



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2528 Product Size: NPS 24 TRUE 40 Production Date: Sep 16, 2015
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 001946
 Product Standards: ASME B36.10-2004, API 5L-45th Ed. GradeB/X42/X46/X52 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 24 TRUE 40 0.688 INCHWT GRB/X42/X46/X52 PSL1 SMLS 2015/09 NDE 2690PSI
 HEAT BSM-2528 (PIPE # LENGTH MASS) 171.2lb/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 ASTM E213	ET ASTM E309	HydroTest 2690PSI/ 5 s	End Condition
BSM-2528	Heat	NPS 24 TRUE 40 0.688in. WT	7	DRL	171.2	<5	<20	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

Heat	Test Type	Steelmaking Method	Chemical Analysis (wt%)																															
			Test Type		C		Mn		P		S		Si		Cr		Cu		Mo		Ni		V		Ti		Nb		B		CE(IIW)		CE(CSA)	
			Heat	Product	0.13	0.14	1.04	1.00	0.009	0.010	0.002	0.006	0.24	0.24	0.06	0.07	0.12	0.12	0.08	0.09	0.04	0.05	0.020	0.020	0.004	0.001	0.0001	0.0001	0.35	0.35				
BSM-2528	Heat		0.13	0.14	1.04	1.00	0.009	0.010	0.002	0.006	0.24	0.24	0.06	0.07	0.12	0.12	0.08	0.09	0.04	0.05	0.020	0.020	0.004	0.001	0.0001	0.0001	0.35	0.35						

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-2528	Heat	Ferrite & Pearlite	83 HRBW	Pass	Longitudinal; 0.75 in. x WT	59,000	75,500	0.78	48

Heat	Test Type	Impact Test Standard	Temp °C	Impact Energy				% Shear				Lateral Expansion				
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG	
BSM-2528	Standard	Sample Details	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 *Sept/22/2015*

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