 HRBW	Ferrite & Pearlite	Heat	BSM-2042
%	(Rt0.5/Rm)	psi	psi	50mm GL					
Elongation (A)	٧/٦	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
				Mechanical Properties					

BSM-2042		Heat
,	Standard	Test
	Sample Details	Impact Test
	ů	Temp
,	_	
	٠	Impact
1	<b>-</b>	Energy
\$	AVG	
	%	
t.	%	% Shear
r	%	ear
r	AVG	
r	mm	
ŧ	mm	Lateral Ex
ı	mm	pansion
Е	AVG	

## Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API SL-45th Ed., ASTM/ASME A/SA106-2014 Grade B A/SA53-2012, 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.

Mill Test Certificate approved by:

No weld repairs have been performed on this product. MR0103-2010 Section 2.1

√ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE

 $\checkmark$  This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

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