

Mill Test Certificate

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

Tel: 001 (780) 469-6603

Fax: 001 (780) 469-6986 www.bri-steel.com

Product: Seamless Carbon Steel Pipe Pro

Product Heat Number: BSM-1638

38 Product Size: 18XS

Production Date:

uction Date: Feb 13, 2014

Production Method: Hot Expansion

Product Heat Treatment:

As-rolled

ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-

Certificate No.: MTR- 000871

Product Standards:

Product Markings

brirkeel

HEAT BSM-1638 (PIPE # LENGTH MASS) 93.45lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA <API & L/C No.> API SPEC 5L NPS 18 XS 0.500 INCHWT GR B/X42 PSL1 SMLS 2014/02 NDE 1990PSI

	BSM-1638	Heat	
Degas, rully Nilled	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
Product	Heat	Test Type	
0.22	0.20	С	
0.90	0.89	Μn	
0.010	0.011	Р	
0.90 0.010 0.016	0.010	S	Chemical Analysis (wt%)
0.24	0.24	Si	Analysis (
0.06	0.06	Cr	wt%)
0.10	0.06	Cu	
0.01	0.01	Мо	
0.06	0.06	N:	
0.002		٧	
0.001		П	
0.001		Nb	
0.0003	0.0005	В	
0.40		CE(IIW)	
0.40	1	CE(CSA)	

	Heat		BSM-1638		Heat	
Standard	Test Standa		Heat		Test Type	
ard	1	A COLUMN TO THE PARTY OF THE PA	Ferrite & Pearlite		Microstructure	
Sample Detail:	Impact Test		te		e	
Details	t Test		75 HRBW		Hardness	
ိင	Temp		Pass		Flattening Test	
J						Mechan
ľ	Impact Energy		Longitudinal; 38.1 mm x	50	Ten	Mechanical Properties
J	Energy		al; 38.1 m	50mm GL	Tension Test	rties
AVG			m x WT			
%					Yie	
%	% Shear		44,600	psi	Yield (Rt0.5)	
%	ear		74		Tensi	
AVG			74,000	psi	Tensile (Rm)	
mm			0.60	(Rt0.5/Rm)	1/4	
mm	Lateral E			'Rm)		
mm	Lateral Expansion		44	%	Elongation (A	
AVG			-		ion (A)	

Additional Details:

BSM-1638

🗸 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 A106-2014/SA106-2013 Grade B/C A53-2012/SA53-2013, 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.

√ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2012 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:

2015 Jaw 7

Kenton Dechant, P.Eng.
Manager of Quality and R&D



Mill Test Certificate

Bri-Steel Manufacturing Inc. 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4 Tel· nn1 (780) 460-6603

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

www.brichemsteel.com

Seamless Carbon Steel Pipe **Product Heat Number:** BSM-1638 Product Size: 18 X 0.450 Production Date: Feb 13, 2014

Production Method: **Hot Expansion** Product Heat Treatment: As-rolled Certificate No.: MTR- 000879

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 Markings NPS 18 X 0.450 INCHWT SMLS 2014/02 NDE 1990PSI

ANDERSON HEAT BSM-1638 (PIPE # LENGTH MASS) 84.35lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

The second secon	The second secon						THE RESERVE THE PROPERTY OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS							
32.5° Bevel	Pass	Pass	Pass	Pass	Pass	Pass	<10	~ 5	84.35	DRL	9	NPS 18 X 0.450in. WT	Heat	BSM-1638
s Condition	1990 PSI/ 5 s		ASTM E213 ASTM	WT		Insp.	Gauss	μR/hr	lb/ft					
End	HydroTest	티	T	UT	OD	Visual	Res. Mag.	Geiger	Mass	Length	Pieces	Product Size	Test Type	Heat
			tive Testing	Non-Destructive Testing	No							Product: Details		

		BSM-1638	Heat	
	Degas, Folly Nileo	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
	Heat Product		Test Type	
000000000000000000000000000000000000000	0.22	0.20	С	
	0.90	0.89	Mn	
	0.010	0.011	P	
	0.016	0.010	S	Chemical
Commence of the Commence of th	0.24	0.24	Si	Chemical Analysis (wt%)
	0.06	0.06	Cr	wt%)
	0.10	0.06	Cu	
	0.01	0.01	Mo	
	0.06	0.06	Ni	
	0.002		٧	
	0.001		Ti	
	0.001		Nb	
	0.0003	0.0005	В	
	0.40	•	CE(IIW)	
	0.40	1	CE(CSA)	

BSM		_	
BSM-1638		Heat	
Heat		Test Type	
Ferrite & Pearlite		Microstructure	
75 HRBW		Hardness	200
Pass		Flattening Test	7
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
44,600	psi	Yield (Rt0.5)	
74,000	psi	Tensile (Rm)	
0.60	(Rt0.5/Rm)	Υ/Τ	
44	%	Elongation (A)	

BSM-1638		Heat
1	Standard	Test
ī	Sample Details	Impact Test
-	°C	Temp
	J	
i	J	Impact
1	J	Energy
-	AVG	
ı	%	
ī	%	% Shear
í	%	ear
í	AVG	
	mm	
	mm	Lateral Expansion
-	mm	pansion
-	AVG	

Additional Details:

- \checkmark 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
- \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
- ✓ 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:

10 Southern 2014 FEB 20

Paul Sowden, T.T. Assistant QA Manager