



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2230 Product Size: 18T40 Production Date: Jan 27, 2015
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001554
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 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 18 TRUE 40 0.562 INCHWT GR B/X42 PSL1 SMLS 2015/01 NDE 2230PSI
HEAT BSM-2230 (PIPE # LENGTH MASS) 104.8lb/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	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT	UT	ET	HydroTest 2230 PSI/ 5 s	End Condition
BSM-2230	Heat	NPS 18 TRUE 40 0.562in. WT	10	DRL	104.8	<5	<15	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Chemical Analysis (wt%)																		
Heat	Steelmaking Method Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)	
		Heat	0.16	1.11	0.012	0.005	0.23	0.02	0.02	0.01	0.01	0.053	-	-	-	-	-	-
		Product	0.16	1.10	0.016	0.006	0.23	0.04	0.02	0.01	0.01	0.050	0.002	0.001	0.0004	0.37	0.37	

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-2230	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 25.4 mm x WT		49,500	71,500	0.69	44				
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear			Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm
BSM-2230	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 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:

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

T. Lam Jan. 28. 2015