



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-2114

Product Size: 20STD

Production Date: Nov 03, 2014

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Certificate No.: MTR- 001442

Product Standards:

ASME B36.10-2004, API 5L-45th Ed. Grade B/X42/X46 PSL1, ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Product Markings



<API & L/C No.> API SPEC 5L NPS 20 STD 0.375 INCHWT GR B/X42/X46 PSL1 SM1S 2014/11 NDE 1570PSI
HEAT BSM-2114 (PIPE # LENGTH MASS) 78.6lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) 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 μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1570PSI/ 5 s	End Condition
BSM-2114	Heat	NPS 20 STD 0.375in. WT	24	DRL	78.6	<5	<10	Pass	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(IIW)	CE(CSA)
			Heat	0.20	1.13	0.019	0.005	0.22	0.03	0.02	0.01	0.01	0.051	0.002	0.002	0.0005	-
		Product	0.18	1.10	0.016	0.006	0.26	0.04	0.02	0.01	0.01	0.050	0.002	0.001	0.0004	0.39	0.39
BSM-2114	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	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2114	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 38.1 mm x WT	53,500	74,500	0.72	42

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy J				% Shear			Lateral Expansion mm			
BSM-2114	ASTM A333	CVN Long 10 x 7.5 mm	-48	81.5	85.0	92.5	86.3	40	40	50	43	1.80	1.82	1.91

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-45th Ed., ASTM/ASME A/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C A53-2012/SA53-2013, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 and API Q1.

✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2012 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:

T. Lam *Nov 05/2014*

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

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