




Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2401 Product Size: 16T80 Production Date: May 21, 2015
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001793
Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B 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 16 TRUE 80 0.844 INCHWT 136.5LB/FT GR B PSL1 SMLS 2015/05 NDE 2500PSI
HEAT BSM-2401 (PIPE # LENGTH MASS) 136.5lb/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 μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 2500PSI/ 5 s	End Condition
BSM-2401	Heat	NPS 16 TRUE 80 0.844in. WT	3	DRL	136.5	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Heat		Steelmaking Method	Chemical Analysis (wt%)														
		Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)
BSM-2401	Blast Furnace; EA; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.18	0.90	0.011	0.006	0.22	0.05	0.01	-	0.04	-	-	-	-	-	-
		Product	0.21	0.93	0.014	0.007	0.23	0.06	0.01	0.01	0.04	0.002	0.002	0.001	0.0005	0.38	0.38

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-2401	Heat	Ferrite & Pearlite	75 HRBW	Pass	Longitudinal; 0.5 in. Round Bar	40,000	70,500	0.57	34

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
BSM-2401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 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
May 127/2015