

Mill Test Certificate

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Seamless Carbon Steel Pipe Product Heat Number: BSM-2298 Product Size: 30XS Production Date:

Product Heat Treatment: As-rolled Certificate No.: MTR- 001638

ASME B36.10-2004, API 5L-45th Ed. Grade B PSL1, ASTM/ASME A/SA33-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C NDE, A53-2012/SA53-2013 Grade B Type S, NACE MR0175-2009 MR0103-2012

Hot Expansion

Product Standards: Production Method:

Product:

<API & L/C No.> API SPEC 5L NPS 30 XS 0.500 INCHWT GR B PSL1 SMLS 2015/03 NDE 800PSI

Product Markings Product: Details HEAT BSM-2298 (PIPE # LENGTH MASS) 157.5Ib/ft ASTM/ASME A/SA333 GR 6 LT(M45C) A/SA106 GR B/C A/SA53 GR B NACE MR0175/MR0103 MADE IN CANADA Non-Destructive Testing

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BSM-2298		Heat			BSM-2298		Heat	
Blast Furnace; EAF Degas; Fully Killed		Ste			Heat	Test Type		
Blast Furnace; EAF; Ladle Refining; Vacuum Degas; Fully Killed		Steelmaking Method			NPS 30 XS 0.500in. WT		Product Size	
Product 0.16	Heat	Test Type			VT		P:	
0.16	0.18	С			5		Pieces	
1.27	1.24	Mn			DRL		Length	
0.016 0.007	0.020	P			157.5	lb/ft	Mass	
0.007	0.007	S	Chemical Analysis (wt%)		<5	μR/hr	Geiger	
0.31	0.28	Si	nalysis (v		^			
0.05	0.06	Cr	vt%)		<10	Gauss	Res. Mag.	
0.01	0.01	Cu			Pass	Insp.	Visual	
0.01	0.01	Mo			Pass		90	The second secon
0.04	0.04	N:			Pass	WT	Ч	
690.0	0.060	٧	5		Pass	ASTM	5	
0.002	0.001	Ti			S	ASTM E213 ASTM		,
0.001	0.001	Мb			Pass	ASTM	띄	
0.0005 0.40	0.0005	В			Pass	800 PSI/	HydroTest	
0.40	r	CE(IIW)			3,	5 s C	est	
0.40	-) CE(CSA)			32.5° Bevel	5 _S Condition	End	

Heat Test Type Microstructure Hardness Flattening Test Flower F			Ηŧ		BSM-2298		Ηŧ			
Microstructure Microstructure			eat		298					
Microstructure Hardness Flattening Test Sample Details Flattening Test Tension Test Flattening Test Flattening Test Flattening Test Flattening Test Tension Test Flongatio Tensile (Rt0.5) Tensile (Rm) Flongatio Yield (Rt0.5) Ferrite & Pearlite Pass Longitudinal; 38.1 mm x WT Flongatio Tensile (Rm) Flongatio Yield (Rt0.5) Flongile (Rm) Flongatio No.71 AVG May May May May May May May Ma	Standard		Test		Heat		Test Type			
Hardness Flattening Test Tension Test 50mm GL psi psi (Rt0.5) Tensile (Rm) Y/T Elongatio psi psi (Rt0.5/Rm) 82 HRBW Pass Longitudinal; 38.1 mm x WT 53,500 75,000 0.71 46 Impact Test Temp Impact Energy Shear AVG mm mm mm		rd			Ferrite & Pear		Microstructu			
Temp Impact Energy Tensile (Rm) Flattening Test Tension Test S0mm GL S3,500 Tensile (Rm) V/T Elongatio % % AVG mm mm mm mm mm mm mm		Samp	lmp		rlite		ure			
Mechanical Properties Tension Test Tension Test Somm GL Yield (Rt0.5) Tensile (Rm) Y/T Elongation Square Longitudinal; 38.1 mm x WT 53,500 75,000 0.71 46 Impact Energy % Shear Lateral Expansion J J AVG % AVG mm mm mm mm		le Details	act Test		82 HRBW		Hardness			
Mechanical Properties Tension Test Tension Test Somm GL Yield (Rt0.5) Tensile (Rm) Y/T Elongation Seption Longitudinal; 38.1 mm x WT 53,500 75,000 0.71 46 Impact Energy % Shear Lateral Expansion mm J J AVG % AVG mm mm mm mm		°C	Temp		Pass		Flattening Test			
Maxwar Yield (Rt0.5) Tensile (Rm) Y/T Elongation m x WT 53,500 75,000 0.71 46 AVG % % AVG mm mm mm mm		J			_			Mechar		
Maxwar Yield (Rt0.5) Tensile (Rm) Y/T Elongation m x WT 53,500 75,000 0.71 46 AVG % % AVG mm mm mm mm	2000	L	Impact		ongitudin	5	Tei	nical Prope		
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Yield (Rt0.5) Tensile (Rm) Y/T Elongatio psi psi (Rt0.5/Rm) % 53,500 75,000 0.71 46 % Shear Lateral Expansion % % AVG mm mm mm	200	AVG			m x WT					
Tensile (Rm) Y/T Elongatio psi (Rt0.5/Rm) % 75,000 0.71 46 ear Lateral Expansion % AVG mm mm mm	2	%					Yie			
Tensile (Rm) Y/T Elongatio psi (Rt0.5/Rm) % 75,000 0.71 46 ear Lateral Expansion % AVG mm mm mm		%	% Shear	% St	% Sh		53,500	psi	id (Rt0.5)	
Y/T Elongatio (Rt0.5/Rm) % 0.71 46 Lateral Expansion mm mm mm		%		40	75,	_				
T Elongatio //Rm) % 71 46 Lateral Expansion mm mm		AVG			,000	osi	le (Rm)			
Elongatio % 46 eral Expansion mm mm		mm	Lateral Expansion		0.71	(Rt0.5/	γ/τ			
1		mm				Rm)				
ion (A)		mm			46	%	Elongati			
		AVG				2000101	on (A)			

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/SA333-2013 Grade 6 LT(M45C) A106-2014/SA106-2013 Grade B/C A53-2012/SA53-2013, and the purchase ISO-9001:2008 and API Q1 order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to
- √ This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour Service-2009 NACE MR0103-2012 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.

Seamless Carbon Steel Pipe

Product:

Product Heat Number:

BSM-2298

Product Size: 30XS

Production Date: Mar 13, 2015