



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.brichemsteel.com

Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1216 Product Size: 14 STD Production Date: Sep 09, 2013
 Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000039

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 14 STD 0.375 INCHWT GR B PSL1 SMLS 2013/09 NDE 1140PSI
 HEAT BSM-1216 (PIPE # LENGTH MASS) 54.57lb/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	Geiger µR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM	HydroTest 1140 PSI/ 5 s	End Condition
BSM-1216	Heat	NPS 14 STD 0.375in. WT	8	DRL	54.57	<5	<5	Pass	Pass	Pass	Pass	Pass	Pass	34° Bevel

Chemical Analysis (wt%)																
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	CE(IIW)	CE(CSA)
BSM-1216	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.20	0.87	0.012	0.004	0.23	0.04	0.06	0.01	0.04					
		Product	0.21	0.90	0.012	0.005	0.23	0.04	0.07	0.02	0.04	0.004	0.001	0.001	0.0003	0.38

Mechanical Properties						
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Elongation (A) %
BSM-1216	Heat	Ferrite & Pearlite	74 HRBW	Pass	Yield (Rt0.5) psi 44,200 Tensile (Rm) psi 71,000	Y/T (Rt0.5/Rm) % 0.62 44

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion			
				J	J	J	%	%	%	mm	mm	mm	
BSM-1216	-	-	-	-	-	-	-	-	-	-	-	-	-

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:

Tonya Lam, C.E.T.