

## Mill Test Certificate

**Bri-Steel Manufacturing Inc.** 

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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-0465

**Product Size:** 

NPS 18 STD

Production Date: September 6, 2012

Product Standards:

Production Method:

**Hot Expansion** Product Heat Treatment: As-rolled

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-0465 (PIPE # LENGTH MASS) 70.591b/ft NDE 890PSI SMLS NACE MR0175 2012/09 MADE IN CANADA.

ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010

1 000				
/30   Darr   D	Se		Pass	Pass Pass Pass Pass
Gauss Insp. C	ı	OD WT	WT AST	DD WT ASTM E213 ASTM E309 890 psi/5s
Res.Mag. Visual		TU	UT UT	UT UT ET
	_	Non-Destructive	Non-Destructive Testing	Non-Destructive Testing

						Chemical Analysis (wt%)	Analysis	(wt%)									
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Heat	Steelmaking Method	Analysis	С	Mn	Р	S	Si	<del>ك</del>	ರ	M <sub>o</sub>	Z.	<	=!	Nb	В	(EW)	(CSA)
BSM-0465	Blast Furnace; EAF; Ladle Refining;	Heat	0.21	0.89	0.007	0.011	0.22	0.06	0.08	0.01	0.07	Ľ	1	1	0.0003	ı	1
	Vacuum Degas; Fully Killed	Product	0.20	0.87	0.008	0.011	0.20	0.05	0.09	0.01	0.06	0.002	0.001	0.001	0.0001	0.37	0.37

	BSM-0465 Heat	Heat		
	Heat	Test Type		
	Ferrite & Pearlite	Microstructure		
	76	HRBW	Hardness	
	Pass	Flattening Test		Mechar
Longitudinal; 38.1mm x WT	Transverse; 38.1mm x WT	50mm GL	Tension Test	Mechanical Properties
44,500	43,600	psi	Yield (Rt0.5)	
44,200	42,200	psi	Yield (Rp0.2)	
70,500	71,000	psi	Tensile (Rm)	
0.63	0.61	(Rt0.5/Rm)	Τ/Υ	
45	45	%	Elongation (A)	

## Additional Details:

- and that the results meet the corresponding requirements. Inc. in accordance with API 5L-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, 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.

Mill Test Certificate approved by:

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