



Mill Test Certificate

Bri-Steel Manufacturing Inc.
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2305 Product Size: 30STD Production Date: Mar 18, 2015
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001647
Product Standards: ASME B36.10-2004, ASTM/ASME A/SAS33-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
Product Markings: NPS 30 STD 0.375 INCHWT SMLS 2015/03 NDE 600PSI
HEAT BSM-2305 (PIPE # LENGTH MASS) 118.6lb/ft ASTM/ASME A/SAS33 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	Geiger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 600PSI/ 5 s	End Condition
BSM-2305	Heat	NPS 30 STD 0.375in. WT	24	DRL	118.6	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	32.5° Bevel

Chemical Analysis (wt%)																		
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)	
		Heat	0.17	1.29	0.013	0.006	0.33	0.04	0.01	0.01	0.04	0.070	0.001	0.001	0.0007	-	-	
		Product	0.16	1.28	0.013	0.007	0.32	0.04	0.01	0.01	0.04	0.066	0.002	0.001	0.0005	0.40	0.40	
BSM-2305			Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed															

Mechanical Properties															
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %						
BSM-2305	Heat	Ferrite & Pearlite	81 HRBW	Pass	Longitudinal; 38.1 mm x WT	52,500	73,500	0.71	46						
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear		Lateral Expansion					
				J	J	J	AVG	%	%	AVG	mm	mm	mm	AVG	
BSM-2305	ASTM A333	CVN Long 10 x 7.5 mm	-48	116.0	134.0	110.0	120.0	55	70	45	57	2.42	2.48	2.28	2.39

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with ASTM/ASME A/SAS33-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C 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 and API Q1.
- ✓ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 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, C.E.T.
Assistant QA Manager

Tonya Lam March 18/2015

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