

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-1884 Product Size: 18S60

Production Date: Jun 10, 2014

Hot Expansion Product Heat Treatment: As-rolled

Certificate No.: MTR- 001174

ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, 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:

API & L/C No. > API SPEC 5L NPS 18 SCH 60 0.750 INCHWT GR B PSL1 SMLS 2014/06 NDE 2000PSI HEAT BSM-1884 (PIPE # LENGTH MASS) 138.2Ib/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

BSM-1884		Heat	
Heat		Test Type	
NPS 18 SCH 60 0.750in. WT		Product Size	Product: Details
∞		Pieces	
DRL		Length	
138.2	lb/ft	Mass	
Ġ.	µR/hr	Geiger	
<15	Gauss	Res. Mag.	
Pass	Insp.	Visual	
Pass		OD	No
Pass	WT	TU	Non-Destructive
Pass	ASTM E213	TU	tive Testing
Pass	ASTM	ET	
Pass	2000 PSI/ 5:	HydroTest	
Plain End	s Condition	End	

Mo		BSM-1884 Heat 0.18 0.90 0.011 0.006 0.22 0.05 0.01 0.04	Heat Steelmaking Method Test Type C Mn P S Si Cr Cu Mo Ni	Chemical Analysis (wt%)
			Si Cr	nalysis (wt%)
		-	Cr	(wt%)
	0.04		N.	
z			٧	
Ni <			Ti	
Ni V Ti			NP	
Ni V Ti Nb	0 000		В	
Ni V Ti Nb B	85.0	•	CE(IIW)	
NI V TI Nb B CE(IIW)	0 20	r	CE(CSA)	

Name and Address of the Owner, where the Owner, which is the Owner,	COLUMN TO THE PERSON NAMED IN COLUMN								
	0.66	72,500	47,900	Longitudinal; 38.1 mm x WT	Pass	78 HRBW	Ferrite & Pearlite	Heat	BSM-1884
	(Rt0.5/Rm)	psi	psi	50mm GL					
EIC	۲/۲	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
				Mechanical Properties	7				

Heat	Test	Impact Test	Temp		Impact	Energy			% Shea	near .			Lateral E	pansion	
	Standard	Sample Details	റ്	L	J	_	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-1884	,	į	,						·			1	ı	,	ı

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/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

Mill Test Certificate approved by:

✓ No weld repairs have been performed on this product.

√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

√ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

 \checkmark This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

Tonya Lam, C.E.T.

mare.

Assistant QA Manager



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Production Method:

Hot Expansion

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Product Heat Treatment:

As-rolled

Product Size: 18560

Production Date: Jun 10, 2014

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Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings | API & L/C No. > API SPEC 5L NPS 18 SCH 60 0.750 INCHWT GR B PSL1 SMLS 2014/06 NDE 2000PSI ILEANUARIO HEAT BSM-1884 (PIPE # LENGTH MASS) 138.2lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

	<u></u>			_
	BSM-1884		Heat	
	Heat		Test Type	
	NPS 18 SCH 60 0.750in. WT		Product Size	Product: Details
	8		Pieces	
	DRL		Length	
	138.2	lb/ft	Mass	
	\$	μR/hr	Geiger	
	<15	Gauss	Res. Mag.	
	Pass	Insp.	Visual	
	Pass		OD	N
	Pass	WT	ΤU	Non-Destructive Testing
	Pass	ASTM E213 ASTM	디	tive Testing
7.00	Pass	ASTM	ET	
	Pass	2000 PSI/	HydroTest	
		5 5	# —	
	Plain End	5 ₅ Condition	End	

Chemical Analysis (wt%)

Т				ı		m	_
		Heat				BSM-1884	Heat
		Test Type					Steeln
		Microstructure					Steelmaking Method
		Harc			Product 0.21 0.93 0.013 0.011 0.23	Heat	Test Type
		Hardness			0.21	0.18	C
		Flatter			0.93	0.90	Mn
		Flattening Test			0.013	0.90 0.011 0.006 0.22	Р
Ī			Mechani		0.011	0.006	S
	50	Ten	Mechanical Properties		0.23	0.22	Si
	50mm GL	Tension Test	ties		0.05 0.01	0.05	ርና
					0.01	0.01	Си
		Yie			0.01		Mo
	psi	Yield (Rt0.5)			0.04	0.04	Z.
†	-	Tensil			0.002		٧
	psi	Tensile (Rm)			0.002		Ti
-	(Rt0.5/Rm)	۲,۲			0.002 0.002 0.001 0.0004 0.38 0.38		Nb
-	Rm)				0.0004		8
	%	Elongation (A)			0.38		CE(IIW) CE(CSA
	. 10	on (A)			0.38	1	CE(CSA)

BSM-1884 -	Standard	Heat Test
*	Sample Details	Impact Test
,	റ്	Temp
	l J	
-	ĵ	Impact E
,	٦	Energy
1	AVG	
	%	
,	%	% Shear
t	%	ear
	AVG	
	mm	
1	mm	Lateral Expan
ī	mm	pansion
ŧ	AVG	

Additional Details:

BSM-1884

Heat

Ferrite & Pearlite

78 HRBW

Pass

Longitudinal; 38.1 mm x WT

47,900

72,500

0.66

47

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Assistant QA Manager



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Product Markings

		Product: Details							N	n-Destruc	Non-Destructive Testing			
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	8	T	UT	ET	HydroTest	End
					lb/ft	µR/hr	Gauss	insp.		¥	ASTM E213 ASTM	ASTM	2000PSI/ 5 s	s Condition
BSM-1884	Heat	NPS 18 SCH 60 0.750in. WT	8	DRL	138.2	δ.	<15	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

0.38	0.38	0.0004	0.001	0.002	0.002	0.04	0.01	0.01	0.05	0.23	0.011	0.013	0.93	0.21	Product		
ı	ŧ					0.04		0.01	0.05	0.22	0.006	0.011	0.90	0.18	Heat		BSM-1884
CE(COA)	CE(HVV)	0	140	=		-	1410	2	2	2	,	-		-	1		
CEICEN	CELINAN	0	N.F.	7.	\ \	N:	Mo	2	7	<u>.</u>	<u>_</u>	ס	3	0	Test Type	Steelmaking Method	Heat
									M(20)	CHETHICAL AHAIYSIS (WC%	Cirellical						

					Mechanical Properties				
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	Υ/τ	Elongation (A)
					50mm GL	psi	psi	(Rt0.5/Rm)	%
BSM-1884	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 38.1 mm x WT	47,900	72,500	0.66	47

8SM-1884	2000	Heat
	Standard	Test
*	Sample Details	Impact Test
1	ຕິ	Temp
	_	
,	_	Impac
•	<u></u>	t Energy
,	AVG	
t	 *	
	%	% S
ı	%	% Shear
1	AVG	
,	mm	
	3	Lateral E
ı	 mm	xpansion
ı.	AVG	

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