



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-3186 Product Size: NPS 30 STD Production Date: Jul 05, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003403
 Product Standards: ASME B36.10M-2015, ASTM/ASME A333-2016/SA333-2015 Grade 6 LT(M45C) A106-2014/SA106-2015 Grade B/C NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2015 MR0103/ISO 17495:2015
 Product Markings: NPS 30 STD 0.375 INCHWT SMLS 2017/07 NDE 600PSI
 HEAT BSM-3186 (PIPE # LENGTH MASS) 118.82lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) 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	Galger	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition	
BSM-3186	Heat	NPS 30 STD 0.375in. WT	8	DRL	118.82	<5	<10	Pass	Pass	ASTM E114	ASTM E213	ASTM E309	600PSI/ 5s	35° Bevel	

Heat	BSM-3186	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)
				0.18	1.28	0.016	0.007	0.34	0.08	0.01	0.01	0.04	0.003	0.002	0.0006	0.42	-	-	0.43
		Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed	Heat																
			Product	0.18	1.30	0.014	0.005	0.36	0.10	0.01	0.00	0.04	0.043	0.004	0.001	0.0005	0.43 <td>-</td> <td>0.44</td>	-	0.44

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-3186	Heat	Ferrite & Pearlite	81 HRBW	Pass	Longitudinal; 1.5 in. x WT	51 500	75 000	0.69	36
				Pass	Longitudinal; 1.5 in. x WT	52 500	76 500	0.69	38

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-3186	ASTM A333	Pass	CVN Long 8STR 10x7.5mm	-48	(3 Tests) AVG (11/11/11) 14	(3 Tests) AVG (78/89/89) 85	(40/40/40) 40	(3 Tests) AVG (1.55/1.70/1.75) 1.67

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A333-2016/SA333-2015, 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 9001:2015 (APIQR-1584), API Q1, and PED 2014/68/EU.
 ✓ This pipe product meets the **SOUR SERVICE** requirements of ANSI/NACE MR0175/ISO 15156-2A:2015 (Annex A2 for Region 3 Sour Service), and ANSI/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:
T. Lam July 11/2017
 Tonya Lam, P. Tech (Eng.)
 Assistant QA Manager