

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-1715

Product Size: 16STD

Production Date:

Mar 20, 2014

Production Method: **Hot Expansion**

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

Certificate No.: MTR- 000975

Product Markings

Product Standards:

NBRI-STEEL] NPS 16 STD 0.375 INCHWT SMLS 2014/03 NDE

ANNUASSIGENEE HEAT BSM-1715 (PIPE # LENGTH MASS) 62.58lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	В			Г
	BSM-1715		Heat	
	Heat		Test Type	
	NPS 16 STD 0.375in. WT		Product Size	Product: Details
	6		Pieces	
	DRL		Length	
Control Common Control	62.58	lb/ft	Mass	
00 00 00 00	<5	μR/hr	Geiger	
	<10	Gauss	Res. Mag.	
	Pass	Insp.	Visual	
	Pass		OD#	No
	Pass	WT	T	n-Destruc
	Pass	ASTM E213 ASTM	UT	Non-Destructive Testing
	Pass	ASTM	ET	
	i	3	HydroTest	
	32.5° Bevel	Condition	End	

Degas, rully nilled	BSM-1715 Blast Furnace; EAF; Ladle Refining; Vacuum	Heat Steelmaking Method		
Product	Heat	Test Type		
0.22	0.20	С		
0.87	0.85	Mn		
0.027	0.020	Р		
0.020	0.010	S	Chemical Analysis (wt%)	
0.24	0.23	Si	Analysis (ı	
0.10	0.07	Cr	wt%)	
0.01	0.01	Cu		
0.01		Mo		
0.06	0.05	Ni		
0.003		٧		
0.003 0.001 0.0004		Ti		
0.001		Nb		
0.0004		В		
0.39		CE(IIW)		
0.39	r	CE(CSA)		

BSM-1715		Heat	
715			
Heat		Test Type	
Ferrite & Pearlite		Microstructure	
76 HRBW		Hardness	
Pass		Flattening Test	_
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
41,900	psi	Yield (Rt0.5)	
71,500	psi	Tensile (Rm)	
0.59	(Rt0.5/Rm)	۲/۲	
43	%	Elongation (A)	

BSM-1715		Heat
1	Standard	Test
The state of the s	Sample Details	Impact Test
ı	°C	Temp
,	J	
,	J	Impact
ı	J	Energy
ı	AVG	
ī	%	
,	%	% Shear
	%	ear
٠	AVG	
1	mm	
	mm	Lateral Expansion
-	mm	pansion
,	AVG	

Additional Details:

- 🗸 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.
- \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 par Apl

Mill Test Certificate approved by:

2014 MAR 25

Paul Sowden, T.T. Assistant QA Manager



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

BSM-1715 Product Size: 16 X 0.350 Production Date: Mar 20, 2014

Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000976

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:

Product:

Seamless Carbon Steel Pipe

Product Heat Number:

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

HEAT BSM-1715 (PIPE # LENGTH MASS) 58.4lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

32.5° Bevel		Pass	Pass	Pass	Pass	Pass	<10	Ġ	58.4	DRL	6	NPS 16 X 0.350in. WT	Heat	BSM-1715
Condition		ASTM	ASTM E213 ASTM	WT		Insp.	Gauss	μR/hr	lb/ft					
End	HydroTest	田	디	TU	OD	Visual	Res. Mag.	Geiger	Mass	Pieces Length	Pieces	Product Size	Test Type	Heat
			ive Testing	Non-Destructive Testing	N		2000					Product: Details		

		BSM-1715	Heat	
	Degas; Fully Killed		Steelmaking Method	
	Product	Heat	Test Type	
	t 0.22	0.20	С	
	0.87	0.85	Mn	
	0.027	0.020 0.010	P	
	0.87 0.027 0.020	0.010	S	Chemical
	0.24	0.23	Si	Chemical Analysis (wt%)
	0.10	0.07	Cr	wt%)
	0.01	0.01	Cu	
	0.01		Mo	
	0.06	0.05	N:	
	0.003		٧	
-	0.003		Ti	
	0.001		Nb	
	0.001 0.0004		В	
100000	0.39	,	CE(IIW)	
	0.39	ı	CE(CSA)	

BSM-1715		Heat		
Heat		Test Type		
Ferrite & Pearlite		Microstructure		
76 HRBW		Hardness		
Pass		Flattening Test		
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties	
41,900	psi	Yield (Rt0.5)		
71,500	psi	Tensile (Rm)		
0.59	(Rt0.5/Rm)	۲/۲		
43	%	Elongation (A)		

1			\vdash	1	1	1	1
% %	% % %	% % % AV	% % % AVG	% % % AVG mm	mm		mm
	% Shear	% Shear	% Shear	% Shear			% Shear Lateral Expansion

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:

2014 MAR 25

Paul Sowden, T.T. Assistant QA Manager