

## 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

Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1688 Product Size: 24STD

Production Date:

Mar 05, 2014

Hot Expansion

As-rolled

Certificate No.: MTR- 000938

**Product Standards:** Production Method: 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 Heat Treatment:

**Product Markings** | API & L/C No. > API SPEC 5L NPS 24 STD 0.375 INCHWT GR B/X42 PSL1 SMLS 2014/03 NDE 1180PSI HEAT BSM-1688 (PIPE # LENGTH MASS) 94.62lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1688		Heat	
Heat		Test Type	
NPS 24 STD 0.375in, WT		Product Size	Product: Details
22		Pieces	
DRL		Length	
94.62	lb/ft	Mass	
6	μR/hr	Geiger	
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		OD	Z
Pass	TW	디	Non-Destructive Testing
Pass	ASTM E213 ASTM	TU	ive Testing
Pass	ASTM	ET	
Pass	1180 PSI/ 5 s Condition	HydroTest	
32.5° Bevel	Condition	End	

						Chemical Analysis (wt%)	Analysis (	wt%)									
Heat	Steelmaking Method	Test Type	С	Mn	P	S	Si	c۲	Cu	Mo	Z.	<	Ti	Nb	В	CE(IIW)	CE(CSA)
BSM-1688	Blast Furnace; EAF; Ladle Refining; Vacuum	Heat	0.21	0.86	0.015	0.007	0.28	0.05	0.01		0.03					r	1
	Degas, rully Nilled	Product	0.22	0.92	0.020	0.013	0.28	0.05	0.01	0.00	0.04	0.003	0.002	0.001	0.0003	0.39	0.39

1	75,000	50,500	Longitudinal; 38.1 mm x WT	Pass	78 HRBW	Ferrite & Pearlite	Heat	BSM-1688
	psi	psi	50mm GL					
	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
			Mechanical Properties					

BSM-1688		Heat
	Standard	Test
,	Sample Details	Impact Test
1	°C	Temp
	J	
1	J	Impact
1	J	Energy
1	AVG	
1	%	
-	%	% Shea
	%	ear
-	AVG	
-	mm	
1	mm	Lateral Exp
1	mm	pansion
-	AVG	

## Additional Details:

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

Bonden 2014 MAR 12

Assistant QA Manager Paul Sowden, T.T.



## 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.brichemsteel.com

Product: Seamless Carbon Steel Pipe **Product Heat Number:** BSM-1688 Product Size: 24 X 0.350

Production Method: Hot Expansion **Product Heat Treatment:** As-rolled Certificate No.: MTR- 000939

Production Date:

Mar 05, 2014

**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** | API & L/C No.> API SPEC 5L NPS 24 X 0.350 INCHWT GR B/X42 PSL1 SMLS 2014/03 NDE 1180PSI

HEAT BSM-1688 (PIPE # LENGTH MASS) 88.31lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1688		Heat	
Heat		Test Type	
NPS 24 X 0.350in. WT		Product Size	Product: Details
22		Pieces	
DRL		Length	
88.31	lb/ft	Mass	
<5	μR/hr	Geiger	
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		OD	No
Pass	WT	TU	on-Destruct
Pass	ASTM E213 ASTM	UT	Non-Destructive Testing
Pass	ASTM	ET	
Pass	1180PSI/ 5 s	HydroTest	
32.5° Bevel	Condition	End	

		BSM-1688	Heat	
	regas, runy Nineu	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
	Product	Heat	Test Type	
	0.22	0.21	С	
	0.92	0.86	Mn	
	0.020	0.015	Р	
	0.013	0.007	S	Chemical Analysis (wt%)
	0.28	0.28	Si	Analysis (
	0.05	0.05	Cr	wt%)
	0.01	0.01	Си	
CO. CO.S.C.	0.00		Mo	
	0.04	0.03	N:	
A CONTRACTOR OF THE PERSON NAMED IN	0.003		<	
State of the State	0.002	5.0	Π.	
	100.0		dN	
	2000.0		В	
	0.39	ı	CE(IIW)	
	0.39	1	CE(CSA)	

34	0.67	/5,000	50,500	Longitudinal; 38.1 mm x W l	Pass	/8 HRBW	remite & Peamite	неат	SSGT-IAIS
					,				2000
%	(Rt0.5/Rm)	psi	psi.	50mm GL					
Elongation (A)	Υ/Τ	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
	1			Mechanical Properties					

B

BSM-1688		Heat
1	Standard	Test
1	Sample Details	Impact Test
1	°C	Temp
1	J	
1	_	Impact
1	J	Energy
1	AVG	
•	%	
ı	%	% Shear
	%	ear
ì	AVG	
1	mm	
,	mm	Lateral Expansion
1	mm	pansion
1	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 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.
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