

Mill Test Certificate

Bri-Steel Manufacturing Inc.

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Product: Seamless Carbon Steel Pipe

Product Heat Number: BSM-0716

Product Size:

NPS 20 STD

Production Date: February 18, 2013

Production Method: Hot Expansion

Product Heat Treatment: As-rolled

Product Standards: ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010

Product Markings: .BRI-STEEL MFG <API> 51-0898 API 51 GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 20 STD 0.375 inchWT HEAT BSM-0716 (PIPE # LENGTH MASS) 78.6Ib/ft NDE 910 PSI SMLS NACE MR0175 2013/02 MADE IN CANADA.

Non-Destructive Testing							
Product Details Wall Wall Nass Geiger Res.Mag. Visual NPS Thickness Pieces Length lb/ft µR/hr Gauss lnsp. OD WT ASTM E213 ASTM E309 91 20 STD 5 DRL 78.60 <5 <20 Pass Pass Pass Pass Pass Pass Pass Pas	Heat			BSM-0716	Heat		
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HydroTest End 9 910 psi/5s Condition Pass 37.5° Bev CE CE B (IIW) (CSA)	Z b			Pass	ASTM E305	ET	
Condition 37.5° Bev CCE (CSA)				Pass	910 psi/5s	HydroTest	
				37.5° Beve	Condition		

	BSM-0716 Heat	Heat		
	Heat	Test Type		
	Ferrite & Pearlite	Microstructure		
	77	HRBW	Hardness	
	Pass	Flattening Test		Mechar
Longitudinal; 38.1mm x WT	Transverse; 38.1mm x WT	50mm GL	Tension Test	Mechanical Properties
45,000	44,400	psi	Yield (Rt0.5)	
45,100	44,800	psi	Yield (Rp0.2)	
70,000	70,000	psi	Tensile (Rm)	
0.64	0.63	(Rt0.5/Rm)	٧/٦	
42	44	%	Elongation (A)	

Additional Details:

BSM-0716

Blast Furnace; EAF; Ladle Refining;

Vacuum Degas; Fully Killed

Product Heat

0.20 0.20

0.90 0.88

0.009

0.014

0.21

0.04

0.08 0.09

0.02 0.01

0.04 0.06

0.003

0.001

0.001

0.0002 0.0005

0.37

0.38

and that the results meet the corresponding requirements. Inc. in accordance with API 5L-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing

Service, and NACE MR0103-2010 Section 2.1, This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour

No weld repairs have been performed on this product.

 \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1. This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

Mill Test Certificate approved by:

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

2013 Feb22