



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2609 Product Size: NPS 16 STD Production Date: Dec 22, 2015
 Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002037
 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 16 STD 0.375 INCHWT SMLS 2015/12 NDE 1000PSI
 HEAT BSM-2609 (PIPE # LENGTH MASS) 62.58lb/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 μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1000 PSI/ 5 s	End Condition	
BSM-2609	Heat	NPS 16 STD 0.375in. WT	8	DRL	62.58	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	31° 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(CSA)	
			Heat	0.22	0.57	0.019	0.004	0.24	0.04	0.01	0.01	0.01	0.01	0.002	0.001	0.001	0.0003	0.33
BSM-2609	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Product	0.21	0.55	0.017	0.006	0.25	0.03	0.01	0.01	0.01	0.01	0.002 <td>0.002 <td>0.001 <td>0.0003 <td>0.31</td> <td>0.32</td> </td></td></td>	0.002 <td>0.001 <td>0.0003 <td>0.31</td> <td>0.32</td> </td></td>	0.001 <td>0.0003 <td>0.31</td> <td>0.32</td> </td>	0.0003 <td>0.31</td> <td>0.32</td>	0.31	0.32

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) %
					Longitudinal; 1.5 in. x WT	40,000				
BSM-2609	Heat	Ferrite & Pearlite	72 HRBW	Pass	Pass	40,000	68,500	0.58	41	

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy						% Shear			Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG	
BSM-2609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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, 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:

Tilbam Sun / 07 / 2016

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