



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1326 Production Date: Oct 15, 2013
 Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000542
 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: NPS 16 SCH 100 1.031 INCHWT SMLS 2013/10 NDE
 HEAT BSM-1326 (PIPE # LENGTH MASS) 164.8lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

Product: Details				Non-Destructive Testing											
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest	End Condition	
BSM-1326	Heat	NPS 16 SCH 100 1.031in. WT	2	DRL	164.8	<5	<10	Pass	Pass	Pass	Pass	Pass	*	Plain End	

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(I/W)	CE(CSA)
BSM-1326	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Product	0.23	0.92	0.016	0.003	0.31	0.05	0.06	0.01	0.03	0.003	0.001	0.001	0.0001	-	0.40

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-1326	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 19.05 mm x WT	51,500	75,500	0.68	45

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	AVG	mm	mm	mm	AVG
BSM-1326	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SA106-2011 Grade B/C 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-2009 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.
 * Note that this product was hydrotested to 1000 psi for 5 seconds.

Mill Test Certificate approved by:

 2013 OCT 24
 Paul Sowden, T.T.
 Assistant QA Manager