



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2591 Product Size: NPS 14 STD Production Date: Nov 30, 2015
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002019

Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Product Markings
 NPS 14 STD 0.375 INCHWT SMLS 2015/11 NDE 1100PSI
 HEAT BSM-2591 (PIPE # LENGTH MASS) 54.57lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA



Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Geiger μR/hr	Res. Mag. Gauss	Visual Insp.	Non-Destructive Testing							
									OD	UT WT	UT Pass	ET	ET Pass	HydroTest	End Condition	
BSM-2591	Heat	NPS 14 STD 0.375in. WT	5	DRL	54.57	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	32° 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-2591	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.22	0.56	0.016	0.006	0.20	0.03	0.01	0.01	0.01	0.002	0.001	0.001	0.0003	0.32	0.33
		Product	0.23	0.54	0.018	0.006	0.22	0.03	0.01	0.01	0.01	0.002	0.005	0.001	0.0003	0.33	0.34
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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-2591	Heat	Ferrite & Pearlite	74 HRBW	Pass	Pass	47,000	72,500	0.65	42

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion						
				J	J	J	%	%	%	mm	mm	mm	mm	mm	mm	
BSM-2591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with 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, API Q1, and PED 97/23/EC.

✓ 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 Dec 10 2015

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