

Mill Test Certificate

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

Tel: 001 (780) 469-6603

Fax: 001 (780) 469-6986

www.brichemsteel.com

Product: Seamless Carbon Steel Pipe

Production Method:

Hot Expansion

Product Heat Number:

BSM-1637 Product Size: 18XS

Production Date: Feb 13, 2014

Product Heat Treatment: As-rolled

Certificate No.: MTR- 000877

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings | STEEL | - (API > 5L-0898 API SPEC 5L NPS 18 XS 0.500 INCHWT GR B/X42 PSL1 SMLS 2014/02 NDE 1990PSI MANUEZOSTUSINOS HEAT BSM-1637 (PIPE # LENGTH MASS) 93.45lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

		Product: Details							Z	on-Destruc	Non-Destructive Testing		
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	TU	UT	ET	HydroTest
					lb/ft	μR/hr	Gauss	Insp.		TW	ASTM E213 ASTM	ASTM	1990 PSI/ 5 s Condition
BSM-1637	Heat	NPS 18 XS 0.500in. WT	4	DRL	93.45	Ġ	<10	Pass	Pass	Pass	Pass	Pass	Pass

0 0 1 1 1	/COT-IAICG
Test Type C Mn P Heat 0.20 0.92 0.009 Product 0.20 0.89 0.009	חבמנ
C Mn P 0.20 0.92 0.009 0.20 0.89 0.009	MPS 18 XS 0.500In. W
C Mn P 0.20 0.92 0.009 0.20 0.89 0.009	~
Chemical Ar Mn P S 0.92 0.009 0.013 0.89 0.009 0.016	4
Chemical Ar P S 0.009 0.013 0.009 0.016	באר
Chemical An S 0.013	93.45
5	ĉ
	- <10
8 8 7	1811
Cu 0.09	Pass
	Pass
	Pass
0.002	Pass
0.001	SS
	Pass
Nb B CE(IIW) 0.0003 - 0.0001 0.0003 0.37	Pass
CE(IIW) 0.37	
CE(IIW) CE(CSA)	34° Bevel

£	0.01	, ,,,,,,,	77,000	Conflicted Contract of the	200			The state of the s	
Λς	0.61	73 500	44 800	longitudinal: 38 1 mm v W/T	Pass	74 HRBW	Ferrite & Pearlite	Heat	BSM-1637
								200000	
%	(KtU.5/Km)	psi	psi	סטווווו פר					
2	1000			EOmm C					
Elongation (A)	1/1	Tellslie (NIII)	וופוט (אנט.ט)	ו בווזוטוו ו בזר	Light Gilling	1301011033			
Flamation (A)	\/T	Toncilo (Dm)	Viola (ato E)	Tonsion Tost	Elattening Test	Hardness	Microstructura	Test Type	Heat
				iviechanical Properties					

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BSM-1637

Heat

Standard

Sample Details

Temp °C

Impact Energy

AVG

%

%

%

AVG

mm

mm

mm

AVG

Lateral Expansion

% Shear

Impact Test

lest

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

√ 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

✓ 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:

2014 FEB19

Paul Sowden, T.T.

Assistant QA Manager



Mill Test Certificate

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

Fax: 001 (780) 469-6986 www.brichemsteel.com Tel: 001 (780) 469-6603

Product:

Seamless Carbon Steel Pipe

Production Method:

Hot Expansion

Product Heat Number:

BSM-1637

Product Size: 18 X 0.450

Production Date:

Feb 13, 2014

Certificate No.: MTR- 000878

Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010 Product Heat Treatment:

As-rolled

Product Markings

NERT-STEEL NPS 18 X 0.450 INCHWT SMLS 2014/02 NDE 1990PSI

SEXEMPLISTEEL HEAT BSM-1637 (PIPE # LENGTH MASS) 84.35Ib/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	Heat Tes		BSM-1637 F
	Test Type		Heat
Product: Details	Product Size		NPS 18 X 0.450in. WT
	Pieces		4
	Length		DRL
	Mass	lb/ft	84.35
	Geiger	μR/hr	ç,
	Res. Mag.	Gauss	<10
	Visual	Insp.	Pass
N	OD		Pass
on-Destruc	TU	WT	Pass
Non-Destructive Testing	υτ	ASTM E213	Pass
	ΕT	ASTM	Pass
	HydroTest	1990PSI/ 5 s	Pass
	End	5 s Condition	34° Bevel

Heat BSM-1637 BI	
모모	
Steelmaking Method Blast Furnace; EAF, Ladle Refining; Vacuum Degas; Fully Killed	
Test Type Heat Product	
C 0.20 0.20	
Mn 0.92 0.89	
P S 0.009 0.013 0.009 0.016	
S 0.013 0.016	Chemical Analysis
SI 0.23 0.23	ADAIVSIS
Cr 0.06	W %
Cu 0.09	
0.01 0.01	
0.07 0.06	
V 0.002	
Ti 0.001	
0.001	
B 0.0003 0.0003	
CE(IIW) - 0.37	
CE(CSA) - 0.37	

BSM-1637 Heat		Heat Test Type	
Ferrite & Pearlite		Microstructure	
74 HRBW		Hardness	
Pass		Flattening Test	
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
44,800	psi	Yield (Rt0.5)	
73,500	psi	Tensile (Rm)	
0.61	(Rt0.5/Rm)	Τ/Α	
45	%	Elongation (A)	

BSM-1637 -	Standard	Heat Test
	dard	st
į.	Sample Details	Impact Test
ş	റ്	Temp
1	J	
1	j	Impact
	J	Energy
i	AVG	
ŧ	%	
-	%	% Sh
ť	%	Shear
t	AVG	
E	mm	
·	mm	Lateral Ex
t	mm	(pansion
•	AVG	

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in results meet the corresponding requirements. accordance with ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, 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 MR0103-2010 Section 2.1

✓ No weld repairs have been performed on this product.

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Mill Test Certificate approved by:

FEB 20

Assistant QA Manager Paul Sowden, T.T.