

## 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.bri-steel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1758 Product Size: 36STD

Production Date:

Apr 10, 2014

Production Method: **Hot Expansion** 

Product Heat Treatment:

As-rolled

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

Certificate No.: MTR- 001030

**Product Markings** 

Product Standards:

| CAPI & L/C No.> API SPEC 5L NPS 36 STD 0.375 INCHWT GR B/X42 PSL1 SMLS 2014/04 NDE 790PSI MANUAL MEAT BSM-1758 (PIPE # LENGTH MASS) 142.7lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1758		Heat	
Heat		lest lype	
NPS 36 STD 0.375in. WT		Product Size	Product: Details
∞		Pieces Length	
DRL		Length	
142.7	lb/ft	Mass	
<u>ئ</u>	μR/hr		
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		OD	No
Pass	WT	디	Non-Destruct
Pass	ASTM E213	5	ive Testing
Pass	ASTM	ET	
Pass	790 PSI/ 5 s	HydroTest	
Plain End	Condition	End	

0.38	0.38	0.0004	0.001	0.002	0.003	0.02	0.01	0.06	0.05	0.24	0.013 0.004		0.89	0.22	Product		
ı	1	0.0004				0.04	0.03	0.06	0.04	0.22	0.007	0.009	0.87	0.19	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degas: Fully Killed	BSM-1758
CE(CSA)	CE(IIW)	В	Nb	=1	<	N:	Mo	Cu	Ç,	Si	S	P	Δ'n	0	Test Type	Steelmaking Method	1
	100000								(wt%)	Analysis	Chemical Analysis (wt%)						

BSM-1758				Heat	
Heat	1		_	lest Type	
Ferrite & Pearlite				Microstructure	
76 HRBW				Hardness	
Pass				Flattening Test	
Longitudinal; 38.1 mm x WT		50mm GL		Tension Test	Mechanical Properties
43,800		psi		Yield (Rt0.5)	
71,000		ps.	A STATE OF THE PROPERTY OF THE	Tensile (Rm)	
0.62		(Rt0.5/Rm)		7/7	
41		%		Elongation (A)	

	BSM-1758				Heat
	r	The state of the s	Standard		Test
	•		Sample Details		Impact Test
	1		ć		Temp
		Ì	_		
Ī	ı		_		Impact
	E		_	1	Energy
	ı		AVG		
	ı	200	%		
	1		%		% Shear
	ı.		%		lear
	t		AVG		
	1		m m		
	t		mm		Lateral Expansion
	1	Name of the last o	mm	. Lancarian de	coansion
	ı		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.
- $\checkmark$  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
- $\checkmark$  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 APR 17 Barken

Assistant QA Manager Paul Sowden, T.T.



## Mill Test Certificate

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BSM-1758 Product Size: 36STD Production Date: Apr 10, 2014

Certificate No.: MTR- 001031

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 Production Method:

**Hot Expansion** 

Product:

Seamless Carbon Steel Pipe

Product Heat Number:

**Product Heat Treatment:** 

As-rolled

Product Markings NPS 36 STD 0.375 INCHWT SMLS 2014/04 NDE 790PSI

MANUFACHURANGINGIII HEAT BSM-1758 (PIPE # LENGTH MASS) 142.7lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1758		Ĩ	
1758		Heat	
Heat		Test Type	
NPS 36 STD 0.375in. WT		Product Size	Product: Details
8		Pieces	
DRL		Length	
142.7	lb/ft	Mass	
5	μR/hr	Geiger	
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		OD	Z
Pass	WT	TU	on-Destruc
Pass	ASTM E213 ASTM	TU	Non-Destructive Testing
Pass	ASTM	ΕT	
Pass	790 PSI/ 5 s	HydroTest	
Plain End	Condition	End	

		B	Г	Г
		BSM-1758	Heat	
	Degas, runy sineu	_	Steelmaking Method	
	Product	Heat	Test Type	
	0.22	0.19	С	
	0.89	0.87	Mn	
100000	0.013	0.009	Р	
	0.004	0.007	S	Chemical Analysis (wt%)
	0.24	0.22	Si	Analysis (
	0.05	0.04	Cr	wt%)
	0.06	0.06	Си	
000	0.01	0.03	Mo	
	20.0	0.04	N:	
	0.003		٧	
	0.002		Ti	
-	0.001		Nb	
	0.0004	0.0004	В	
	85.0	1	CE(IIW)	
	0.38	1	CE(CSA)	

BSM-1758		Heat	
Heat		Test Type	
Ferrite & Pearlite		Microstructure	ACTION TO ACTION
76 HRBW		Hardness	
Pass		Flattening Test	
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
43,800	psi	Yield (Rt0.5)	
71,000	psi	Tensile (Rm)	
0.62	(Rt0.5/Rm)	Υ/Τ	
41	%	Elongation (A)	

Campic Details	. AVG					AVG % % AVG	AVG % % AVG	AVG Mm
, _			AVG %	AVG % %	· %	· G %	G % % AVG mm	G % % AVG mm
	AVG	AVG %	AVG % %	J J AVG % %	G % %	'G % % AVG	G % % AVG mm	G % % AVG mm
	J J AVG	J J AVG %		J AVG % %	G % %	'G % % AVG	G % % AVG mm	G % % AVG mm
	J AVG	J AVG %	J AVG % %	J AVG % % %	G % %	'G % % AVG	G % % AVG mm	G % % AVG mm
	AVG	AVG %	AVG % %	AVG % %	G % %	'G % % AVG	G % % AVG mm	G % % AVG mm

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2014 APR 17

Paul Sowden, T.T.
Assistant QA Manager