



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe

Product Heat Number:

BSM-2441

Product Size: NPS 20 XS

Production Date: Jun 18, 2015

Production Method: Hot Expansion

Product Heat Treatment: ThermoMechanical Formed

Certificate No.: MTR- 001841

Product Standards:

ASME B36.10-2004, API 5L-45th Ed. GradeB PSL1, ASTM/ASME 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 XS 0.500 INCHWT GRB PSL1 SM1S 2015/06 NDE 1200PSI
HEAT BSM-2441 (PIPE # LENGTH MASS) 104.1lb/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	ET	HydroTest	End Condition			
BSM-2441	Heat	NPS 20 XS 0.500in. WT	14	DRL	104.1	<5	<20	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	B	CE(IIW)	CE(CSA)
BSM-2441	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.16	1.24	0.013	0.002	0.28	0.03	0.02	0.01	0.01	0.036	0.002	0.002	0.0005	-	-
		Product	0.16	1.21	0.009	0.004	0.26	0.03	0.02	0.01	0.01	0.048	0.002	0.001	0.0004	0.38	0.37
			0.17	1.22	0.009	0.004	0.25	0.03	0.02	0.01	0.01	0.048	0.002	0.001	0.0004	0.39	0.39
Mechanical Properties																	
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL				Yield (Rt0.5) psi	Tensile (Rm) psi		Y/T (Rt0.5/Rm)		Elongation (A) %			
BSM-2441	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 1.5 in. x WT				48,200	71,500		0.67		39			
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy					% Shear			Lateral Expansion					
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG		

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API 5L-45th Ed, ASTM/ASME A106-2014/SA106-2013, 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, and 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 June 123/2015

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