

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 Size: 16STD Production Date: Mar 20, 2014

Certificate No.: MTR- 000974

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 Heat Treatment:

As-rolled

Production Method:

Hot Expansion

Product:

Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1713

Product Markings | NBRI-STEEL | NPS 16 STD 0.375 INCHWT SMLS 2014/03 NDE

ANUIZABIUEINIBINIBI HEAT BSM-1713 (PIPE # LENGTH MASS) 62.58lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	BSM-1713	Heat		BSIVI-1/13
-	13 B	Ĺ		
Blast Furnace; EAF Degas; Fully Killed		Stee		неат
	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method		NPS 16 SID 0.37SIN. WI 5 DRL
Product	Heat	Test Type		W
0.22	0.20	С		5
0.88	0.85	Mn		
Product 0.22 0.88 0.015 0.011 0.26 0.07	0.20 0.85 0.020 0.010 0.23 0.07	P		62.58 <5 <10
0.011	0.010	S	Chemical Analysis (wt%)	^ 5
0.26	0.23	Si	\nalysis (\	^
0.07	0.07	Cr	wt%)	10
0.01	0.01	Cu		Pass
0.01		Mo		Pass
0.05	0.05	Ni		Pass
0.003		٧		Pass
0.002		Ti		SS
0.001		Nb		Pass
0.003 0.002 0.001 0.0002 0.39 0.39		В		
0.39	t	CE(IIW)		į,
0.39	-	CE(CSA)		32.5° Bevel

BSM-1713		Heat	
Heat		Test Type	
Ferrite & Pearlite		Microstructure	
77 HRBW		Hardness	
Pass		Flattening Test	
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
42,900	psi	Yield (Rt0.5)	
72,000	psi	Tensile (Rm)	
0.60	(Rt0.5/Rm)	Τ/Υ	
41	%	Elongation (A)	

BSM-1713		Heat
1	Standard	Test
t	Sample Details	Impact Test
	°C	Temp
ı	J	
ı	_	Impact
1	J	Energy
-	AVG	
1	%	
1	%	% Shear
1	%	lear
1	AVG	
1	mm	5
1	mm	Lateral Expansion
1	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 accordance with 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.
- √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 MAR 25

Paul Sowden, T.T. Assistant QA Manager



Mill Test Certificate

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

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

Product: Seamless Carbon Steel Pipe

Hot Expansion

Product Heat Number:

BSM-1713 Product Size: 16 X 0.350

Production Date: Mar 20, 2014

Certificate No.: MTR- 000977

Product Heat Treatment: As-rolled

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

Product Standards: Production Method:

MBRI-STEEL] NPS 16 X 0.350 INCHWT SMLS 2014/03 NDE

HEAT BSM-1713 (PIPE # LENGTH MASS) 58.4lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	BSM-1713		Heat	
	Heat		Test Type	
	NPS 16 X 0.350in. WT		Product Size	Product: Details
	5		Pieces	
25, 580	DRL		Length	
	58.4	lb/ft	Mass	
	<5	μR/hr	Geiger	
	<10	Gauss	Res. Mag.	
	Pass	Insp.	Visual	
	Pass		OD	No
	Pass	TW	TU	on-Destruc
	Pass	ASTM E213 ASTM	UT	Non-Destructive Testing
	Pass	ASTM	ET	
	-		HydroTest	
-	32.5° Bevel	Condition	End	

	1	_	-	_	_
			BSM-1713		
	Cagas, Fully Silled	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method		
		Product	Heat	Test Type	
		0.22	0.20	С	
		0.88	0.85	Mn	
		0.015 0.011 0.26	0.020 0.010 0.23	Р	
Mechanic		0.011	0.010	S	Chemical Analysis (wt%)
Mechanical Properties			0.23	Si	Analysis (
ties		0.07	0.07	Cr	wt%)
		0.01	0.01	Сп	
	0.01		Мо		
	0.05	0.05	N.		
	0.003		<		
	0.002		T		
		0.001		Nb	
		0.0002 0.39		В	
		0.39	ı	CE(IIW)	
		0.39	ı	CE(CSA)	

	BSM-1713		Heat	
	Heat		Test Type	
	Ferrite & Pearlite		Microstructure	
	77 HRBW		Hardness	
	Pass		Flattening Test	
	Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
	42,900	psi	Yield (Rt0.5)	
100 Co. 100 Co	72,000	psi	Tensile (Rm)	
	0.60	(Rt0.5/Rm)	۲/۲	
	41	%	Elongation (A)	

BSM-1713		Heat
1	Standard	Test
1	Sample Details	Impact Test
1	°C	Temp
ľ	J	
ı	J	Impact
ı	J	Energy
î.	AVG	
-	%	
t	%	% Sh
1	%	Shear
-	AVG	
	mm	
ľ	mm	Lateral Ex
ı	mm	xpansion
	AVG	

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- \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.
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