

## 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

**Hot Expansion** 

**Product Standards:** Production Method:

Product Heat Number:

BSM-1895 Product Size: 18XS

Production Date: Jun 12, 2014

Product Heat Treatment: As-rolled

ASME 836.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2013 Grade B NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Certificate No.: MTR- 001186

Product Markings

		. 400		, 000	1 000	1 433	0.7.0	ć	20.70	717	٨	THE PLANT COUNTY AS A	- 70	COLUMN TOUR
32.5" Bevel	Pass	Pass	Pass	Pass	Pass	Pass	<10	Ç,	93.45	DRI	v	NPS 18 XS 0 S00in WT	Неэт	BSM-1895
Condition	1300 PSI/ 5 s	ASTM	ASTM E213	WT		insp.	Gauss	μR/hr	lb/ft					
End	• •	ET	S	S	00	Visual	Res. Mag.	Geiger	Mass	Length	Pieces	Product Size	Test Type	Heat
	-		Destructive Testing	Non-Destruct	Z					The same of the sa		Product: Details	Communication of the second se	

			-	Annual Property and Address of the Owner, or other Persons of the Owner, where the Owner, while the Owner, where the Owner, while the Owner, w	Name and Address of the Owner, where the Owner, which is the O	-	Statement of the Party Steel	Name and Address of the Owner, where the Owner, which is t	The same of the sa	The second secon	B. St. Barrier and Landson and St. Barrier and	The second second second	-	The state of the s		And the second s	The state of the s
0.36	0.36	0.0005	0.001	0.001	0.003	0.03	0.01	0.08	0.04	0.23	0.008	0.007	0.91	0.19	Product	Degas, Fully willed	
,	1	0.0004				0.04	0.01	0.07	0.03	0.23	0.005	0.009	0.91	0.19	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum	BSM-1895
CE(CSA)	CE(IIW)	В	Νb	11:	<	Z.	M <sub>o</sub>	Си	Cr	Si	S	P	Mn	0	Test Type	Steelmaking Method	Heat
									(wt%)	Analysis (	Chemical						

						<b>*</b>		LANGUAGE CONTRACTOR OF THE PROPERTY OF THE PRO	Control of the Contro
47	0.58	68,000	39,600	Longitudinal; 38.1 mm x WT	Pass	74 HRBW	Ferrite & Pearlite	Heat	BSM-1895
%	(Rt0.5/Rm)	psi	psi	50mm GL					
Elongation (A)	1/4	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
				Mechanical Properties					

	BSM-1895		Heat	
	•	Standard	Test	
The state of the s		Sample Details	Impact Test	
		°C	Temp	
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Manual Company of the	,	mm		
	1	mm	Lateral E	
		mm	xpansion	
	١	AVG		

## Additional Details:

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

√ 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.

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:

(See Se) Sune.

Tonya Lam, C.E.T.

Assistant QA Manager



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**Product Markings** 

			-											
32.5° Bevel	Pass	Pass	Pass	Pass	Pass	Pass	<10	Ġ	93.45	DRL	2	NPS 18 XS 0.500in. WT	Heat	BSM-1895
5 <sub>s</sub> Conditio	1300PSI/ 5	ASTM	ASTM E213	WT		insp.	Gauss	μR/hr	lb/ft					
End	HydroTest	ဌ		T	OD	Visual	Res. Mag.	Geiger	Mass	Length	Pieces	Product Size	Test Type	Heat
			tive Testing	Non-Destructive Testin	NC					Sellusteden de emberod emplement et de l'altra des		Product: Details	and before the second s	

Product	BSM-1895 Blast Furnace; EAF; Ladle Refining; Vacuum Heat	Heat Steelmaking Method Test Type	
0.19	0.19	C	
0.91	0.91	Mn	
0.007	0.009	٥	_
0.008	0.005	S	Chemical A
0.23	0.23	Si	Analysis (
0.04	0.03	Cr	wt%)
0.08	0.07	Сп	
0.01	0.01	Ŋ o	
0.03	0.04	<u>N</u>	
0.003		<	
0.001		11	
0.001		Nb	
0.0005	0.0004	В	
0.36	ı	CE(IIW)	
0.36	ı	CE(CSA)	

					Mechanical Properties				
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	7/ү	Elongation (A)
					50mm GL	psi	psi	(Rt0.5/Rm)	%
BSM-1895	Heat	Ferrite & Pearlite	74 HRBW	Pass	Longitudinal; 38.1 mm x WT	39,600	000,89	0.58	47
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BSM-1895		Heat
_	Standard	Test
	Sample Details	Impact Test
	റ്	Temp
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1	L	Impact
	L	mpact Energy
	AVG	
,	%	
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-	mm	
ļ.	mm	Lateral Ex
	mm	xpansion
1	AVG	

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- ✓ 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.
- √ This product has not come into contact with mercury during the Bri-Steel Manufacturing processes
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Mill Test Certificate approved by:

1.600 June 17, 2014

Tonya Lam, C.E.T.

Assistant QA Manager