

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 Pr

Product Heat Number:

BSM-1719 Product

Product Size: 16STD

Production Date: Mar 24, 2014

Production Method: Hot Expansion Pro

Product Standards:

Product Heat Treatment: As-rolled

Certificate No.: MTR- 000983

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

Product Markings NPS 16 STD 0.375 INCHWT SMLS 2014/03 NDE

MARGE AND THE STEEL HEAT BSM-1719 (PIPE # LENGTH MASS) 62.58|

ANDURANGUERING HEAT BSM-1719 (PIPE # LENGTH MASS) 62.58lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	BSM-1719		Heat	
0.00	Heat		Test Type	
	NPS 16 STD 0.375in. WT		Product Size	Product: Details
	13		Pieces	
	DRL		Length	
	62.58	lb/ft	Mass	
(A)	<5	μR/hr	Geiger	
The second secon	<10	Gauss	Res. Mag.	
	Pass	Insp.	Visual	
A	Pass		00,	No
	Pass	TW	T	n-Destruc
	Pass	ASTM E213 ASTM	듸	Non-Destructive Testing
	Pass	ASTM	티	
	1		HydroTest	
	32.5° Bevel	Condition	End	

	BSM-1719	Heat	
Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed		Steelmaking Method	
Product	Heat	Test Type	
0.21	0.19	С	
78.0	0.86	Mn	
0.017	0.020	Р	
0.010	0.010	S	Chemical
0.24	0.23	Si	Chemical Analysis (wt%)
0.07	0.08	Cr	wt%)
0.01	0.01	Cu	
0.01		Mo	
0.05	0.05	N:	
0.002		<	
0.002		Ti	
0.001		Nb	
0.0002		В	
0.37	1	CE(IIW)	
0.37		CE(CSA)	

,		_	- 20	_
	BSM-1719		Heat	
200	Heat		Test Type	
	Ferrite & Pearlite		Microstructure	
	75 HRBW		Hardness	
	Pass		Flattening Test	
	Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
	42,600	psi	Yield (Rt0.5)	
	69,000	psi	Tensile (Rm)	
	0.62	(Rt0.5/Rm)	۲/۲	
	44	%	Elongation (A)	

BSM		
BSM-1719		Heat
1	Standard	Test
1	Sample Details	Impact Test
	°C	Temp
	ľ	
-	J	Impact
1	J	Energy
1	AVG	
=	%	
ı	%	% Shear
ı	%	near
1	AVG	
	mm	
ti	mm	Lateral Ex
E	mm	Expansion
	AVG	

Additional Details:

- \checkmark We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in meet the corresponding requirements. accordance with ASTM/ASME A/SA106-2013 Grade B A/SA53-2012, and the purchase order requirements, and that the results
- \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.
- \checkmark This product has not come into contact with mercury during the Bri-Steel Manufacturing processes
- √ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.
- *OD Tolerences as per API

Mill Test Certificate approved by:

2014 MAR 25

Paul Sowden, T.T. Assistant QA Manager



Product:

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Tel: 001 (780) 469-6603

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Seamless Carbon Steel Pipe Product Heat Number: BSM-1719 Product Size: 16 X 0.350 Production Date: Mar 24, 2014

Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000982

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

Product Markings NPS 16 x 0.350 INCHWT SMLS 2014/03 NDE

MANUFACTURING HEAT BSM-1719 (PIPE # LENGTH MASS) 58.4lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	BSM-1719		Heat	
	Heat	7	Test Type	
	NPS 16 X 0.350in. WT		Product Size	Product: Details
100 miles	13		Pieces	
	DRL		Length	
The second second second	58.4	lb/ft	Mass	
	<5	μR/hr	Geiger	
	<10	Gauss	Res. Mag.	***
	Pass	Insp.	Visual	
	Pass		0D *	No
STATE OF THE PROPERTY OF THE P	Pass	TW	TU	Non-Destructive Testing
	Pass	ASTM E213 ASTM	TU	tive Testing
	Pass	ASTM	日	
	ı		HydroTest	
	32.5° Bevel	Condition	End	

		BSM-1719	Heat	
and the control of th	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed		Steelmaking Method	
	Product	Heat	Test Type	
	ct 0.21	0.19	С	
	0.87	0.86	Mn	
	0.017	0.020	Р	
	0.010	0.010	S	Chemical
	0.24	0.23	Si	Chemical Analysis (wt%)
	0.07	0.08	Cr	wt%)
	0.01	0.01	Cu	
	0.01		Mo	
	0.05	0.05	N;	
	0.002		٧	
	0.002		Ti	
	0.001		Nb	
	0.001 0.0002		В	
	0.37	1	CE(IIW)	
	0.37	1	CE(CSA)	

9.	_			_
	BSM-1719		Heat	
	Heat	T:	Test Type	
	Ferrite & Pearlite	and the state of t	Microstructure	
	75 HRBW		Hardness	
	Pass		Flattening Test	
	Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
9890	42,600	psi	Yield (Rt0.5)	
0.0000000000000000000000000000000000000	69,000	psi	Tensile (Rm)	
	0.62	(Rt0.5/Rm)	Υ/τ	
200 CON	44	%	Elongation (A)	

BSM-1719		Heat
	Standard	Test
L	Sample Details	Impact Test
ř.	°C	Temp
t	J	
-	ľ	Impact
ı	Ĺ	Energy
t	AVG	
-	%	
10	%	% Shear
ľ	%	iear
·	AVG	
-	mm	
ı	mm	Lateral Expansion
ı	mm	cpansion
E	AVG	

Additional Details:

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- "OP Tolerances as per API

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Paul Sowden, T.T.
Assistant QA Manager