



Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-2792 Product Size: NPS 24 TRUE 40 Production Date: Jun 08, 2016
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 002860
 Product Standards: ASME B36.10M-2015, ASTM/ASME A106-2014/SA106-2015 Grade B NDE, AS3-2012/SAS3-2015 Grade B Type S, NACE MR0175/ISO 15156-2:2009 MR0103/ISO 17495:2015
 Product Markings: NPS 24 TRUE 40 0.688 INCHWT SMLS 2016/06 NDE 1400PSI
 HEAT BSM-2792 (PIPE # LENGTH MASS) 17.1.2lb/ft ASTM/ASME A/SA106 GR B 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	Gelger μR/hr	Res. Mag. Gauss	Visual Insp.	OD	UT WT	UT ASTM E213	ET ASTM E309	HydroTest 1400PSI/ 5 s	End Condition	
BSM-2792	Heat	NPS 24 TRUE 40 0.688in. WT	4	DRL	171.2	<5	<20	Pass	Pass	Pass	Pass	N12.5 Pass	-	Pass	Plain End

Heat	BSM-2792	Steelmaking Method Blast Furnace: EAF; Ladle Refining: Vacuum Degass; Fully Killed	Chemical Analysis (wt%)																		
			Test Type		C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(IIW)	CE(IIW)Max	CE(CSA)	
			Heat	Product	0.16	0.88	0.012	0.002	0.25	0.11	0.09	0.03	0.06	0.010	0.003	0.002	0.0001	0.35	-	0.34	
						0.15	0.84	0.011	0.003	0.25	0.11	0.08	0.03	0.06	0.003	0.002	0.001	0.0002	0.33	-	0.32

Mechanical Properties									
Heat	Test Type	Microstructure	Hardness	Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-2792	Heat	Ferrite & Pearlite	74 HRBW	Pass	Longitudinal; 1.5 in. x WT	43 700	67 000	0.65	43

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J) (3 Tests) AVG	Impact Energy (J) (3 Tests) AVG	Shear (%) (3 Tests) AVG	Lateral Expansion (mm) (3 Tests) AVG
BSM-2792	-	-	-	-	-	-	-	-

Additional Details:
 ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with ASTM/ASME A106-2014/SA106-2015, AS3-2012/SAS3-2015, and the purchase order requirements, and that the results meet the corresponding requirements. Bri-Steel Manufacturing is registered and certified to ISO-9001:2008 (APIQR-1584), 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/ISO 17495:2015 Section 13.1

- ✓ 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:

Tonya Lam June 14 / 2016

Tonya Lam, P. Tech (Eng.)
 Assistant QA Manager