

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

Seamless Carbon Steel Pipe

Production Method:

Hot Expansion

Product Heat Number:

BSM-1570 Product Size: 20 X

Production Date: Jan 27, 2014

Product Heat Treatment: As-rolled

Certificate No.: MTR- 000804

Product Standards: ASME B36.10-2004, API 51-45th 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> 51-0898 API SPEC 5L NPS 20 X 0.450 INCHWT GR B PSL1 SMLS 2014/01 NDE 1200PSI HEAT BSM-1570 (PIPE # LENGTH MASS) 93.69lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

		Product: Details							N	Non-Destruct	ive Testing			
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	G G	TU	UT	ET	HydroTest	End
					lb/ft	μR/hr	Gauss	Insp.		ΥT	ASTM E213	ASTM	1200 PSI/ 5	s Condition
BSM-1570	Heat	NPS 20 X 0.450in. WT	9	DRL	93.69	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	34° Bevel

		-					1				-						
0.39	0.39	0.0003	0.001	0.003	0.002	0.04	0.00	0.06	0.07	0.26	0.014	0.019	0.89	0.22	Product	or Book a park white a	
•	1					0.04		0.01	0.05	0.22	0.010	0.015	0.83	0.19	Heat	Blast Furnace; EAF; Ladle Refining; Vacuum	BSM-1570
CE(CSA)	CE(IIW)	В	Nb	Ti	<	Z	Mo	Си	Cr	Si	S	70	Mσ	0	Test Type	Steelmaking Method	Heat
									(wt%)	Chemical Analysis (wt%	Chemical		And the second s				

BSM-157(Heat	
70 Heat		t Test Type	
_		pe	
Ferrite & Pearlite		Microstructure	
76 HRBW		Hardness	
Pass		Flattening Test	
Longitudinal; 38.1 mm x WT	50mm GL	Tension Test	Mechanical Properties
44,000	psi	Yield (Rt0.5)	
73,000	psi	Tensile (Rm)	
0.60	(Rt0.5/Rm)	1/4	
45	%	Elongation (A)	

													***************************************	Application to the second seco
ı		ı	,		ì		1	,			,		ş	BSM-1570
mm	-	mm	AVG	%	%	%	AVG	_	J	_	റ്	Sample Details	Standard	
Lateral Expansion				% Shear	% St			Energy	Impact		Temp	Impact Test	Test	Heat

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2011 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.

 \checkmark 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 JAN30

Assistant QA Manager Paul Sowden, T.T.



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Seamless Carbon Steel Pipe

Hot Expansion

Product Heat Number:

BSM-1570 Product Size: 20 XS

Production Date: Jan 27, 2014

As-rolled

Certificate No.: MTR- 000796

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 Heat Treatment:

Product Markings

Product Standards: Production Method:

BSM-1570

Heat

NPS 20 XS 0.500in, WT

ø

DRL

104.1

S

^10

Pass

Pass

Pass

Pass

Pass

Pass

34° Bevel

Heat Test Type API> STEEL SAPI> SL-0898 API SPEC SL NPS 20 XS 0.500 INCHWT GR B PSL1 SMLS 2014/01 NDE 1200PSI

***REPRESENTATION HEAT BSM-1570 (PIPE # LENGTH MASS) 104.11b/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA **Product Size Product: Details** Pieces Length Mass lb/ft µR/hr Geiger Res. Mag. Gauss Visual Insp. 90 Non-Destructive Testing ¥ 5 ASTM E213 ASTM ET 1200 PSI/ HydroTest Ş Condition End

	BSM-157	Heat	
	J	e t	
Choose and water	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
Product	Heat	Test Type	
0.22	0.19	C	
0.89	0.83	Σ	
0.019	0.015	ס	
 0.014	0.010	s	Chemical Ar
0.26	0.22	S	nalys
0.07	0,05	כר	is (wt%)
0.06	0.01	Cu	
0.00		Mo	
0.04	0.04	Z.	
0.002		٧	
0.003		П	
0.001		Иb	
0.0003		В	
0.39	,	CE(IIW)	
0.39		CE(CSA)	

73,000 Pass Longitudinal; 38.1 mm x W 1 44,000 73,000	Cost Country Property 70 Indian	50mm GL psi	Test Type Microstructure Hardness Flattening Test Tension Test Yield (Rt0.5) Tell Psi Somm GL Psi Tension Test Somm GL Psi Som
44,000 73,00		Yield (Rt0.5) Tensile	
0.60	(Rt0.5/Rm)	(Rm) Y/T	
45	%	Elongation (A)	

BSM-1570		Heat
ŧ	Standard	Test
To the state of th	Sample Details	Impact Test
•	റ്	Temp
	_	
	_	Impact
,	_	Energy
	AVG	
1	%	
	%	% Shear
1	%	ear
	AVG	
	mm	
,	mm	Lateral Ex
1	mm	pansion
,	AVG	

Additional Details:

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- √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
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- \checkmark 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 JAN 29

Paul Sowden, T.T.

Assistant QA Manager