



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2711 Production Date: Apr 06, 2016
 Production Method: Hot Expansion Product Heat Treatment: As Rolled Certificate No.: MTR- 002159
 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 20 STD 0.375 INCHWT SMLS 2016/04 NDE 800PSI
 HEAT BSM-2711 (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-2711	Heat	NPS 20 STD 0.375in. WT	9	DRL	78.6	<5	<20	Pass	Pass	Pass	N12.5 Pass	-	Pass	32° Bevel

Heat	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)		
BSM-2711	Blast Furnace, EAF, Ladle Refining, Vacuum Degas, Fully Killed	Heat	0.15	1.18	0.011	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	-	0.35
		Product	0.15	1.16	0.010	0.003	0.27	0.04	0.01	0.01	0.01	0.02	0.057	0.001	0.001	0.001	0.0003	0.37	-	0.35

Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					2 in. GL	1.5 in. x WT				
BSM-2711	Heat	Ferrite & Pearlite	82 HRBW	Pass	Longitudinal; 1.5 in. x WT	51 500	76 000	0.68	40	

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy (J)		Shear (%)	Lateral Expansion (mm)
				(3 Tests) AVG	(3 Tests) AVG		
BSM-2711	-	-	-	-	-	-	-

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:

Tonya Lam April 11/2016

Tonya Lam, P. Tech (Eng.)
 Assistant QA Manager