

## Mill Test Certificate

**Bri-Steel Manufacturing Inc.** 

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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-0504

Product Size:

Production Date:

**NPS 24 SCH 120** 

October 18, 2012

Production Method: Hot Expansion Product Heat Treatment: As-rolled

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

Product Markings: .BRI-STEEL MFG ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 SCH 120 HEAT BSM-0504 (PIPE # LENGTH MASS) 429.41b/ft NDE SMLS NACE MR0175 2012/10 MADE IN CANADA.

Product Details    Non-Destructive Testing				اس
Product Details    Non-Destructive Testing			Heat	SM-0504
Product Details       Non-Destructive Testing         Wall       Mass       Geiger       Res.Mag.       Visual       UT       UT       ET       HydroTest         Thickness       Pieces       Length       lb/ft       μR/hr       Gauss       Insp.       OD       WT       ASTM E213       ASTM E309         SCH 120       3       DRL       429.40       <5			Test Type	Heat
S	-		NPS	24
S	roduct Detai	Wall	Thickness	SCH 120
Non-Destructive Testing  Mass Geiger Res.Mag. Visual UT UT ET HydroTest  1 Ib/ft μR/hr Gauss Insp. OD WT ASTM E213 ASTM E309  429.40 <5 <20 Pass Pass Pass Pass Pass *	S		Pieces	3
Non-Destructive Testing			Length	DRL
Non-Destructive Testing		Mass	lb/ft	429.40
Non-Destructive Testing           Visual         UT         UT         ET         HydroTest           Insp.         OD         WT         ASTM E213         ASTM E309           Pass         Pass         Pass         Pass         *		Geiger	μR/hr	<5>
Non-Destructive   Testing		Res.Mag.	Gauss	<20
on-Destructive Testing  UT  UT  ET  HydroTest  WT  ASTM E213 ASTM E309  Pass  Pass  Pass  Pass  **		Visual	Insp.	Pass
ve Testing  UT  ET  HydroTest  ASTM E213 ASTM E309  Pass  Pass  *	Non-E		OD	Pass
g         HydroTest           UT         ET         HydroTest           M E213         ASTM E309         *           'ass         Pass         *	estructive T	TU	TW	Pass
ET HydroTest STM E309 Pass *	esting	TU	ASTM E213	Pass
ydroTest *		ET	ASTM E309	Pass
5 C		HydroTest		*
End ondition ain End		End	Condition	Plain End

						Chemical Analysis (wt%)	Analysis	(wt%)									
					000.000			50.0								æ	Œ
Heat	Steelmaking Method	Analysis	С	Mn	P	S	Si	Cr	Cu	Mo	Z.	<	Т	Nb	В	(WII)	(CSA)
BEN OFON	Blast Furnace; EAF; Ladle Refining;	Heat	0.20	0.90	200.0 810.0	0.002	0.30	0.04	0.05	0.01	0.02	0.004	0.002	0.001	0.0001	1	ı
BSIVI-0504	Vacuum Degas; Fully Killed	Product	0.20	0.91	0.91 0.015 0.004	0.004	0.28	0.04	0.05	0.01	0.03	0.003	0.002	0.001	0.0002	0.37	0.38

51	0.64	73,000	47,100	46,500	Longitudinal; 19.1mm x WT	Pass	76	Ferrite & Pearlite	Heat	BSM-0504 Heat
%	(Rt0.5/Rm)	psi	psi		50mm GL	Flattening Test	HRBW	Microstructure	Test Type	Heat
Elongation (A)	Υ/Τ	Tensile (Rm)	Yield (Rp0.2)	Yield (Rt0.5)	Tension Test		Hardness			
					Mechanical Properties	Mechan				

## 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
- $\prime$  This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.
- \* Note that this product was hydrotested to 1000psi for 5 seconds.

Mill Test Certificate approved by:

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