



Mill Test Certificate

Bri-Steel Manufacturing
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-1679 Product Size: NPS 14 TRUE 40 Production Date: Feb 28, 2014
Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002058
Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Product Markings



NPS 14 TRUE 40 0.438 INCHWT SM1S 2014/02 NDE
HEAT BSM-1679 (PIPE # LENGTH MASS) 63.67lb/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 μ R/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest	End Condition
BSM-1679	Heat	NPS 14 TRUE 40 0.438in. WT	7	DRL	63.67	<5	<10	Pass	Pass	Pass	Pass	Pass	-	34° Bevel

Heat		Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IW)	CE(CSA)
BSM-1679	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed		Heat	0.23	0.87	0.011	0.004	0.24	0.07	0.06	0.02	0.05	-	-	-	0.0004	0.40	0.41
			Product	0.22	0.86	0.016	0.005	0.25	0.07	0.07	0.02	0.04	0.003	0.001	0.001	0.0003	0.39	0.40

Mechanical Properties

Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. G.U.	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-1679	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 1.5 in. x WT	43,600	73,500	0.59	41

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy			% Shear			Lateral Expansion		
				J	J	AVG	%	%	AVG	mm	mm	AVG
BSM-1679	-	-	-	-	-	-	-	-	-	-	-	-

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A106-2014/SA106-2013, A53-2012/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, API Q1, and PED 97/23/EC.

Mill Test Certificate approved by:

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

T. Lam *Sam* *Feb 21 2016*

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



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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1679 Product Size: 14XS Production Date: Feb 28, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000928
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type 5, NACE MR0175-2009 MR0103-2010

Product Markings NPS 14 XS 0.500 INCHWT SMLS 2014/02 NDE
HEAT BSM-1679 (PIPE # LENGTH MASS) 72.09lb/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	End Condition
BSM-1679	Heat	NPS 14 XS 0.500in. WT	7	DRL	72.09	<5	<10	Pass	Pass	Pass	Pass	Pass	-	34° Bevel

Steelmaking Method					Chemical Analysis (wt%)														
Heat	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(CSA)			
BSM-1679	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed	Heat	0.23	0.87	0.011	0.004	0.24	0.07	0.06	0.02	0.05					0.0004	-	-	-
	Product	0.22	0.86	0.016	0.005	0.25	0.07	0.07	0.07	0.02	0.04	0.003	0.001	0.001	0.0003	0.39	0.39		

Mechanical Properties													
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 50mm GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %				
BSM-1679	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 38.1 mm x WT	43,500	73,500	0.59	41				
Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear			Lateral Expansion		
				J	J	J	AVG	%	%	%	AVG	mm	mm
BSM-1679	-	-	-	-	-	-	-	-	-	-	-	-	-

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/SA106-2013 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:

Paul Sowden
2014 MAR 6
Paul Sowden, T.T.
Assistant QA Manager