



# Mill Test Certificate

Bri-Steel Manufacturing  
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Product: Seamless Carbon Steel Pipe      Product Heat Number: BSM-2695      Product Size: NPS 20 STD      Production Date: Mar 22, 2016  
 Production Method: Hot Expansion      Product Heat Treatment: As Rolled      Certificate No.: MTR- 002141  
 Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B NDE, AS3-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012  
 Product Markings: NPS 20 STD 0.375 INCHWT SMLS 2016/03 NDE 800PSI  
 HEAT BSM-2695 (PIPE # LENGTH MASS) 78.6lb/ft ASTM/ASME A/SA106 GR B A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA



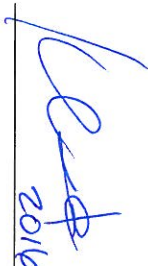
Product: Details				Non-Destructive Testing										
Heat	Test Type	Product Size	Pieces	Length	Mass lb/ft	Gelger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 800 PSI/ 5 s	End Condition
BSM-2695	Heat	NPS 20 STD 0.375in. WT	9	DRL	78.6	<5	<20	Pass	Pass	Pass	N12.5 Pass	-	Pass	33° Bevel

Heat	BSM-2695	Steelmaking Method	Test Type	Chemical Analysis (wt%)															
				C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)
		Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat	0.16	1.13	0.010	0.002	0.25	0.01	0.01	0.01	0.01	0.01	0.02	0.050	0.001	0.001	0.0001	0.36
			Product	0.16	1.14	0.010	0.003	0.28	0.05	0.01	0.01	0.01	0.02	0.059	0.002	0.001	0.0003	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-2695	Heat	Ferrite & Pearlite	80 HRBW	Pass	Longitudinal; 1.5 in. x WT	50 500	76 500	0.66	40

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy (J)	Shear (%)	Lateral Expansion (mm)
BSM-2695	-	-	-	-	(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/SA106-2013, AS3-2012/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 (APIQR-1584), 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:  
  
 2016 Mar 24

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