

Will Test Certificate

Bri-Steel Manufacturing Inc.

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www.brichemsteel.com

Product: Seamless Carbon Steel Pipe

Product Heat Number:

Product Size:

NPS 18 STD

September 6, 2012

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

BSM-0467

Production Date:

Product Standards: ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, 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 <API > 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B A/SA53 GR B NPS 18 STD HEAT BSM-0467 (PIPE # LENGTH MASS) 70.591b/ft NDE 890PSI SMLS NACE MR0175 2012/09 MADE IN CANADA.

Product Details Non-Destructive Testing Non-Destructive Testing Visual UT ET HydroTest End Heat Test Type NPS Thickness Pieces Length lb/ft μR/hr Gauss Insp. OD WT ASTM E213 ASTM E309 890 psi/5s Condition BSM-0467 Heat 18 STD 13 DRL 70.59 <5 <20 Pass Pass Pass Pass Pass Pass Pass Pass 93.5° Bevel	<u></u>	Ī		Π
Product Details Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing Non-Destructive Testing HydroTest HydroTest Product Details Non-Destructive Testing HydroTest HydroTest Product Details Non-Destructive Testing HydroTest Product Details	3SM-0467	Heat		
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)Test si/5s C ss 37	Pass	ASTM E309	耳	
End Condition 37.5° Bevel	Pass	890 psi/5s	HydroTest	
	37.5° Bevel	Condition	End	

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	BSM-0467	Heat		
Vacuum Degas; Fully Killed	Blast Furnace; EAF; Ladle Refining;	Steelmaking Method		
	Heat	Analysis		
0.21	0.21	C		
0.88	0.89	Κ'n		
0.008	0.007	P		
0.008 0.014 0.21	0.011	s		Chemical Analysis (wt%
0.21	0.22	<u>Si</u>		Analysis
0.06	0.06	ç		(wt%)
0.09		ლ		
0.01	0.01	Mo		
0.06	0.07	Z.		
0.002	,	٧		
0.001	1	Τī		
0.002	ı	Nb		
0.0001	0.0003	В		
0.38	1	(IIIW)	30	
0.39	-	(CSA)	Œ	

	BSM-0467 Heat	Heat		
	Heat	Heat Test Type		
	Ferrite & Pearlite	Microstructure		
	77	HRBW	Hardness	
	Pass	Flattening Test		Mechar
Longitudinal; 38.1mm x WT	Transverse; 38.1mm x WT	50mm GL	Tension Test	Mechanical Properties
46,500	47,500	psi	Yield (Rt0.5)	
46,200	46,000	psi	Yield (Rp0.2)	
75,000	77,000	psi	Tensile (Rm)	
0.62	0.62	(Rt0.5/Rm)	1/4	
44	41	%	Elongation (A)	

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-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, and that the results meet the corresponding requirements.
- 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.

Mill Test Certificate approved by:

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