




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-3041 Production Date: Feb 06, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003146
 Product Standards: ASME B36.10M-2015, API SL-45th Ed. GradeB PSL1, ASTM/ASME A106-2014/SA106-2015 Grade B NDE, A53-2012/SA53-2015 Grade B Type S, NACE MR0175/ISO 15156-2-2009
 MR0103/ISO 17495:2015
 Product Markings:  <API & L/C No. > API SPEC 5L NPS 20 STD 0.375 INCHWT GRB PSL1 SMLS 2017/02 NDE 800PSI
 HEAT BSM-3041 (PIPE # LENGTH MASS) 78.71lb/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	DRL	78.71	Geiger	Res. Mag. Gaus	Visual Insp.	OD	UT (WT) ASTM E114	UT ASTM E213	ET ASTM E309	HydroTest 800PSI/ 5s	End Condition
BSM-3041	Heat	NPS 20 STD 0.375in. WT	3	DRL	78.71	<5	<22	Pass	Pass	Pass	Pass	Pass	N12.5 Pass	-	Pass	35° Bevel

Heat	BSM-3041	Blast Furnace, EAF, Ladle Refining, Vacuum Degass; Fully Killed (at TRCO China)	Chemical Analysis (wt%)																	
			Test Type	C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(I/W)	CE(II/W)Max	CE(CSA)	
Heat	Product		0.19	0.93	0.011	0.008	0.23	0.03	0.01	0.01	0.01	0.01	0.01	0.004	0.001	0.001	0.0001	0.36	-	0.36
			0.22	0.91	0.013	0.009	0.23	0.03	0.01	0.00	0.01	0.004	0.001	0.004	0.001	0.001	0.0002	0.38	-	0.39
			0.22	0.91	0.013	0.011	0.23	0.03	0.01	0.00	0.01	0.004	0.001	0.004	0.001	0.0002	0.38	-	0.39	

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-3041	Heat	Ferrite & Pearlite	78 HRBW	Pass	Longitudinal; 1.5 in. x WT	47 400	76 000	0.62	41

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)	Impact Energy Results (J)	Shear (%)	Lateral Expansion (mm)
BSM-3041	-	-	-	-	(3 Tests) AVG	(3 Tests) AVG	-	(3 Tests) AVG

- Additional Details:
- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API SL-45th Ed., ASTM/ASME A106-2014/SA106-2015, A53-2012/SA53-2015, 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 2014/68/EU.
 - ✓ 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:

T. Lam Feb 10 2017

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