



Bri-Steel Manufacturing Inc.

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Mill Test Certificate

Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-1111

Product Size: NPS 20 TRU E40

Production Date: July 29, 2013

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Product Standards: ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, 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 <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 TRU E40 0.594 InchWT HEAT BSM-1111 (PIPE # LENGTH MASS) 122.9lb/ft

NDE 1400 PSI 5MLS NACE MR0175 2013/07 MADE IN CANADA.

Product Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass	Geiger	Res. Mag.	Visual	OD	WT	UT	ET	HydroTest	End
BSM-1111	Heat	NPS 20 TRU E40 0.594 in. WT	16	DRL	122.90 lb/ft	µR/hr	Gauss	Insp.	Pass	Pass	Pass	Pass	1400 psi/5s	Condition
						<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE	CE
BSM-1111	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.20	0.91	0.014	0.007	0.25	0.05	0.08	0.01	0.04	-	-	-	0.0004	-	-
		Product	0.21	0.90	0.013	0.005	0.24	0.04	0.09	0.01	0.04	0.004	0.002	0.001	0.0003	0.38	0.39

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test	Yield (Rt0.5)	Tensile (Rm)	V/T	Elongation (A)
BSM-1111	Heat	Ferrite & Pearlite	HRBW	Pass	50mm GL	psi	psi	(Rt0.5/Rm)	%
			76		Longitudinal: 38.1mm x WT	50,000	73,000	0.68	47

Heat	Test	Standard	Impact Test	Temp °C	Impact Energy			Lateral Expansion						
					J	J	J	%	%	%	mm	mm	mm	
BSM-1111					-	-	-	-	-	-	-	-	-	-

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.
- ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 Section 2.1.
- ✓ 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:

2013 AUG 01

Paul Sowden, T.T.
Assistant QA Manager