ITEM 8

HENGYANG VALIN STEEL TUBE CO.,LTD

MILL TEST CERTIFICATE

(ACCORDING TO EN10204-2004 3.1)

Add: 10 Dalixincun, Hengyang City,Hunan,P.R.China P.C.:421001
Tel and Fax: +86 734 8873739
E-mail: hsiec@hysteeltube.com

CUSTOMER			CERTIFICATE NO.	C201854335-4	
CONTRACT-ITEM NO.	2111003615- 01	P.O.NO. 45391		DATE: 2018-11-28	PAGE: 1/3
PRODUCT	SEAMLESS STEEL LINE PIPE		DELIVERY CONDITION	N	
SPECIFICATION	SEE SPECIFICATION NOTE	HEAT TREATMENT		≥900℃,COOLING IN STILL AIR	
GRADE	BN		DIMENSIONS	2" Sch 80/XS DRL	
TOTAL BUNDLES: 68	TOTAL PIECES: 1324	TOTAL LENGTH: 15226.000 m		TOTAL WEIGHT : 113.868 mt	

NO.	BATCH No.	HEAT No.	BUNDLES	PIECES	LENGTH m	WEIGHT mt W1	TENSILE TEST ASTM A370 SAMPLE TYPE/ ORIENTATION / SIZE(mm/GAUGE LENGTH(mm):S\L\19\50 TS(MPa)	YS(MPa)	RT0.5	EL(%)	R.A. (%)	YS/TS	BEND TEST
16	9HY173110	1828084	14	272	3128.000	23.393	466	318		34.5		0.68	ACCEPTABLE
17	9HY173120	1828084	14	272	3128.000	23.393	461	313		35.0		0.68	ACCEPTABLE
18	9HY173130	1828083	14	276	3174.000	23.737	454	310		36.0		0.68	ACCEPTABLE
19	9HY173140	1828083	14	276	3174.000	23.737	448	302		37.0		0.67	ACCEPTABLE
20	9HY173150	1816332	12	228	2622.000	19.608	462	312		36.0		0.68	ACCEPTABLE

NO.	IMPACT TEST NOTCH TYPE/ORIENTATION/TEMPERATURE(℃)/SIZE (mm) : V8/L/0℃/10*3.3*55 AK1 (J)	Av.(J)	% SHEAR AREA	LE	AK2 (J)	Av.(J)	% SHEAR AREA	LE	NON METALIC INCLUSION	GRAIN SIZE	HARDNESS TEST HRB
16	61/64/68	64			/					8	74.5//////////
17	59/57/62/	59			/					8	76.8//////////
18	61/65/67	64			/					8	76.9//////////
19	53/57/54	55			/					8	76.3//////////
20	58/57/62	59			/					8	75.3//////////

NOTES:

W1--THEORETICAL WEIGHT
W2--ACTUAL WEIGHT
NR--NORMALIZING ROLLED
AK1--ABSORB ENERGY FOR THE FIRST SET

SAMPLE ORIENTATION : L--LONGITUDINAL T--TRANSVERSE
SAMPLE TYPE: S---STRIP C-- CLUBBED F--FULL-SECTION
Q&T--QUENCHING AND TEMPERING
AK2--ABSORB ENERGY FOR THE SECOND SET

N--NORMALIZING
A--ANNEALING
Av.--AVERAGE
LE--SIDE EXPANSION

HE--HOT EXPANDED
HR--HOT ROLLED
N&T--NORMALIZING AND TEMPERING

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CHEMICAL COMPOSITION (%)

NO.	HEAT No. / BATCH No.	Type	C	Si	Mn	Cr	Mo	W	Cu	Ni	P	Al	Sn	As	Pb	Sb	Nb	Ti	Zr	N	Bi	S	V	B	Ca	CE	SUM1	SUM2	SUM3	R1	R2	R3
			*100			*1000																*10000				*100	*1000					
	P																															
16	1828084	H	13	30	99	44	16		33	17	13						1	2				79	47	2		31	114.7	5.7	7.7			
	9HY173110	P	9	27	100	59	20		45	18	13						1	2				73	73	0.1		16	149.3	8.3	10.3			
	9HY173110	P	10	27	99	59	20		45	18	13						1	2				82	74	0.1		17	149.4	8.4	10.4			
17	1828084	H	13	30	99	44	16		33	17	13						1	2				79	47	2		31	114.7	5.7	7.7			
	9HY173120	P	10	27	100	59	19		45	17	12						1	2				67	73	0.3		17	147.3	8.3	10.3			
	9HY173120	P	10	28	98	58	20		45	17	13						1	2				86	72	0.1		17	147.2	8.2	10.2			
18	1828083	H	12	30	101	43	16		33	16	13						1	2				77	45	2		19	112.5	5.5	7.5			
	9HY173130	P	11	28	99	60	21		46	19	13						2	2				88	75	0.4		18	153.5	9.5	11.5			
	9HY173130	P	11	28	99	61	21		46	19	14						3	2				94	76	0.4		18	154.6	10.6	12.6			
19	1828083	H	12	30	101	43	16		33	16	13						1	2				77	45	2		19	112.5	5.5	7.5			
	9HY173140	P	10	28	101	60	21		46	18	13						1	2				72	75	0.1		17	152.5	8.5	10.5			
	9HY173140	P	11	28	98	60	20		45	19	13						2	2				77	76	1		18	151.6	9.6	11.6			
20	1816332	H	13	33	98	42	17		51	21	10						1	3				67	69	2		31	137.9	7.9	10.9			
	9HY173150	P	11	28	101	60	21		46	19	14						2	2				77	75	0.1		18	153.5	9.5	11.5			
	9HY173150	P	11	28	98	60	21		44	19	13						2	2				80	73	1		18	151.3	9.3	11.3			

NON-DESTRUCTIVE TEST

POSITION	PIPE BODY	PIPE END	END SURFACE(GROOVE)	BEVELLING
NDT Type(Level)(100%)	ET/E3H			ACCEPTABLE
	EMI/L4			VISUAL & DIMENSION
LAMINAR				ACCEPTABLE
TEST RESULT	ACCEPTABLE	N/A	N/A	COATING
RESIDUAL MAGNETISM	≤25 GS	ACCEPTABLE		
UT THICKNESS MEASUREMENT		N/A		
HYDROSTATIC TEST Min(MPa/s)	17.0/6	ACCEPTABLE		ACCEPTABLE

NOTES: H--HEAT ANALYSIS P--PRODUCT ANALYSIS CE--EQUIVALENT CARBON R--RATIO R1=Ca /S R2=Al /N R3=Mn /C

CEIIW=C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15 CEPCM=C+Si/30+(Mn+Cr+Cu)/20+Ni/60+Mo/15+V/10+5*B SUM1=Cr+Cu+Mo+Ni+V SUM2=Nb+V SUM3=Nb+V+Ti

ET-ISO10893-2-2011、UT-ISO10893-10-2011、MPI-ISO10893-5-2011、EMI-ISO10893-3-2011、WT-ISO10893-12-2011、LaminationT-ISO-10893-8-2011

L4/L3/L2--ACCEPT. LEVEL L4/L3/L2,NOTCH DEPTH IS 12.5% /10% /5% THE SPECIFIED WALL THICKNESS.

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TOTAL BUNDLES: 68	TOTAL PIECES: 1324		TOTAL LENGTH: 15226.000 m	TOTAL WEIGHT : 113.868 mt	

REMARK : 1.ORIGIN: MADE IN CHINA; 2.ALL ELEMENTS TO BE LISTED; 3. STEEL IS FULLY KILLED & PRODUCED BY ELECTRIC ARC FURNACE TO FINE GRAIN PRACTICE; 4.NORMALIZED AT ABOVE 900℃ AND FOLLOWED BY COOLING IN STILL AIR

SPECIFICATION NOTE	API 5L 45th PSL2/ASME B36.10/NACE MR 0175/ISO15156 ONLY FOR HARDNESS/ASTM A106 GR. B(MANUFACTURE ONLY AS PER API 5L 45TH STANDARD)

We hereby certify that material herein described has been manufactured in accordance with the standards and specifications required in your order and satisfies the corresponding requirements.

This certificate is issued by a computerized system and it is valid with electronic signature. In case the owner of the certificate would release a copy of it ,he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use.

Any alteration and/or falsification will be subject to the law.

If you need to assure the authenticity of this certificate ,please do not hesitate to contact Hengyang Valin Steel Tube CO.,LTD, E-mail: hsiec@hysteeltube.com

CUSTOMER THIRD PARTY

Quality Manager:

HENGYANG VALIN STEEL TUBE CO.,LTD. 衡阳华菱钢管有限公司 D2 HUNAN CHINA

Certificate-maker: 叱媛洁