



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2001 Production Date: Sep 04, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001315
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings



NPS 30 STD 0.375 INCHWT SMLS 2014/09 NDE 1180PSI
HEAT BSM-2001 (PIPE # LENGTH MASS) 118.6lb/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	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1180 PSI/ 5 s	End Condition
BSM-2001	Heat	NPS 30 STD 0.375in. WT	6	DRL	118.6	<5	<15	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)														
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb
			Heat	0.17	1.14	0.019	0.002	0.31	0.01	0.02	0.01	0.01	0.060	
			Product	0.19	1.15	0.019	0.003	0.30	0.10	0.03	0.01	0.05	0.056	0.002
BSM-2001	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed													

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-2001	Heat	Ferrite & Pearlite	85 HRBW	Pass	Longitudinal: 38.1 mm x WT	59,500	78,500	0.76	37

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy						% Shear						Lateral Expansion			
				J	J	J	AVG	%	%	%	%	AVG	mm	mm	mm	mm	mm	mm	AVG
				-45	18.0	12.0	8.5	12.8	0	0	0	0	0	0	0.20	0.03	0.05	0.05	0.09
BSM-2001	ASTM A333	CVN Long 10 x 8 mm																	

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/SA106-2013 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.

Mill Test Certificate approved by:

Sept 10/9/2014 T. Lam

Tonya Lam, C.E.T.
Assistant QA Manager