



Bri-Steel Manufacturing Inc.
 2125-64 Avenue, Edmonton, AB Canada T6P 1Z4
 Tel: 001 (780) 469-6603
 Fax: 001 (780) 469-6986
 www.brichemsteel.com

Mill Test Certificate

Product: **Seamless Carbon Steel Pipe** Product Heat Number: **BSM-0363** Product Size: **NPS 20 STD** Production Date: **June 12, 2012**

Production Method: **Hot Expansion** Product Heat Treatment: **As-rolled**

Product Standards: **ASTM/ASME A/SA106-2011 Grade B, A/SA53-2012 Grade B Type S, NACE MR0175-2009**

Product Markings: **.BRI-STEEL MFG NPS 20 STD ASTM/ASME A/SA106 GR B A/SA53 GR B HEAT BSM-0363 (PIPE # LENGTH MASS) 104.1lb/ft NDE 1260PSI NACE MR0175 2012/06 MADE IN CANADA.**

Product Details				Non-Destructive Testing											
Heat	Test Type	NPS	SCH	Pieces	Length	Mass lb/ft	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1260 psi/5s	End Condition
BSM-0363	Heat	20	STD*	21	DRL	104.10	<5	<20	Pass	Pass	Pass	---	Pass	Pass	37.5° Bevel

Chemical Analysis (wt%)																		
Heat	Test Type	Steelmaking Method		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE (IIW)	CE (CSA)	
		Blast Furnace; EAF; Ladle Refining; Vacuum Degass																
BSM-0363	Heat			0.20	0.90	0.010	0.008	0.21	0.04	0.09	0.01	0.04	0.004	0.002	0.002	0.0002	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Test	Tension Test 50mm GL; 38mm x WT		Yield (Rp0.2) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
					Transverse	Longitudinal				
BSM-0363	Heat	Ferrite & Pearlite	75	Pass	Pass	41,200	40,600	69,000	0.60	43
						38,600	36,200	69,500	0.56	44

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/SA106-2011, A/SA53-2012 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ This pipe product meet the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service, and NACE MR0103-2010 Section 2.1.
- ✓ No weld repairs have been performed on this product. This product has no mercury contamination.
- ✓ This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

*Note that Pipes 003B, 006, 011B, 017B and 021 were downgraded to NPS 20 STD from NPS 20 XS

Mill Test Certificate approved by:

Kent Dechant
 2012 June 27

Kenton Dechant, P.Eng.
 Manager of Quality and R&D



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Heat	Test Type	NPS	SCH	Pieces	Length	Mass	Geiger	Res.Mag.	Visual	OD	UT	UT	ET	HydroTest	End
BSM-0363	Heat	20	XS	21	DRL	104.10	<5	<20	Pass	Pass	WT	---	Pass	1260 psi/5s	37.5° Bevel

Chemical Analysis (wt%)																
Heat	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE	CE	
BSM-0363	Heat	0.20	0.90	0.010	0.008	0.21	0.04	0.09	0.01	0.04	0.004	0.002	0.002	0.0002	0.37	0.38

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test		Yield (Rp0.2)	Tensile (Rm)	Y/T	Elongation (A)
					50mm GL; 38mm x WT	Transverse				
BSM-0363	Heat	Ferrite & Pearlite	HRBW	Pass	Longitudinal	41,200	40,600	69,000	0.60	43
			75			38,600	36,200	69,500	0.56	44

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