




Mill Test Certificate

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

Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1255 Product Size: 20T40 Production Date: Sep 17, 2013
 Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 001765
 Product Standards: ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, AS3-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012
 Product Markings:  <API & L/C No.> API SPEC 5L NPS 20 TRUE 40 0.594 INCHWT 122.9LB/FT GR B PSL1 SMLS 2013/09 NDE 1400PSI
 HEAT BSM-1255 (PIPE # LENGTH MASS) 122.9lb/ft ASTM/ASME 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	Gelger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1400PSI/ 5 s	End Condition	
BSM-1255	Heat	NPS 20 TRUE 40 0.594in. WT	1	DRL	122.9	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Plain End	

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)													
			C	Mn	P	S	SI	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CEI(IW)
BSM-1255	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.19	0.91	0.011	0.008	0.26	0.04	0.07	0.01	0.04	-	-	-	0.0005	-
		Product	0.21	0.89	0.012	0.011	0.26	0.04	0.07	0.01	0.03	0.003	0.001	0.001	0.0002	0.38

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) %
					Longitudinal; 1.5 in. x WT	Transverse; 1.5 in. x WT				
BSM-1255	Heat	Ferrite & Pearlite	75 HRBW	Pass	Pass	46,700	72,000	0.65	45	

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	mm	mm	mm	AVG	
BSM-1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013 Grade B/C AS3-2012/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:

Thomas May 12/2015

Tony Lam, C.E.T.
 Assistant QA Manager



Mill Test Certificate

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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1255 Production Date: Sep 17, 2013
 Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000479

Product Standards: ASME B36.10-2004, API 5L-45th 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: <API> 5L-0898 API SPEC 5L NPS 20 TRUE 40 0.594 INCHWT GR B PSL1 SMLS 2013/09 NDE 1400PSI
 HEAT BSM-1255 (PIPE # LENGTH MASS) 122.9lb/ft ASTM/ASME 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	Gelger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1400 psi/ 5 s	End Condition
BSM-1255	Heat	NPS 20 TRUE 40 0.594in. WT	1	DRL	122.9	<5	<10	Pass	Pass	Pass	Pass	Pass	Pass	Plain End

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)
BSM-1255	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.19	0.91	0.011	0.008	0.26	0.04	0.07	0.01	0.04				0.0005		
		Product	0.21	0.89	0.012	0.011	0.26	0.04	0.07	0.01	0.03	0.003	0.001	0.001	0.0002	0.38	0.38

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GI	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-1255	Heat	Ferrite & Pearlite	75 HRBW	Pass	Longitudinal; 38.1 mm x WT	46,700	72,000	0.65	45

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion				
				J	J	J	%	%	%	mm	mm	mm	AVG	
BSM-1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2011 Grade B/C A/SA53-2012, and the purchase order requirements, and that the results meet the corresponding requirements.

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

 2013 SEP 30

Paul Sowden, T.T.
 Assistant QA Manager