



## Mill Test Certificate

**Bri-Steel Manufacturing**  
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Product: **Welded Carbon Steel Pipe**

Product Heat Number:

**BSM-2214**

Product Size:

**NPS 20 STD**

Production Date:

**January 8, 2015**

Production Method: **HFIW & Hot Expansion**

Product Heat Treatment:

**Thermomechanical Formed**

Certificate Number: **1849**

Product Standards: **ASME B36.10-2004, ASTM/ASME A/SAS3 Grade A Type E**

Product Markings:

**BRI-STEEL MFG NPS 20 STD 0.375 INCHWT HFIW 2015/01 NDE 800PSI  
HEAT BSM-2214 (PIPE # LENGTH MASS) 78.60 LB/FT ASTM/ASME A/SAS3 GR B 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.	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 800 psi/5s	End Condition
BSM-2214	Heat	NPS 20 STD 0.375 in. WT	1	DRL	78.60	<5	<20	Pass	Pass	Pass	Pass	Pass	32.5° Bevel


Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Analysis	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE (IIW)	CE (CSA)
BSM-2214	Blast Furnace; EAF; Ladle Refining; Vacuum Degas	Heat	0.11	0.43	0.025	0.010	0.16	0.03	0.04	0.01	0.03	0.001	0.001	0.001	-	-	-
		Product	0.17	0.44	0.030	0.014	0.17	0.02	0.02	0.02	0.01	0.004	0.001	0.001	0.0002	0.25	0.25

Mechanical Properties										
Heat	Test Type	Microstructure	Hardness HRBW	Flattening Tests	Tension Test		Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
					50mm GL	Longitudinal: 25.4mm x WT				
BSM-2214	Heat	Ferrite & Pearlite	70	Pass		41,800	-	57,000	0.73	47
					Transverse to Weld: 38mm	-	63,500	-	-	

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A/SAS3 and the purchase order requirements, and that the results meet the corresponding requirements.
- ✓ 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:

  
2015 Aug 31  
Kenton Dechant, P.Eng.  
Manager of Quality and R&D