



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2860 Product Size: NPS 36 XS Production Date: Aug 10, 2016
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 002932

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

Product Markings: NPS 36 XS 0.500 INCHWT SMLS 2016/08 NDE 1050PSI



HEAT BSM-2860 (PIPE # LENGTH MASS) 189.6lb/ft ASTM/ASME A/SA106 GR B/C 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	Geliger $\mu\text{R/hr}$	Res. Mag. Gauss	Visual Insp.	OD	UT (WT) ASTM E114	UT ASTM E213	ET ASTM E309	HydroTest 1050PSI/ 5 s	End Condition
BSM-2860	Heat	NPS 36 XS 0.500in. WT	8	DRL	189.6	<5	<10	Pass	Pass	Pass	N12.5 Pass	-	Pass	35° Bevel

Heat	Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Chemical Analysis (wt%)																	
		Test Type		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)
		Heat	Product	0.21	0.90	0.009	0.002	0.24	0.04	0.06	0.03	0.03	0.001	0.001	0.001	0.001	0.0003	0.38	-
				0.19	0.89	0.008	0.003	0.26	0.04	0.06	0.03	0.03	0.003	0.001	0.001	0.0003	0.36	-	0.37

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GI	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2860	Heat	Ferrite & Pearlite	79 HRBW	Pass	Longitudinal; 1.5 in. x WT	50 500	74 000	0.68	45

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J) (3 Tests) AVG	Impact Energy Results (J) (3 Tests) AVG	Shear (%) (3 Tests) AVG	Lateral Expansion (mm) (3 Tests) AVG
BSM-2860	-	-	-	-	-	-	-	-

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:

Tonya Lam August 11/8/2016

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