

Mill Test Certificate

2125-64 Avenue, Edmonton, AB Canada T6P 124 Bri-Steel Manufacturing

Tel: 001 (780) 469-6603

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

Product Size: NPS 14 TRUE 40 Production Date: Feb 28, 2014

ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012 **Product Heat Treatment:** ThermoMechanical Formed Certificate No.: MTR- 002058

Product Markings

Product Standards: Production Method: Product:

Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1679

Hot Expansion

NPS 14 TRUE 40 0.438 INCHWT SMLS 2014/02 NDE

HEAT BSM-1679 (PIPE # LENGTH MASS) 63.67/b/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

		Product: Details							Z	on-Destruc	Non-Destructive Testing			
Heat	Test Type	Product Size	Pieces Length	Length	Mass	Geiger	Res. Mag.	Visual	OD	TT	UT	ET	HydroTest	End
					lb/ft	µR/hr	Gauss	Insp.		TW	ASTM E213 ASTM E309	ASTM E309		Condition
BSM-1679	Heat	NPS 14 TRUE 40 0.438in. WT	7	DRL	63.67	Ġ	<10	Pass	Pass	Pass	Pass	Pass	1	34° Bevel
					유	Chemical Analysis (wt%)	lysis (wt%)		of state of the second sta	0.000				
				*	•			Andrew of the Party of the Part						***************************************

BSM-1679 Heat Degas; Fully Killed Blast Furnace; EAF; Ladle Refining; Vacuum Steelmaking Method Test Type Product Heat 0.22 0.23 0.86 0.87 Mn 0.016 0.011 0.005 0.004 0.25 0.24 S 0.07 0.07 9 0.07 0.06 5 0.02 0.02 Z o 0.04 0.05 Z 0.003 < 0.001 ∄ 0.001 8 0.0003 0.0004 œ CE(IIW) | CE(CSA) 0.40 0.39 0.41 0.40

BSM-1679		Heat	
679		-	
Heat		Test Type	
Ferrite & Pearlite		Microstructure	
78 HRBW		Hardness	
Pass		Flattening Test	
Longitudinal; 1.5 in. x WT	2 in. GL	Tension Test	Mechanical Properties
43,600	psi	Yield (Rt0.5)	
73,500	psi	Tensile (Rm)	
0.59	(Rt0.5/Rm)	۲/۲	
41	%	Elongation (A)	

BSM-1679		Heat
	Standard	Test
The state of the s	Sample Details	Impact Test
,	റ്	Temp
1	_	
,	Ĺ	Impact
,	٦	Energy
1	AVG	
,	%	
,	%	% Shear
1	%	ear
,	AVG	
	mm	
,	mm	Lateral Expansion
-	mm	pansion
ı	AVG	

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A106-2014/SA106-2013, 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, API Q1, and PED 97/23/EC.

 \checkmark This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service , and NACE MR0103-2012 Section 2.1

No weld repairs have been performed on this product.

 \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1. \prime This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

Mill Test Certificate approved by:

1 Lam

Tonya Lam, C.E.T.

Assistant QA Manager



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.brichemsteel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1679 Product Size: 14XS

Production Date: Feb 28, 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- 000928

Product Standards:

Product Markings

NPS 14 XS 0.500 INCHWT SMLS 2014/02 NDE

EXECUTATION
HEAT BSM-1679 (PIPE # LENGTH MASS) 72.09Ib/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	BSM-1679 Heat NPS 14 X		Heat Test Type Pro	
	NPS 14 XS 0.500in. WT		Product Size F	Product: Details
	7		Pieces	
	DRL		Length	
	72.09	lb/ft	Mass	
	<5	µR/hr	Geiger	
	<10	Gauss	Res. Mag.	
	Pass	Insp.	Visual	
	Pass		9	N
	Pass	TW	T	on-Destruc
200	Pass	ASTM E213 ASTM	UT	Non-Destructive Testing
	Pass	ASTM	ET	
	•		HydroTest	
	34° Bevel	Condition	End	

		BSM-1679	Heat	
	Cegas, cost succe		t Steelmaking Method	
and the second s	Product	Heat	Test Type	
	0.22	0.23	C	
	0.86	0.87	Mn	
	0.016	0.011	þ	
	0.005	0.004	S	Chemical
	0.25	0.24	Si	Chemical Analysis (wt%)
	0.07	0.07	Cr	wt%)
STATE OF THE PERSON NAMED IN	0.07	0.06	Cu	
AND ACCORDING OF A COLUMN	0.02	0.02	Mo	
	0.04	0.05	<u>≅</u> .	
	0.003		<	
	0.001		7	
	0.001		Nb	
	0.0003	0.0004	В	
	0.39	,	CE(IIW)	
	0.39	1	CE(CSA)	

					Mechanical Properties				
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Τ/Υ	Elongation (A)
					50mm GL	psi	psi	(Rt0.5/Rm)	%
BSM-1679	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 38.1 mm x WT	43,600	73,500	0.59	41
			The second secon	The second secon					The second secon

BSM-1679		Heat
-	Standard	Test
·	Sample Details	Impact Test
	റ്	Temp
1	ſ	
ı	L	Impact E
1	٠	Energy
1	AVG	
1	%	
١	%	% SI
,	%	Shear
í	AVG	
1	mm	Latera
;	mm	Lateral Ex
,	mm	pansion
,	AVG	

Additional Details:

✓ 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.

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Mill Test Certificate approved by:

2014 MAR 9

as Jamos

Paul Sowden, T.T. Assistant QA Manager