

Mill Test Certificate

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

www.bri-steel.com

Production Method: Product: Seamless Carbon Steel Pipe

> Product Heat Number: BSM-2557 Product Size: NPS 18 STD

Production Date: Oct 21, 2015

Hot Expansion Product Heat Treatment:

ThermoMechanical Formed Certificate No.: MTR- 001982

ASME B36.10-2004, API 5L-45th Ed. GradeB PSL1, 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

Product Standards:

HEAT BSM-2557 (PIPE # LENGTH MASS) 70.59Ib/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA <API & L/C No.> API SPEC 5L NPS 18 STD 0.375 INCHWT GRB PSL1 SMLS 2015/10 NDE 1000PSI

							ysis (wt%)	Chemical Analysis (wt%)	Ch					
33° Bevel	Pass	Pass	Pass	Pass	Pass	Pass	<20	Ġ	70.59	DRL	9	NPS 18 STD 0.375in. WT	Heat	BSM-2557
Condition	5 s	ASTM E309 1	ASTM E213 ASTM E309 1000 PSI/	WT		Insp.	Gauss	μR/hr	lb/ft					
End	HydroTest	ET	TU	UT	00	Visual	Res. Mag.	Geiger	Mass	Pieces Length	Pieces	Product Size	Test Type	Heat
			Non-Destructive Testing	on-Destruct	N							Product: Details		

		00803, 1 Uliy	BSM-2557 Blast Furnace; EAF	Heat St
		XIII CO	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method
		Product	Heat	Test Type
	0.18	0.17	0.16	C
Mechanical Properties	1.16	1.16	1.16	Mn
	0.009	0.009	0.010	P
	0.003	0.003	0.002	S
al Proper	0.28	3 0.29	0.27	Si
ties	0.03	0.03	0.01	Cr
	0.01	0.01	0.01	
The state of the s	0.01	0.01	0.01	Мо
	0.02	0.02	0.02	N:
	0.055	0.055	0.050	<
	0.002	0.002	0.001	Ti
	0.001	0.001	0.001	dN
	0.0002	0.0002	0.0001	
	0.39	0.38	0.37	CE(IIW)
	0.40	0.38	0.36	CE(CSA)

	Heat		BSM-2557		Heat
Test Standard			Heat		Test Type
			Ferrite & Pearlite	10100	Microstructure
Sample Details	Impact Test		81 HRBW		Hardness
ငိ	Temp		Pass		Flattening Test
۰					
ے	Impact Energy		Longitudinal; 1.5 in. x W	2	Ten
J	Energy	nergy	nal; 1.5 ir	2 in. GL	Tension Test
AVG			1. × WT		• •
%					
%	% Shear		52,000	psi	Yield (Rt0.5)
%	ear		76		Tens
AVG			76,000	psi	Tensile (Rm)
mm			0.68	(Rt0.5/Rm)	۲/۲
mm	Lateral l		8	'Rm)	7
mm	Lateral Expansion		42	%	Elongation (A)
AVG			. 5		ion (A)

Additional Details:

BSM-2557

AVG

%

%

AVG

mm

mm

mm

AVG

✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008, API Q1, and PED 97/23/EC. 5L-45th Ed., ASTM/ASME A106-2014/SA106-2013, A53-2012/SA53-2013, and the purchase order requirements, and that the results meet

✓ 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.

 \checkmark This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

 \checkmark This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1.

Mill Test Certificate approved by:

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