

Mill Test Certificate

Bri-Steel Manufacturing Inc.

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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-0976

Product Size:

NPS 24 TRUE80

Production Date: June 6, 2013

Production Method: Hot Expansion Product Heat Treatment:

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

As-rolled

Product Markings: BRI-STEEL MFG ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 TRUE80 1.219 inchWT HEAT BSM-0976 (PIPE # LENGTH MASS) 296.41b/ft NDE SMLS NACE MR0175 2013/06 MADE IN CANADA.

В	Τ	_	Γ
BSM-0976	Heat		
Heat	Test Type		
NPS 24 TRUE80 1.219 in.	Product Size		Product Detail
9 in.WT			t Detail
2	Pieces		S
DRL	Length		
296.40	lb/ft	Mass	
ŝ	µR/hr	Geiger	
<20	Gauss	Res.Mag.	
Pass	Insp.	Visual	
Pass	OD		Non-[
Pass	WT	TU	estructive T
Pass	ASTM E213	TU	esting
Pass	ASTM E309	ET	
*		HydroTest	
Plain End	Condition	End	

3							
	BSM-0976			Heat			
	Vacuum Degas; Fully Killed	Blast Furnace; EAF; Ladle Refining;		Steelmaking Method			
	Product	Heat		Analysis			
	0.21	0.21		<u></u>			
	0.86	0.85		S			
	0.014	0.016		0			
	0.014 0.007	0.003	1	s			Chemical Analysis (wt%)
	0.32	0.30	9	S:			Analysis
	0.05	0.04	9	<u>ئ</u>			(wt%)
	0.06	0.07	000	2			
	0.01	0.02	-	<u>S</u>			
	0.03	0.03	141	Ζ.			
	0.005	0.004	•	<			
	0.003	0.002	-	_!			
	0.001	0.001	140	<u> </u>			30000
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-	0.37	,	(1144)	(11)	5	2	
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				Mechar	Mechanical Properties				
			Hardness		Tension Test	Yield (Rt0.5)	Tensile (Rm)	Υ/Τ	Elongation (A)
Heat	Test Type	Microstructure	HRBW	Flattening Test	50mm GL	psi	psi.	(Rt0.5/Rm)	%
BSM-0976	Heat	Ferrite & Pearlite	76	Pass	Longitudinal; 19.1mm x WT	50,500	72,000	0.70	49

	BSM-0976		Heat	
	,		Standard	Test
	1		Sample Details	Impact Test
	ı		Ö	Temp
	E		_	
	ı		ے	Impact
			_	Energy
			AVG	
			%	
	(%	% Sh
	1	L	%	ear
	1		AVG	
	,		mm	
	,	100000000000000000000000000000000000000	mm	Lateral Ex
The second secon	1		mm	(pansion
			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. ✓ 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:

Kenton Dechant, P.Eng. 2013 June 12

Manager of Quality and R&D