

Mill Test Certificate

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Seamless Carbon Steel Pipe

Product Heat Number:

BSM-1618 Product Size: 20XS

Production Date: Feb 10, 2014

Hot Expansion Product Heat Treatment:

As-rolled

Production Method:

Product Standards:

ASME B36.10-2004, API 5L-45th Ed. Grade B/X42 PSL1, ASTM/ASME A/SA106-2013 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009 MR0103-2010

Certificate No.: MTR- 000850

Product Markings | API > 51-0898 API SPEC 5L NPS 20 XS 0.500 INCHWT GR B/X42 PSL1 SMLS 2014/02 NDE 1890PSI MANDE MEAT BSM-1618 (PIPE # LENGTH MASS) 104.1lb/ft ASTM/ASME A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA

Product: Details Non-Destructive Testing Test Type Product Size Pieces Length Mass Geiger lb/ft Res. Mag. Visual lnsp. OD UT UT UT HydroTest End B Heat NPS 20 XS 0.500in. WT 3 DRL 104.1 <5 <10 Pass Pass Pass Pass Pass Pass Pass Pass 32.5° Bevel	BSM-1618		Heat	
Product: Details Non-Destructive Testing Product Size Pieces Length Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest NPS 20 XS 0.500in. WT 3 DRL 104.1 <5	_		Test Type	
Length Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest Ib/ft μR/hr Gauss Insp. WT ASTM E213 ASTM 1890 PSI/ 5 s DRL 104.1 <5	NPS 20 XS 0.500in. WT			Product: Details
h Mass Geiger Res. Mag. Visual OD UT UT ET HydroTest Ib/ft μR/hr Gauss Insp. WT ASTM E213 ASTM 1890 PSI/ 5 s 104.1 <5 <10 Pass Pass Pass Pass Pass Pass	ω		Pieces	
Non-Destructive Testing	DRL		Length	
Res. Mag. Visual OD UT UT ET HydroTest Gauss Insp. WT ASTM E213 ASTM 1890 PSI/ 5 s	104.1	lb/ft	Mass	
Non-Destructive Testing	G	μR/hr	Geiger	
Non-Destructive Testing OD UT UT ET HydroTest WT ASTM E213 ASTM 1890 PSI/ 5 s Pass Pass Pass Pass Pass	<10	Gauss	Res. Mag.	
Non-Destructive Testing UT UT ET HydroTest WT ASTM E213 ASTM 1890 PSI/ 5 s	Pass	Insp.	Visual	
ET HydroTest 3 ASTM 1890PSI/ 5 s Pass Pass	Pass		OD	N
ET HydroTest 3 ASTM 1890PSI/ 5 s Pass Pass	Pass	TW	TU	on-Destruc
ET HydroTest ASTM 1890PSI/ 5 s	Pass	ASTM E213	TU	tive Testing
18 1	Pass	ASTM	띡	
End Condition		1890PSI/ 5 s	HydroTest	
	32.5° Bevel	Condition	End	

		BSM-1618	Heat	
	Degas, rully Allieu	Blast Furnace; EAF; Ladle Refining; Vacuum	Steelmaking Method	
Product		Heat	Test Type	
0.22	2	0.19	C	
0.96	200	0.83	Mn	
0.22 0.96 0.013 0.008	2000	0.015	Ъ	
0.008	2000	0.010	S	Chemical
0.28	3	0.22	Si	Chemical Analysis (wt%)
0.05		0.05	Cr	wt%)
0.01		0.01	Си	
0.00			Mo	
0.04		0.04	N	
0.002			<	
0.003			Ti	
0.001			Nb	
0.0003			В	
0.40	Т	ı	CE(IIW)	
0.40		1	CE(CSA)	

								0.000	
0.00	0.61	72,000	43,600	Longitudinal; 38.1 mm x WT	Pass	73 HRBW	Ferrite & Pearlite	Heat	BSM-1618
	(Rt0.5/Rm)	psi	psi	50mm GL					
-	Υ/Τ	Tensile (Rm)	Yield (Rt0.5)	Tension Test	Flattening Test	Hardness	Microstructure	Test Type	Heat
		CONTRACTOR OF THE CONTRACTOR O		Mechanical Properties					

Heat	Test	Impact Test	Temp		Impact	Energy			% Shea	ıear			Lateral Ex	pansion	
	Standard	Sample Details	၁°	٠	ſ	٦	AVG	%	%	%	AVG	mm	mm	mm	AVG
BSM-1618	ı	1	ı	1	ı	ı	1		ι	ı	ı	1	,	,	

Additional Details:

- \checkmark We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing Inc. in and that the results meet the corresponding requirements. accordance with API 5L-45th Ed., ASTM/ASME A/SA106-2013 Grade B/C A/SA53-2012, and the purchase order requirements
- \checkmark 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.
- \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:

2014 FEB 12

Paul Sowden, T.T.

Assistant QA Manager