

Mill Test Certificate

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

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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-1306

Product Size: 18 STD

Production Date:

Oct 09, 2013

Production Method: Hot Expansion

Product Markings

Product Heat Treatment:

As-rolled

Certificate No.: MTR- 000520

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

| API-STEEL | API > 5L-0898 API SPEC 5L NPS 18 STD 0.375 INCHWT GR B PSL1 SMLS 2013/10 NDE 1000PSI

HEAT BSM-1306 (PIPE # LENGTH MASS) 70.59lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

Heat Test Type Product Size Pieces Length Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest End lb/ft μR/hr Gauss Insp. WT ASTM E213 ASTM 1000 PSI/ 5 s Condition BSM-1306 Heat NPS 18 STD 0.375in. WT 4 DRL 70.59 <5 <10 Pass Pass Pass Pass Pass Pass S2.5° Bevel			_		_
Product: Details Product Size Pieces Piece		BSM-1306		Heat	
S Pieces Length Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest Ib/ft μR/hr Gauss Insp. WT ASTM E213 ASTM 1000 PSi/ 5 s 4 DRL 70.59 <5 <10 Pass Pass Pass Pass Pass Pass Pass Pas		Heat		Test Type	
Length Mass Geiger lb/ft Res. Mag. pl/hr Visual lb/ft OD lt lb/ft UT lt lt lt/lt/lt/lt/lt/lt/lt/lt/lt/lt/lt/lt/lt/l		NPS 18 STD 0.375in. WT		Product Size	Product: Details
Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest Ib/ft μR/hr Gauss Insp. WT ASTM E213 ASTM 1000 PSI/ 5 s 70.59 <5 <10 Pass Pass Pass Pass Pass Pass Pass		4		Pieces	
Non-Destructive Testing Geiger μR/hr Res. Mag. Visual μR/hr OD UT UT ASTM E213 ET HydroTest ASTM 1000 PSI/ 5 s <5		DRL		Length	
Non-Destructive Testing Non-Destructive Testing UT Insp. WT ASTM E213 ASTM 1000 PSI/ 5 s Pass	오	70.59	lb/ft	Mass	
Non-Destructive Testing Non-Destructive Testing UT Insp. WT ASTM E213 ASTM 1000 PSI/ 5 s Pass	nemical Analysis (wt%)	<5	μR/hr	Geiger	
Non-Destructive Testing OD UT UT ET HydroTest WT ASTM E213 ASTM 1000 PSi/ 5 s Pass Pass Pass Pass Pass		<10	Gauss	Res. Mag.	
-Destructive Testing UT UT WT ASTM E213 Pass		Pass	Insp.	Visual	
-Destructive Testing UT UT WT ASTM E213 Pass		Pass		OD	Z
ET HydroTest 13 ASTM 1000PSI/ 5 s Pass Pass		Pass	WT	디	on-Destruc
ET HydroTest ASTM 1000PSI/ 5 s Pass Pass		Pass	ASTM E213	TU	tive Testing
HydroTest End 1000 PSI/ 5 s Condition Pass 32.5° Bevel			l	ET	
End S Condition 32.5° Bevel		Pass	1000 PSI/ 5	HydroTest	
		32.5° Bevel	S Condition	End	

							TIEITICAL	CHEHILAI AHAIYSIS (WL%)	A (/o /									
Heat	Steelma	Steelmaking Method	Test Type	С	Mn	Р	S	Si	Cr	Cu	Mo	N:	٧	Ti	Мb	В	CE(IIW) CE(CSA)	CE(CSA)
BSM-1306	Blast Furnace; EAF;	Blast Furnace; EAF; Ladle Refining; Vacuum	Heat	0.20	0.91	0.010	0.010	0.25	0.04	0.06	0.01	0.04				0.0004	-	ı
	Degas, rully Nilled		Product 0.22	0.22	0.89	0.012 0.013	0.013	0.25	0.04	0.07	0.01	0.04	0.003	0.001 0.001	0.001	0.0001	0.0001 0.39 0.39	0.39
							Mechanio	Mechanical Properties	ties									
Heat	Test Type	Microstructure	Harc	Hardness	Flatten	Flattening Test		Tens	Tension Test		Yield	Yield (Rt0.5)	Tensile (Rm)	(Rm)	T/Y	10	Elongation (A)	эn (A)
								50r	50mm GL			psi	psi	<u>~</u>	(Rt0.5/Rm	Э)	%	
BSM-1306	Heat	Ferrite & Pearlite	77 H	77 HRBW	Pa	Pass	لو	Longitudinal; 38.1 mm x WT	; 38.1 mn	n x WT	4	47,900	72,500	000	0.66		43	

BSM-1306		Heat	
1	Standard	Test	
	Sample Details	Impact Test	
	°C	Temp	
	Į		
1	J	Impact	
	J	Energy	
1	AVG		
-	%		
ı	%	% Shear	
•	%	ear	
-	AVG		
	mm		
	mm	Lateral Ex	
	mm	xpansion	
ı	AVG		

Additional Details:

- 🗸 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,
- \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
- \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

2013 OCT 21

Assistant QA Manager Paul Sowden, T.T.