

Product:

Seamless Carbon Steel Pipe

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.brichemsteel.com

Product Heat Number: BSM-1447 Product Size: 20 STD Production Date: Nov 27, 2013

Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000647

Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings | CAPI> 5L-0898 API SPEC 5L NPS 20 STD 0.375 INCHWT GR B PSL1 SMLS 2013/11 NDE 1000PSI <u>элиглениялиен</u> HEAT BSM-1447 (PIPE # LENGTH MASS) 78.6ib/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1447		Heat	
Heat		Test Type	
NPS 20 STD 0.375in. WT		Product Size	Product: Details
5		Pieces	
DRL		Pieces Length	
78.6	lb/ft	Mass	
<5	μR/hr	Geiger	
<10	Gauss	Res. Mag.	
Pass	Insp.	Visual	7000
Pass		OD	No
Pass	WT	TU	n-Destruct
Pass	ASTM E213 ASTM	TU	Non-Destructive Testing
Pass	ASTM	ET	
Pass	1000 PSI/ 5 s	HydroTest	
32.5° Bevel	5 _S Condition	End	

		BSM-1447	Heat	
	begas, rany nineo		t Steelmaking Method	
	Product	Heat	Test Type	
	0.23	0.19	С	
	0.97	0.90	Mn	
	0.027 0.011	0.90 0.024 0.009	Р	
	0.011	0.009	S	Chemical Analysis (wt%)
	0.26	0.23	Si	Analysis (
100	0.08	0.08	Cr	wt%)
	0.01	0.01	Cu	
	0.00		Mo	
	0.04	0.04	Ni	
	0.005		٧	
Contract Contract	0.003		Ti	
	0.001		dN	
	0.0004		В	
	0.41	1	CE(IIW)	
	0.41	-	CE(CSA)	

	BSM-1447		Heat	
	47			
	Heat		Test Type	
	Ferrite & Pearlite		Microstructure	
	76 HRBW		Hardness	
	Pass		Flattening Test	-
	Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
	45,200	psi	Yield (Rt0.5)	
Tanana III	73,500	psi	Tensile (Rm)	
Commence of the contract of th	0.61	(Rt0.5/Rm)	Υ/Τ	
	42	%	Elongation (A)	

BSM-1447		Heat
1	Standard	Test
Ī	Sample Details	Impact Test
-	°C	Temp
1	Ĺ	
,	J	Impact
ı	J	Energy
1	AVG	
-	%	
	%	% Shear
-	%	ear
1	AVG	
1	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 and that the results meet the corresponding requirements. accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2011 Grade B/C A/SA53-2012, and the purchase order 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:

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Paul Sowden, T.T.

Assistant QA Manager



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

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Product: Seamless Carbon Steel Pipe

Production Method:

Hot Expansion

Product Heat Number:

BSM-1447 Product Size: 20 STD

Production Date: Nov 27, 2013

As-rolled

Certificate No.: MTR- 000649

Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Heat Treatment:

Product Markings BRI-STEEL NPS 20 STD 0.375 INCHWT SMLS 2013/11 NDE 1000PSI

UZASTURINGING HEAT BSM-1447 (PIPE # LENGTH MASS) 78.6lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1447		Heat	
Heat		Test Type	
NPS 20 STD 0.375in. WT		Product Size	Product: Details
5		Pieces	
DRL		Length	
78.6	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	
Pass	1000 PSI/ 5 s Condition	HydroTest	
32.5° Bevel	s Condition	End	

	BSM-1447	Heat	
Coop, only mines	.7 Blast Furnace; EAF; Ladle Refining; Vacuum Degac: Fully Killed	Steelmaking Method	
Product	Heat	Test Type	
0.23	0.19	C	
0.97	0.90	Mn	
0.027	0.024	P	
0.011	0.009	S	Chemical
0.26	0.23	Si	Chemical Analysis (wt%)
0.08	0.08	Cr	wt%)
0.01	0.01	Cu	
0.00		Mo	
0.04	0.04	N:	
0.005		٧	
0.003		Ti	
0.001		Nb	
0.0004		В	
0.41	1	(WII)30	
0.41	ı	CE(CSA)	

BSN	Ι		
BSM-1447		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
45,200	psi	Yield (Rt0.5)	
73,500	psi	Tensile (Rm)	
0.61	(Rt0.5/Rm)	Τ/Υ	
42	%	Elongation (A)	

	BSM-1447		Heat
	1	Standard	Test
	ı	Sample Details	Impact Test
	1	°C	Temp
	1	_	
	r	ے	Impact E
	t	_	Energy
		AVG	
	t	%	
	t	%	% Shea
		%	ear
	1	AVG	
	1	mm	
STATE OF THE PROPERTY OF THE PARTY OF THE PA	1	mm	Lateral Ex
The state of the s	ı	mm	xpansion
4500000 CT	5 1 %	AVG	

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