

Mill Test Certificate

Bri-Steel Manufacturing Inc.

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Product: Seamless Carbon Steel Pipe

Production Method:

Product Heat Number: BSM-0346

Product Size:

NPS 24 STD

Production Date: May 28, 2012

Hot Expansion

Product Heat Treatment: As-rolled

Product Standards: ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009

Product Markings: .BRI-STEEL MFG NPS 24 STD ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0346 (PIPE # LENGTH MASS) 94.621b/ft NDE 740PSI NACE MR0175 2012/05 MADE IN CANADA.

Product Details Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing HydroTest End Figure Res.Mag. Visual OD UT ET HydroTest End Non-Destructive Testing HydroTest End Figure Res.Mag. Visual OD WT ASTM E213 ASTM E309 740 psi/5s Condition Non-Destructive Testing HydroTest End Non-Destructive Testing Figure Res.Mag. Visual OD WT ASTM E213 ASTM E309 740 psi/5s Condition Non-Destructive Testing Figure Res.Mag. Visual OD WT ASTM E213 ASTM E309 740 psi/5s Condition Non-Destructive Testing			_	× ,	_
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Product Details Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing HydroTest HydroTest SCH Pieces Length lb/ft \(\pm\R/\)hr Gauss Insp. OD WT ASTM E213 ASTM E309 740 psi/5s Cor STD 10 DRL 94.62 <5 <20 Pass Pass Pass Pass Pass 37.5		Heat	Test Type		
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HydroTest 309 740 psi/5s Coi Pass 37.5			ASTM E213	TI II	esting
ydroTest 40 psi/5s Cor Pass 37.5		Pass	ASTM E309	티	
End Condition 37.5° Bevel		Pass	740 psi/5s	HydroTest	
	The state of the s	37.5° Bevel	Condition	End	

BSM-0346	Heat		
Heat	Test Type		
Refining; Vacuum Degas	Blast Furnace; EAF; Ladle	Steelmaking Method	
0.21	C		
0.86	Mn		
0.014	Р		
0.010	S		Chemica
0.23	Si		cal Analysis (wt%)
0.04	Ç		(wt%)
0.10	Си		
0.02	Mo		
0.05	<u>z</u> .		
0.002	<		
0.001	1		
0.001	Nb		
0.0003	В		
0.38	(IIW)	Œ	
0.38	(CSA)	æ	

	BSM-0346 Heat	Heat		
	Heat	Test Type	7007	
	Ferrite & Pearlite	Microstructure		
	76	HRBW	Hardness	
	Pass	Flattening Test		Mechan
Longitudinal	Transverse	Flattening Test 50mm GL; 38mm x WT	Tension Test	Mechanical Properties
44,800	40,200	psi	Yield (Rt0.5)	
45,100	39,500	psi	Yield (Rp0.2)	
72,000	71,500	psi	Tensile (Rm)	
0.62	0.56	(Rt0.5/Rm)	1/4	
44	43	%	Elongation (A)	

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 $\checkmark~$ 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. No weld repairs have been performed on this product. This product has no mercury contamination

This pipe product meet the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour

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

Mill Test Certificate approved by:

Kenton Dechant, P.Eng. 2012 June 13

Manager of Quality and R&D