



Mill Test Certificate

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

Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1680 Product Size: NPS 14 TRUE 40 Production Date: Mar 03, 2014
Production Method: Hot Expansion Product Heat Treatment: ThermoMechanical Formed Certificate No.: MTR- 002042
Product Standards: ASME B36.10M-2015, ASTM/ASME NDE, A53-2012/SAS3-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Product Markings



NPS 14 TRUE 40 0.438 INCHWT SMLS 2014/03 NDE
HEAT BSM-1680 (PIPE # LENGTH MASS) 63.67lb/ft ASTM/ASME A/SAS3 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 E309	HydroTest	End Condition
BSM-1680	Heat	NPS 14 TRUE 40 0.438in. WT	10	DRL	63.67	<5	<10	Pass	Pass	Pass	Fail	Pass	-	33° 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-1680	Blas Furnace: EAF; Ladle Refining: Vacuum Degass; Fully Killed	Heat	0.20	0.92	0.012	0.003	0.25	0.06	0.07	0.01	0.04	-	-	0.0004	0.37
	Product	0.22	0.91	0.010	0.003	0.26	0.06	0.08	0.01	0.04	0.003	0.001	0.001	0.0004	0.39

Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	V/T (Rt0.5/Rm)	Elongation (A) %
BSM-1680	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 1.5 in. x WT	42,600	75,000	0.57	47

Heat		Test Standard		Impact Test Sample Details		Temp °C		Impact Energy				% Shear				Lateral Expansion			
BSM-1680	-	-	-	-	-	-	-	J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG

Additional Details:

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A53-2012/SAS3-2013, 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.

✓ 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.

Mill Test Certificate approved by:

2016 Jun 11

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



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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-1680 Product Size: 14XS Production Date: Mar 03, 2014
Production Method: Hot Expansion Product Heat Treatment: As-rolled Certificate No.: MTR- 000929
Product Standards: ASME B36.10-2004, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Product Markings NPS 14 XS 0.500 INCHWT SMLS 2014/03 NDE
HEAT BSM-1680 (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	UT	ET	HydroTest	End Condition
BSM-1680	Heat	NPS 14 XS 0.500in. WT	10	DRL	72.09	<5	<10	Pass	Pass	Pass	Pass	Pass	-	32.5° Bevel

Chemical Analysis (wt%)																	
Heat	Steelmaking Method	Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IW)	CE(CSA)
			Heat	0.20	0.92	0.012	0.003	0.25	0.06	0.07	0.01	0.04				0.0004	-
		Product	0.22	0.91	0.010	0.003	0.26	0.06	0.08	0.01	0.04	0.003	0.001	0.001	0.0004	0.39	0.39
BSM-1680	Blast Furnace; EAF; Ladle Refining; Vacuum Degass; Fully Killed																

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-1680	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 38.1 mm x WT	42,600	75,000	0.57	47			

Heat	Test Standard	Impact Test Sample Details	Temp °C	Impact Energy				% Shear				Lateral Expansion			
				J	J	J	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-1680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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, T.T.
Assistant QA Manager

Paul Sowden
2014 MAR 6