

Mill Test Certificate

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

Product: Seamless Carbon Steel Pipe Product Heat Number:

BSM-0708

Product Size:

NPS 24 STD

Production Date: February 13, 2013

Production Method: Hot Expansion Product Heat Treatment: As-rolled

Product Standards: ASME B36.10-2004, API 5L-44th Ed. Grade B PSL1, ASTM/ASME A/SA106-2011 Grade B/C NDE, A/SA53-2012 Grade B Type S, NACE MR0175-2009, MR0103-2010

Product Markings: .BRI-STEEL MFG <API> 5L-0898 API 5L GR B PSL1 ASTM/ASME A/SA106 GR B/C A/SA53 GR B NPS 24 STD 0.375 inchWT HEAT BSM-0708 (PIPE # LENGTH MASS) 94.62lb/ft NDE 740 PSI SMLS NACE MR0175 2013/02 MADE IN CANADA.

BSM-0708	Heat		
Heat	Test Type		
24	NPS		P
STD	Thickness	Wall	Product Detail
7	Pieces		S
DRL	Length		
94.62	lb/ft	Mass	
S.	μR/hr	Geiger	
<20	Gauss	Res.Mag.	
Pass	Insp.	Visual	
Pass	OD		Non-Destruct
Pass	WT	TU	estructive T
Pass	ASTM E213	TU	esting
Pass	ASTM E309	ET	
Pass	740 psi/5s	HydroTest	
37.5° Bevel	Condition	End	

Chemical Analysis (wt%) Heat Steelmaking Method Analysis C Mn P S Si Cr Cu Mo Ni V Ti Nb B (IIW) (CSA) Blast Furnace; EAF; Ladle Refining; Heat 0.19 0.86 0.008 0.008 0.024 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37 0.38 Vacuum Degas; Fully Killed Product 0.20 0.89 0.008 0.008 0.24 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37 0.38 CE CE CE CE CE CE CE	_				
Chemical Analysis (wt%) Analysis C Mn P S Si Cr Cu Mo Ni V Ti Nb B (IIW) Heat 0.19 0.86 0.008 0.005 0.24 0.03 0.10 0.02 0.05 0.0003 - Product 0.20 0.89 0.008 0.008 0.24 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0,00	RSM-0708	Heat		
Chemical Analysis (wt%) C	Degas; Fu	Blast Furnace; EAF; Ladle Refining;	Steelmaking Method		
Chemical Analysis (wt%) Mn P S Si Cr Cu Mo Ni V Ti Nb B (IIW) 0.86 0.008 0.005 0.24 0.03 0.08 0.02 0.05 0.0003 - 0.89 0.008 0.24 0.03 0.10 0.02 0.04 0.002 0.01 0.001 0.0002 0.37	Product	Heat	Analysis		
Chemical Analysis (wt%) P S Si Cr Cu Mo Ni V Ti Nb B (IIW) 0.008 0.005 0.24 0.03 0.08 0.02 0.05 0.0003 - 0.008 0.008 0.24 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0.20	0.19	С		
Chemical Analysis (wt%) S Si Cr Cu Mo Ni V Ti Nb B (IIW) 0.005 0.24 0.03 0.08 0.02 0.05 0.0003 - 0.008 0.24 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0.89	0.86	Mn		
Cr Cu Mo Ni V Ti Nb B (IIW) 0.03 0.08 0.02 0.05 0.0003 - 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0.008	0.008	P		
Cr Cu Mo Ni V Ti Nb B (IIW) 0.03 0.08 0.02 0.05 0.0003 - 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0.008	0.005	S		Chemical
Cr Cu Mo Ni V Ti Nb B (IIW) 0.03 0.08 0.02 0.05 0.0003 - 0.03 0.10 0.02 0.04 0.002 0.001 0.001 0.0002 0.37	0.24	0.24	Si		Analysis
Mo Ni V Ti Nb B (IIW) 0.02 0.05 0.0003 - 0.002 0.04 0.002 0.001 0.001 0.0002 0.37	0.03	0.03	Cr		(wt%)
Ni V Ti Nb B (IIW) 0.05 0.0003 - 0.001 0.0002 0.37	0.10	0.08	Cn	10000	
V Ti Nb B (IIW) 0.0003 - 0.001 0.0002 0.37	0.02	0.02	Mo		
Ti Nb B (IIW) 0.0003 - 0.001 0.0002 0.37	0.04	0.05	N.		
Nb B (IIW) - 0.0003 - 0.001 0.0002 0.37	0.002	1	<		
CE B (IIW) 0.0003 - 0.0002 0.37	0.001	-	Ti		
CE (IIW)	0.001		Nb		
	0.0002	0.0003	В		
CE (CSA)	0.37	ı	(IIW)	CE	
	0.38	1	(CSA)	CE	

	BSM-0708	Heat		
	BSM-0708 Heat	Test Type		
	Ferrite & Pearlite	Microstructure		
	79	HRBW	Hardness	
	Pass	Flattening Test		Mechan
Longitudinal; 38.1mm x WT	Transverse; 38.1mm x WT	50mm GL	Tension Test	Mechanical Properties
46,600	46,500	psi	Yield (Rt0.5)	
46,700	46,600	psi	Yield (Rp0.2)	
71,000	72,000	psi	Tensile (Rm)	
0.66	0.65	(Rt0.5/Rm)	Υ/Τ	
43	43	%	Elongation (A)	

Additional Details:

and that the results meet the corresponding requirements. Inc. in accordance with API 5L-44th Ed., ASTM/ASME A/SA106-2011, A/SA53-2012 and the purchase order requirements, We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing

Service, and NACE MR0103-2010 Section 2.1 This pipe product meets the sour service requirements of NACE MR0175/ISO 15156-2:2009 Annex A2 for Region 3 Sour

✓ No weld repairs have been performed on this product.

This certificate represents a quality control system that is compliant with EN 10204:2004 Type 3.1 This product has not come into contact with mercury during the Bri-Steel Manufacturing processes

Mill Test Certificate approved by:

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

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