




Mill Test Certificate

Bri-Steel Manufacturing
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Product: Seamless Carbon Steel Pipe Product Heat Number: BSM-3075 Product Size: NPS 24 SCH 100 Production Date: Mar 07, 2017
 Production Method: Hot Expansion Product Heat Treatment: Normalizing Forming Certificate No.: MTR- 003197
 Product Standards: ASME B36.10M-2015, API 5L-45th Ed. GradeB PSL1, ASTM/ASME A333-2016/SA333-2015 Grade 6 LT(M45C) A106-2014/SA106-2015 Grade B/C 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 24 SCH 100 1.531 INCHWT GRB PSL1 SMLS 2017/03 NDE 2800PSI
 HEAT BSM-3075 (PIPE # LENGTH MASS) 367.76lb/ft ASTM/ASME A/SA333 GR 6 LT(M45C) A/SA106 GR B/C 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	Galiger	Res. Mag. Gauss	Visual Insp.	OD	UT (WT)	UT	ET	HydroTest	End Condition
BSM-3075	Heat	NPS 24 SCH 100 1.531in. WT	3	DRL	367.76	<5	<10	Pass	Pass	ASTM E114	ASTM E213	ASTM E309	2800PSI/ 5 s	Plain End

Heat	Steelmaking Method	Test Type	Chemical Analysis (wt%)															
			C	Mn	P	S	Si	Cr	Cu	Mo	Ni	V	Ti	Nb	B	CE(l/w)	CE(l/w)Max	CE(CSA)
BSM-3075	Blast Furnace, EAF, Ladle Refining, Vacuum Degass, Fully Killed (at HYST Vallin China)	Heat	0.15	1.09	0.012	0.002	0.27	0.06	0.06	0.02	0.02	0.052	0.002	0.001	0.0002	0.36	-	0.35
		Product	0.15	1.06	0.013	0.003	0.27	0.03	0.06	0.02	0.02	0.054	0.004	0.001	0.0004	0.35	-	0.34
			0.15	1.04	0.013	0.003	0.26	0.03	0.07	0.02	0.054	0.004	0.001	0.0004	0.35	-	0.34	

Heat	Test Type	Microstructure	Hardness	Mechanical Properties					
				Flattening Test	Tension Test 2 in. GL	Yield (Rt0.5) psi	Tensile (Rm) psi	Y/T (Rt0.5/Rm)	Elongation (A) %
BSM-3075	Heat	Ferrite & Pearlite	75 HRBW	Pass	Longitudinal; 0.5 in. Round Bar	48 100	72 500	0.66	43
				Pass	Longitudinal; 0.5 in. Round Bar	47 500	71 500	0.66	42

Heat	Test Standard	Result	Impact Test Sample Details	Temp °C	Impact Energy Min. (J)		Shear (%)	Lateral Expansion (mm)
					(3 Tests) AVG	(3 Tests) AVG		
BSM-3075	ASTM A333	Pass	CVN Long 10 x 10 mm	-45	(14/14/14) 18	(154/145/142) 147	(80/80/80) 80	(2.50/2.21/2.04) 2.25

Additional Details:

- ✓ We hereby certify that this pipe product was manufactured, sampled, tested and inspected by Bri-Steel Manufacturing in accordance with API 5L-45th Ed., ASTM/ASME A333-2016/SA333-2015, 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.

Mill Test Certificate approved by:

T. Lam *MAR/09/2017*

- ✓ 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.

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