

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:

Product Heat Number:

BSM-1128

Product Size:

NPS 18 TRUE80

Production Date: August 5, 2013

Hot Expansion Product Heat Treatment: As-rolled

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

Product Markings: BRI-STEEL MFG ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 18 TRUE80 0.94 inchWT HEAT BSM-1128 (PIPE # LENGTH MASS) 170.8lb/ft NDE SMLS NACE MR0175 2013/08 MADE IN CANADA.

Product Details Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing Fig. Visual UT UT ET HydroTest End Non-Destructive Testing Non-Destructive T				_
Product Details Mass Geiger Res.Mag. Visual UT UT ET HydroTest Product Size Pieces Length Ib/ft µR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 NPS 18 TRUE80 0.94 in.WT 5 DRL 170.80 <5 <20 Pass Pass Pass Pass Pass *	BSM-1128	Heat		
oduct Details Non-Destructive Testing	Heat	Test Type		
Non-Destructive Testing Mass Geiger Res.Mag. Visual UT UT ET HydroTest Length lb/ft μR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 DRL 170.80 <5 <20 Pass Pass Pass Pass Pass *	-	Product Size		Product Detail
Mass Geiger Res.Mag. Visual UT UT ET HydroTest h lb/ft μR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 170.80 <5 <20 Pass Pass Pass Pass Pass Pass *	5	Pieces		S
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Res.Mag. Visual UT UT ET HydroTest Gauss Insp. OD WT ASTM E213 ASTM E309	170.80	lb/ft	Mass	
Non-Destructive Testing Visual UT UT ET HydroTest Insp. OD WT ASTM E213 ASTM E309 Pass Pass Pass Pass Pass *	Ġ	μR/hr	Geiger	
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ET HydroTest 213 ASTM E309 Pass *	Pass	WT	TU	estructive T
ET HydroTest ASTM E309 Pass *	Pass	ASTM E213	TU	esting
HydroTest End Condition * Plain End	Pass	ST	ET	
End Condition Plain End	*		HydroTest	
	Plain End	Condition	End	

		Т		1
-	BSM-1128	Heat		
Vacuum Degas; Fully Killed	Blast Furnace; EAF; Ladle Refining;	Steelmaking Method		
Product	Heat	Analysis		
0.21	0.19	0		
0.94	0.91	Mn		
0.013	0.014	P		
0.94 0.013 0.002 0.31	0.004	s		Chemical Analysis (wt%)
0.31	0.34	Si		Analysis
0.05	0.05	<u>٩</u>		(wt%)
0.07	0.06	Cı		
0.01	0.04	Mo		
0.03	0.02	Z.		
0.004	0.003	<		
0.002	0.002	Ti		
0.001	0.001	Nb		
0.0001	0.0003	В		
0.39	1	(WII)	Œ	
0.40	-	(CSA)	CE	

BS	Γ		T
BSM-1128	Heat		
Heat	Test Type		
Ferrite & Pearlite	Microstructure		
75	HRBW	Hardness	
Pass	Flattening Test		Mechar
Longitudinal; 19.1mm x WT	50mm GL	Tension Test	viechanical Properties
49,100	psi	Yield (Rt0.5)	
69,500	psi	Tensile (Rm)	
0.71	(Rt0.5/Rm)	T/Y	
49	%	Elongation (A)	

BSM-1128	Heat	
1	Standard	Test
ı	Sample Details	Impact Test
i	Эē	Temp
	_	
	٦	Impact
1	_	Energy
1	AVG	
	%	
1	%	% Shea
ì	%	iear
,	AVG	
1	mm	
	mm	Lateral Ex
1	mm	pansion
1	AVG	

Additional Details:

results meet the corresponding requirements. Inc. in accordance with ASTM/ASME A/SA106-2011, A/SA53-2012, and the purchase order requirements, and that the We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing

Service, and NACE MR0103-2010 Section 2.1. $\checkmark~$ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour

No weld repairs have been performed on this product.

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

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

*Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:

2013 Aug 8

Manager of Quality and R&D Kenton Dechant, P.Eng.