



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-2872      Product Size: NPS 14 STD      Production Date: Aug 25, 2016  
 Production Method: Hot Expansion      Product Heat Treatment: Normalizing Forming      Certificate No.: MTR- 002945

Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2015 Grade B NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2009 MR0103/ISO 17495:2015

Product Markings  
 NPS 14 STD 0.375 INCHWT SMLS 2016/08 NDE  
 HEAT BSM-2872 (PIPE # LENGTH MASS) 54.57lb/ft ASTM/ASME A/SA106 GR B 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	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition	
BSM-2872	Heat	NPS 14 STD 0.375in. WT	31	DRL	54.57	<5	<20	Pass	Pass	Pass	Pass	Pass	N12.5 Pass	-	30° Bevel

Heat	Test Type	Steelmaking Method	Test Type	Chemical Analysis (wt%)																
				C	Min	P	S	SI	Cr	Cu	Mo	Ni	V	TI	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)	
BSM-2872	Heat	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	0.01	0.01	0.002	0.001	0.001	0.0003	-	0.33
			Product	0.23	0.55	0.016	0.005	0.22	0.03	0.01	0.01	0.01	0.01	0.002	0.005	0.001	0.0002	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	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-2872	Heat	Ferrite & Pearlite	77 HRBW	Pass	Longitudinal; 1.5 in. x WT	42 300	71 500	0.59	46

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-2872	-	-	-	-	(3 Tests) AVG	(3 Tests) AVG	-	(3 Tests) AVG

**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/SA106-2015, A53-2012/SA53-2015, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 (APIQR-1584), API Q1, and PED 2014/68/EU.

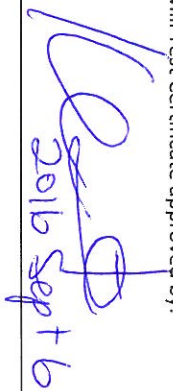
✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103/ISO 17495:2015 Section 13.1

✓ 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:

  
 2016 Sep 16

Kenton Dechant, P.Eng.  
 Manager of Quality and R&D