PREQULIFICATION Supplier Approval Application

TK PIPING



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Chapter 1. Company Profile

1. Introduction

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Chapter 1. COMPANY INTRODUCTION

TK PIPING has grown to be a one of the largest stockiest and distributor in Korea of industrial fittings, pipe, flange and valves in the LNG Power, Petrochemical Plant, construction and process industries.

TK PIPING has main Office in Gasan-dong, Seoul, Korea and one warehouse in Hwasung, Korea.

Since establishment, TK Piping has established very close relationship with EPC and sub constructor as BUMJIN E&C, JUNGHO E&C, SUNGDO E&C etc.

We has grown a power of procurement through agent with global manufacturer such as ERNE FITTING, HUSTEEL , DEAKYUNG BEND, LONGSHAN PIPING SOLUTION, HANKUK VALVE and OS VALVE etc.

We strive to satisfy 100% of our clients' needs with continuous effort for technological development, innovation, and enhanced quality of our products.

TK Piping values building trust and relationship with our clients, and we truly look forward to developing businesses together in the future.

COMPANY OVERVIEW

Founded	Sep 13 th . 2018
Presidents	Kim Seongap
Employee	11 persons
Address	#413, Leaders Tower, 286, Beotkkot-ro, Geumcheon-gu, 08511, Korea
Warehouse	686 Seokpori Janganmyeon Hwasung-si, Gyeonggi-do, Korea
Contact Tel.	+82-2-858-8534 (Rep.)
Fax.	+82-2-858-8546 (Fax)
e-mail.	tkp@tkpiping.com

COMPANY OVERVIEW - LOCATION

SEOUL OFFICE

#413, Leaders Tower, 286, Beotkkot-ro, Geumcheon-gu, 08511, Korea

WAREHOUSE

686, Seokpo-ri, Seokpo-myeon, Bonghwa-gun, Gyeongsangbuk-do, Republic of Korea

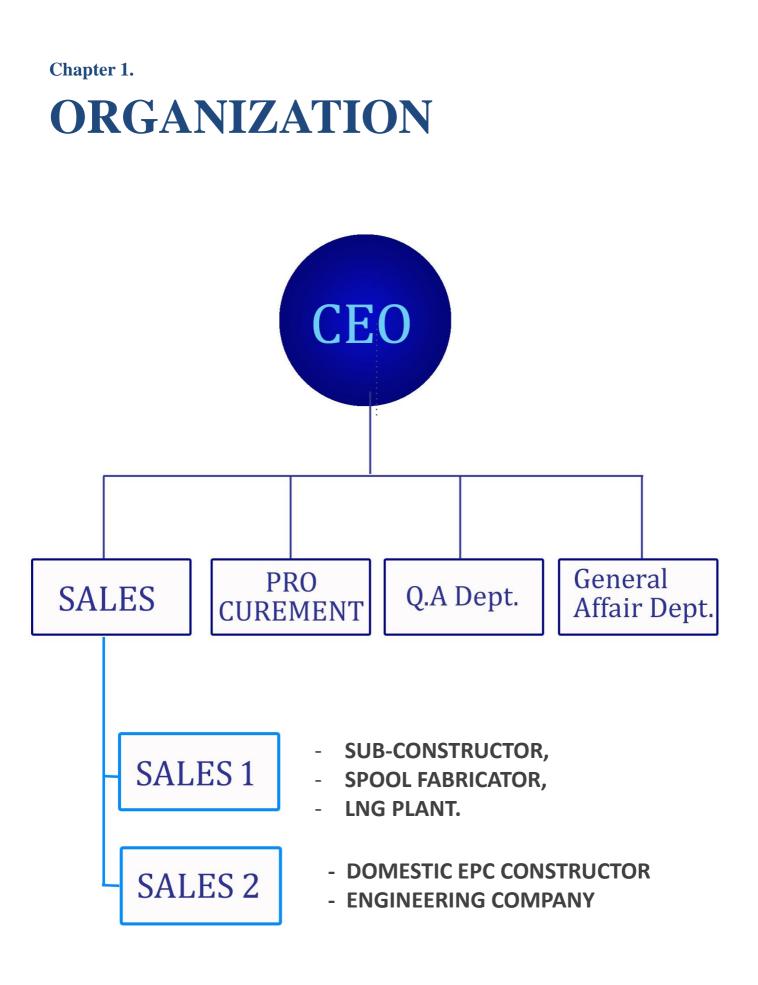
VIETNAM Branch

Vung Tau Province, VIETNAM





TK PIPING CO., LTD



BUSINESS LICENSE



사 업 자 등 록 증

(법인사업자) 등록번호 : 867-81-01338

법인명(단체명) : 티케이파이핑 주식회사 대 표 자 : 김선갑

개 업 연 월 일 : 2018 년 09 월 13 일 법인등록번호 : 110111-6870673 사업장 소재지 : 서울특별시 금천구 벚꽃로 286, 413호(가산동, 리더스타워)

본 점 소 재 지 : 서울특별시 금천구 벚꽃로 286, 413호(가산동, 리더스타워)

VTS

종목 철강재 , 스테인레스

수출입업

X

배관자재, 파이프

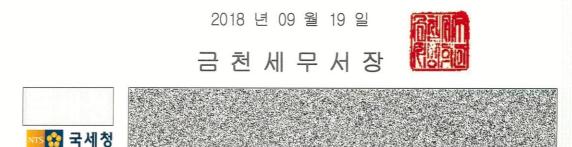
사업의 종류 : 업태 도소매

발 급 사 유 : 신규

사업자 단위 과세 적용사업자 여부 : 여() 부(∨) 전자세금계산서 전용 전자우편주소 :

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도소매



QUALITY CERTIFICATE



Chapter . 2 Sales Products & Sample MTC

Sales Products
 Sample Mill Test Certificates



1. SALES PRODUCTS

Fittings

- Wrought Fitting
- Forged Fitting

PIPE - SMLS PIPE - Welded PIPE



Flange

- Blind Flange
- W/N Flange

Etc

- Valve
- Gasket
- GRP Piping
- HDPE Piping

1. SALES PRODUCTS

FITTING

CARBON / STAINLESS / LOW ALLOY / DUPLEX/ NICKEL ALLOY

ASTM A234 WPB,WP11/22/91/92, ASTM A403 TP304/L, 316/L, A105, A182

Manufacturer	Size Range	Country
ERNE FITTINGS	1/2" ~ 40"	AUSTRIA
LONGSHAN PIPING SOLUTION	1/2" ~ 56"	CHINA
SHENYANG UNIWEL MACHINERY	1/2" ~ 56"	CHINA
TIANNING METAL PIPE FITTING	1/2" ~ 56"	CHINA
TK(TAEKWANG) BEND	1/2" ~ 56"	KOREA
DAEKYUNG BEND	1/2" ~ 56"	KOREA
SK(SUNGKWANG) BEND	1/2" ~ 56"	KOREA
SBC BEND	1/2" ~ 56"	KOREA
PUSAN FITTING	1/2" ~ 56"	KOREA
SAMKYOUNG FITTING	1/4" ~ 4"	KOREA
SAMOH FITTING	1/4" ~ 4"	KOREA

TK PIPING CO., LTD

1. SALES PRODUCTS

PIPE

CARBON / STAINLESS / LOW ALLOY / DUPLEX/ NICKEL ALLOY

A53 Gr. B, A106 Gr. B, API5L Gr. B/X42/X65 A335 Gr.P11 / P22 / P91 / P92 A312 TP304 / 316 /L

Manufacturer	Size Range	Country
TENARIS	1/2" ~ 24"	INTERNATIONAL (ITALY, JAPAN, ARGENTINA)
NSSMC	1/2" ~ 16"	JAPAN
INTERPIPE	1/2" ~ 16"	UKRAINE
TUBOS REUNIDOS	1/2" ~ 6"	SPAIN
PRODUCTOS TUBLARES S.A.	7.1/2" ~ 24	SPAIN
VALCOVNY TRUB CHOMUTOV A.S.	10" ~ 24"	CZECH REPUBLIC
TIANJIN PIPE CORPORATION	2" ~ 24"	CHINA
LONTRIN STEEL TUBE CO.,LTD	1/2" ~ 42"	CHINA
SEAH CHANGWON SPECIAL STEEL	3/8" ~10"	KOREA
TUBACEX	1/2" ~ 8"	SPAIN
ZHONGDA SPECIAL STEEL	1/8" ~ 24"	CHINA

TK PIPING CO., LTD

1. SALES PRODUCTS

PIPE

CARBON / STAINLESS / LOW ALLOY / DUPLEX/ NICKEL ALLOY

A53 Gr. B, API5L Gr. B /X42/X52/ X65, A671, A672, A691 A312 , A358 TP304 / TP316

Manufacturer	Size Range	Country
<u>CS ERW & EFW PIPE</u>		
HUSTEL	1/2" ~ 24"	KOREA
HYUNDAI STEEL	1/2" ~ 24"	KOREA
SEAH STEEL	1/2" ~ 80"	KOREA
DONGYANG STEEL PIPE	16" ~ 122"	KOREA
DAIDUCK PIPING		KOREA
<u>SS WELDED PIPE</u>		
SEAH STEEL	1/4" ~ 56"	KOREA
BNB SUNGWON PIPE CO., LTD.	3/8" ~ 80"	KOREA
LS METAL	1/4" ~ 60"	KOREA

Chapter 2. 1. SALES PRODUCTS

FLANGE VALVE

Welding Neck / Blind / Spectacle / Socket welding/Slip on Flange

GLOBE VALVE / GATE VALVE / CHECK VALVE / BALL VALVE BUTTERFLY / STRAINER

Manufacturer	Size Range	Country
FLANGE		
TK FLANGE		KOREA
A JOO FITTING		KOREA
VALVE		
DONGKANG		KOREA
HANKUK VALVE		KOREA
HWA SHUNG VALVE		KOREA
КМ ТЕСН		KOREA
WONDAE TGK		KOREA
OS VALVE		KOREA

TK PIPING CO., LTD

2. Sample Mill Test Certificate

ERNE FITTING REDUCER A234 WP22 CL.3

2. TK Corporation- TEE A234 WP9 CL.1

HUSTEEL- API 5L GR.B/ X42 ERW PIPE

4. TENARIS- A106 Gr.B SMLS PIPE

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ERNE Fitting MTC

TK corporation MTC

$\in \! D \, \textbf{TK} \text{ corporation}$

INSPECTION CERTIFICATE

(EN10204:2004 3.1 / ISO 10474:1991 3.1B)

117-12, Noksan Saneop Daero, Gangseo-gu, Busan, 46752 Korea Tel : 82-51-970-6666 Fax : 82-51-831-6886

Customer					Certificate N	lo.	20170100514	Date	2017/01/04
P.O No.					Project Nam	e	ERU		
Job No.									
Specification for Material	AST	M A234WP9 CL1 -13e	1 NACE MR0175-	03	Starting Mat	erial	SEAMLESS PIPE		10-04100-01-04100-00
Specification for Inspection	ASM	IE B16.9-2012	an a	518 ×5 1252	Dimension a	ind Visual	Inspection		GOOD
Heat Code No [HCN]	No.		Descript	ions		Q'ty (Pcs)	Heat Treatment	N.D.E (GOOD)	
CZ025H	0012	STRAIGHT TEE	SCH60	B.W	16"	2	N: 910 °C & T: 770 °C	MT	
	1					1 1			

CHEMICAL COMPOSITION(%)

Heat Code No	Spec.	С	Si	Mn	Р	S	Cr	Мо	Raw Heat No		
	Max.	0.15	1.00	0.60	0.030	0.030	10.00	1.10			
[HCN]	Min.	-	-	0.30	-	-	8.00	0.90			
CZ025H	L	0.11	0.39	0.38	0.016	0.003	8.77	0.94	1-44419		

MECHANICAL PROPERTIES

	Casa	Y.S	T.S	E.L		Hardness Tes	t			
Heat Code No	Spec	ks	si	(%)		HB				
[HCN]	Max. Min.	- 30	- 60	- 30		217				
CZ025H	Ρ	83.3	106.3	31.9		200 20	16			
We hereby certify that Any forgery or falsifica on this certificate. Fax: +82 831 6886 / E-I Remark: *PMI TEST	ation of th mail: tkqa	nis certificat	e will be su	de and tes bjected to	sted in accorda the full extent	ance with the abov t of the criminal pro	e specification secution. Plea	and also with the requirement se contact us by the below Fa: Legend: HB.Brinell ST.Soluton_Tre	x or E-mail if yo	u have any inquires AC:Air Cool OC:Oil Cool
								SR:Stress Reli N:Normalized T:Tempered A:Annealed Q:Quenched Y:S:0.2% Offset (G):Hot-Dip Gal		WQ:Water Quenche WC:Water Cool B:Base W:Weld H:Haz L:Ladle P:Product
□Reviewed by:									15	

□Reviewed by: □Witnessed by:

Approved by:

W. S.Kom. Head of Quality Control Dep't

PAGE: 1 / 1 1. (Real 앱을 통해 시 협성적서 원본을 확인할 수 있습니다. CEQ PCM *8. Specimen Size A:10x10mm, B:10x75mm, C:10x66mm, D:10x50mm, E:10x33mm, Direction: Transverse *9.1 P: Thsting Pressure, H.T. : Holding Time *10Heat Treatment Seam Normalizing RESIDUAL MAGNETISM Reference Standard 3.2 & Drilled Hole * 7. B : Base Metal, W : Weld Line, H : Heat Affected Zone GOOD MANAGER OF Q.A TEAM Ti B 10 14 12 Cheel Sang 1100 *2. O.D. : Outside Diameter; W.T. : Wall Thickness *3. Direction: L. : Longitudmal, T. : Transverse *4. Tensile Test - TS : Tensile Strength, YS : Yield Strength, YR : Yield Rato, EL : Elongation, WTS : Weld tensile strength, Gauge Length : 2 inch, YP method : 155% Underload 10 11 16 ЧN 323 205 228 METALLOGRAPHIC TEST V 15 5 9 CHEMICAL COMPOSITION (%) GOOD Mo 23 60 30 본 검사중명서에 명기된 규격용도 외 시용시 안전상 문제가 발생할 수 있으며, 검사중명서 위ㆍ변조시 사문서 위조(형법231조)로 불이익을 당하실 수 있습니다. Cr * 13. NDT : UT 25 18 34 **5 학 성 분** : 영업2팀-16-239 : 160316-0650 Ni 8 21 15 WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ORDER AND ABOVE SPECIFICATION : ㈜ 축스틸 VISUAL& 건스틸 Cu 13 30 38 CRUSH TEST GOOD *12. TPI : Threads per inch, ETL : Effective length of threads s <u>,</u> , , , , , * 6. -2 :x1/100, -3 :x1/1000, -4 :x1/10000, -5 :x1/100000, Tr :Trace Ч 13 12 17 MANUFACTURED No. Mn CERTIFICATE No. 81 101 100 FLATTENING OR BEND TEST REVERSE FLATTENING TEST Si 2 21 22 중명서번호 체조면 수 CUSTOMER GOOD SUPPLIER 본 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다. 종급자 수요가 J 6 7 7 THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.1 (ISO 10474 3.1) DIV цо ¥ 4 4 4 DAEBUL PLANT 3R0; DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUF, YEONGAM-GUN, JEOLLANAM-DO, KOREA INSPECTION CERTIFICATE WTS MPa 520 543 540 N · D · T UT FLANGE TEST GOOD SHINAN B/D 15F, 943-19, DAECHI-DONG, HUSTEEL Co., Ltd. YR 81 80 75 8 *13 EL TENSILE TEST 40 36 39 * 11. WZG : Weight of Zinc Coating. CST : Copper Sulphate Test 인장시험 주식회사 **휴 스틸** KANGNAM-GU, SEOUL, KOREA YS 394 414 387 SIZE *8 MPa ລ(0 IMPACT TEST Energy (Ind, J) * 5. H : Heat analysis, P : Product analysis TS 487 518 514 0 DIR. **н н н** VIQ *7 128.73 140.68140.68<mark>중</mark>랴 WEIGHT kg/m HARDNESS TEST ΗV HEAD OFFICE 6,000 6,000 6,000 W.T LENGT mm mm ORDER SIZE ETL 주문치수 THREADS 9.50 9.50 mm 9.50 CL* Galvanized Threaded Ends Galvanized Threaded& Coupled TPI 0.D 559.0 610.0610.0 nized Threaded Ends mm **Galvanized Plain Ends** ZINC COATING TEST CST TIMES API 5L X-42 PSL1/API 5LB/ 호칭경 NOMINAL SIZE 22 24 24 114 g/m² WZC : E.R.W STEEL PIPE BPEB 1 BPEB BPEB 影 TYPE HEAT TREATMENT GPE GPEB GTE GTC 13 950 950 950 ASTM A53B *10 2016.03.16 ρ PCS 令令 QUAN-TITY BlackThreaded & Coupled BPE Bevelled Black Threaded Ends Black Plain Ends GOOD RESULT GOOD GOOD HYDROSTATIC TEST *1. Type of Pipe Ends SURVEYOR HMC C-30-05-(21) SU64335 SU63159 HEAT_NO N57282 SPECIFICATION 10 10 10 H.T sec 체 품 명 COMMODITY ISSUED DATE K 체품규격 1300 1190 1190 BPE BPEB BTE BTC ISd T.P цш ЮО P/0 No. ./C No. 司 01 02 03 NO. 01 02 03 NO. хогч

HUSTEEL MTC

I HUSTEE

(UNI EN 10204 3.1 / ISO 10474 3.1.B) Date / Data: July 27, 2016 Customer / Cliente: Customer / Cliente Iemmer S Order Item / Rifer. Ordine Cliente - Item / Customer 's Reference / Posizione Cliente Manufacture Process of fabbricazione: ESUN-BBIL-160314.c-198 Date / Data: July 27, 2016 Manufacture Process of fabbricazione: ESUN-BBIL-160314.c-198 Date / Data: July 27, 2016 Manufacture Process of fabbricazione: ESUN-BBIL-160314.c-198 Date / Data: July 27, 2016 Standard or Specification / Norme o specifica: Schedula: SLINE PIPE (CON RICHIESTE SUPPLEMENTS) Even of and / Ordina nr.1 Standard or Specifica: Schedule / Schedula: Even of a nr.2 See note nr.2 Dimension: Schedule / Schedula: Iengin / Lunghezza: Quanity / Ounaits: 10Pcs/Pz Dimension: 2000° O.D.x 0.375° W.T. 20 32.152 ft + 38.714 ft 358.89 ft 355.65,1 lb Biolo.nmm O.D. x 9.35m W.T. 20 9900 mm + 11800 mm 109.39 mt 109.30 mt 161.28 kg	Date: July 27, 2016 Date: July 27, 2016 Ther's Reference / Posizione Cliente: Manufacturer's Works Order N" / Conferma-Posizione: 1243316/027 1243316/027 Surface: Supericles: Barface: Supericles:
bbricazione: Product Type / Tipo di bbricazione: Product Type / Tipo di SEANLESS.LINE PIE TUBI S.S. LINE PIE Pecifica: 32.152 ft - 38.714 f Schedule / Schedula: 32.152 ft - 38.714 f 9900 mm + 11800 r	Cliente:
bbricazione: Pr 51 71 71 71 71 71 71 71 71 71 71 71 71 71	
pecifica: Schedule / Schedula: 1e 20 32	
Schedule / Schedula: Le 20 33	
CHEMICAL COMPOSITION / COMPOSIZIONE CHIMICA	ONE CHIMICA
Composition %, / Composition %, Composition %, / Composition %, x 100 x 100 x 100 x 100 x 100 x 100 Min colspan="12">colspan="12" x 10 Min colspan="12" x 10 x 10 x 10	
Ce LF: C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15 F2: (Nb+V) H: Heat / Colata F1: (Nb+V +Ti) Basimo F3: (V +Ni+Cr+Mo+Cu) Max Maximum / Massimo	Min: Minimum / Minimo P: Prodotto
THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPE	VERSO LO SPESSORE
Required values Individuals / Individuals Average / Media Hardness type / Tipo de dureza: vickerss F Valori richiesti Mm: - Mm: - Mm: - Mm: - Mm: - (%):	vickers (%): (%): - Avg. 7.0 129.3
AM: As manufactured / Come laminato diametro esterno Min: Minimum / Minimo Avg: Average / Media ID: Internal Diametro Interno MW: Middle Wall / Centro da espessura	Sc: Specimen condition / Condizioni Provetta Var: Variaton / Variazione

Customer / Cliente:	CERTIFICATO DI COLLAUDO			24044 Damine (BG) - Italy -39 035 560 111 tel +39 035 560 3827 fax
	(UNI EN 10204 3.1 / ISO 10474 3.1.B)	(1.B) Date /	Date / Data: July 27, 2016	
	Customer's Order Item / Rife SUN-BBII-160314-C-198	Customer's Order Item / Rifer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: SUN-BBII-160314-C-198	eference / Posizione Cliente:	Manufacturer's Works Order N° / Conferma-Posizione: 1243316/027
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)	QUIREMENTS) PLEMENTARI)		Surface / Superficie: BARE INSIDE, EXTERNALLY PROTECTED BY VARNISI GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE
Standard or Specification / Norme o specifica:	<u></u>	Steel Grade / Grado dell'Acciaio:		Ends / Estremità: See note nr.3
		Vedi nota nr.2		Vedi nota nr.3
Dimensions / Dimensioni: Schedule / Schedula: # 24.000" O.D. x 0.375" W.T. 20 # 610.0mm O.D. x 9.53mm W.T.	Length / Lunghezza: 0. 32.152 ft + 38.714 ft 33. 9800 mm + 11800 mm 710	Quantity / Quantità: 10Pcs/Pz 358,89 ft 355: 109.39 mt 161:	35556,1 lb 16128 kg	Nominal Weight / Peso nominale: 94.83 Ib/ft 141.12 Kg/m
THR	ROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE	IREZZA ATTRAVE	SSO LO SPESS	ORE
B: Body / Corpo Dist. Distance from outer diameter / Distanza dal M	Ls: Location of sample / Ubicazione provetta Max: Maximum / Massimo	OD: Outside Diameter / Diametro esterno Quad: Quadrant / Quadrante	o esterno	
	FLATTENING TEST / PROVA DI SCHIACCIAMENTO	OVA DI SCHIACCI	AMENTO	
Sample N° Zone Sc Test Frequency Prova N° Zona Frequenza prova	e Result a Esito			
E1 AM pipes of the lot	Good /Buono			
AM: As manufactured / Come laminato	E1 / E2: Ends of Sampling / Estremità della	provetta		Sc: Specimen condition / Condizioni Provetta
omputerized system and it is valid with electronic the owner of the original setting the electronic for any vulawith or not allowed use. Any alteredas	This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenata" is stamped. In the state the owner of the original certificate would release a copy of it, her and state the regional certificate the trade-mark green colored proto himset the responsibility for anyword to humake the exact of the addition will be subjected to the law.	Questo centificatio è emesso da un saterna computerrizzato ed e valdo co Il possesso deficipatio Quadroque after azione do fatalizzacione a una no Quadroque after azione do fatalizzacione a una por	omputentzato ed é valido con firma elettro pia, deve attestarre a suo nome la conform peresguita a noma di legge.	Questo certificato è emeso da un satema computenzato ed kvaldo con firma elefitorica. Il certificato originale riporta il marcho "fenans" in coltre verde. Di sessesse dell'orginale, quanto conso conse deve attentare a suo nome la conformita all'originale, assumendos opri responsabilita per un allecti o non consentita. Cualdionare dell'attenza ribera conso conse atte conformita all'originale, assumendos opri responsabilita per un allecti o non consentita.

CERTIFICAT (UNI EN 10204 3 (UNI EN 10204 3 product Type / Tipo di Schedule / Schedula: 20 32.152 ft + 38.714 f 33.152 ft + 38.714 f 9800 mm + 11800 - Re HYD	CERTIFICATO DI COLLAUDO 01/16/09075 4/17 49005500 30271% UNI EN 10204 3.1 / ISO 10474 3.1.B) Date / Date. Jupy 27, 2016 47005500 30271% UNI EN 10204 3.1 / ISO 10474 3.1.B) Date / Date. Jupy 27, 2016 471 49005500 30271% Product Type/ Tipo di product Oustomer s Order lean / Rite. Ordine Cleante - Item Customer s Reference / Posizione Cleante / Roman / Use Native / Steperides 41115 41115 Product Typer (Con RICHESTE SUPPLEMENTARI) Non Rite / Steperides 8448 Ibit 41112 411112 411112 411112 <td< th=""></td<>
(UNI EN 10204 3 one: Product Type / Tipo di Product Type / Tipo di ReAmLess LINE PIF 1UBI S.S. LINE PIF 32.152 ft + 38.714 f 9800 mm + 1180 r HYD Reconds / Secondi	[74 3.1.B) Date / Date : July 27, 2016 an / Rife. Ordine Clente - Item Current : Reference / Posizione Clente: Manufacturer : Suorks Order N' / Conferm -C-198 1243316/027 -C-198 Instructure : Suorks Order N' / Conferm -C-198 1243316/027 -C-198 Surface: Superficie: Burface / Superficie: Steel Grade / Grado dell/Acclaic: See note nr.2 Barte INSIDE, EXTERNALLY PROI REZZI INTERNAMENTE, OLEATI - Cuantity / Quantity /
bricazione: Product Type / Tipo di SEAMLESS LINE F SEAMLESS LINE PIF TUBI S.S. LINE PIF Schedule / Schedula: Length / Lunghezza: Schedule / Schedula: 31.52 ft + 33.714 f 3800 mm + 11800 f HYD	manufacturer's Works Order N° / Confermite Loc-198 Loc-198 Lo
bhicazione: Product Type. SEAMLESS EAMLESS FUBI S.S. LI Bechica: 10181 S.S. Li 32.152 ft + 3 32.152 ft + 3 9800 mm + Time / Tempo ore Seconds / Secondi	RA REQUIREMENTS) Surface / Superfide: TE SUPPLEMENTARI) BARE INSIDE, EXTERNALLY PROT TE SUPPLEMENTARI) TE SUPPLEMENTARI) EACUTINALITY PROT EACUTINALITY PROT Seen of an instantial instantial instantial vegli nota mr.3 Vegli nota mr.2 Vegli nota mr.3 Vegli nota mr.2 Nomial Weight / Peso nominale: 388.89 ft 388.89 ft 161.12 Kg/m 109.39 mt 161.28 kg 109.39 mt 161.12 Kg/m 109.39 mt 141.12 Kg/m
secifica: Schedule / Schedula: Lungt 20 32.152 ft + 3 9800 mm + * 9800 mm + *	Steel Grade / Gradio dell'Acciaio. Ends / Enternità: See note nr.2 See note nr.3 Ved in ota nr.2 Vedi nota nr.3 Ouantity / Quantità: 10Pcs/Pz Norminal Weight / Peso nominale: 358,89 ft 3556,1 109.39 nt 16128 kg 109.39 nt 16128 kg 109.39 141.12 kg/m 111 141.12 kg/m
Schedule / Schedula: Lengh / Lung 20 32.152 ft + 3 32.152 ft + 3 9800 mm + - 1mm + Tempo Time / Tempo ore Secondi / Secondi	Quantity / Ouantity / S556,1 Ib 358.89 ft 35556,1 Ib 358.89 ft 16128 kg 94.83 lb/ft 109.39 mt 16128 kg 141.12 Kg/m 109.39 mt 161.12 Kg/m 141.12 Kg/m TEST / PROVA IDRAULICA 141.12 Kg/m
sure / Pressione Time / Tempo Value / Valore Seconds / Secondi	: TEST / PROVA IDRAULICA
sure / Pressione Time / Tempo Value / Valore Secondi	ATION / INFORMAZIONI SUPPLEMENTARI STANDARD EDITIONS EDZION NORME ROCIMA: API 51 Anno: 2012 Revisione: Ed Anno della revisione: 45th Norma: ASTM A 10.6X86 A 106 Anno: 2013 Norma: ASTM A 10.6X86 A 106 Anno: 2013
Value / Valore	ATION / INFORMAZIONI SUPPLEMENTARI STANDARD EDITIONS EDIZION NORME Norma:AET 51 Anno:2012 Revisione:Ed Anno della revisione:45th Norma:AET 51 Anno:2013 Norma:AEM 51 05 Anno:2013 Norma:AEM 51 06 Anno:2013
	ATION / INFORMAZIONI SUPPLEMENTARI STANDARD EDITIONS EDIZION NORME BOIZION NORME Norma:AETE 14 Anno:2012 Revisione:Ed Anno della revisione:45th Norma:AETE 15 Anno:2012 Norma:AETE 15 Anno:2012 Norma:AETE 16 Anno:2013 Norma:AETE 16 ANNO Norma:AETE 16 ANNO NORM
MPa 4.7 5 Satisfactory / Soddisfacente	ATION / INFORMAZIONI SUPPLEMENTARI STANDARD EDITIONS EDIZION NORME Norma:AFPT 51. Anno:2012 Revisione:Ed Anno della revisione:45th Norma:AFPT 51. Anno:2012 Norma:AFPT 51. Anno:2013 Norma:AFPT 3105(A51.06 Anno:2013)
	f 5L Anno:2012 Revisione:Ed M 53 Anno:2012 AE 85 53 Anno:2013 AE 85 53 Anno:2013
EDIZIONI NORME	Anno:2012 Revisione:Ed Anno:2012 Anno:2013 ASME SA 106 Anno:2013
Standard:API 5L Year:2012 Revision:Ed Revision year:45th Norma:API Standard:ATM A 53 Year:2012 Norma:ASTM	Anno:2013 ASME SA 106
Norma:ASME Standard:ASME SA 53 Year:2013 Srandard:ASTM A 106/ASME SA 106 Year:2013	
Year:2009 12	Norma:NACE MR0175/ISO 15156 Anno:2009 Norma:NACE MR0103 Anno:2012
PRODUCT DESCRIPTION NOTES	DUCT DESCRIPTION NOTES
NOTE DI DESCRIZIO	DESCRIZIONE DEL PRODOTTO
Note 1 is the full description of the "Standard or specification" Acc. TO THE NORM AFI 5L PSL1 45TH ED. ASTM A/ASME SA 106/53, NACE MR0175, MR0103, TQC NORMA AFI Scottoda13/17,1	La nota 1 è la descrizione completa delle 'Norme o specifiche' Norma API 5L PSL1 45A EDI2., ASTM A/ASME SA 106/53, NACE MR0175, MR0103, TQC 20010413/17.1
grade' NDE	Ia nota 2 è la descrizione completa del "Grado acciaio" AccIAIO GR. B PSLI E GR. B A/SA 106, A/SA 53 NDE
Note 3 is the full description of the 'Ends' La nota 3	La nota 3 è la descrizione completa delle 'Estremità'

	INSPECTION CERTIFICATE	TE	Number / Numero:	Page / Pagina:	Piazza Caduti 6 Luglio 1944, 1 24044 Dalmine (BG) – Italy
	CERTIFICATO DI COLLAUDO	0	01/16/09075	517	+39 035 560 111 tel +39 035 560 3827 fax
	(UNI EN 10204 3.1 / ISO 10474 3.1.B)	3.1.B)	2016		
Customer / Cliente:	Customer's Order Item / Rite. SUN-BBII-160314-C-198	fer. Ordine Cliente - Item Custor 8	Customer's Order Item / Rifer. Ordine Cliente - Item Customer's Reference / Posizione Cliente. SUN-BBII-160314-C-198		Manufacturer's Works Order N° / Conferma-Posizione: 1243316/027
Manufacture Process / Processo di fabbricazione:	Product Type / Tipo di prodotto: SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)	EQUIREMENTS) JPPLEMENTARI)		Surface / Superficie: BARE INSIDE, E: GREZZI INTERN,	Surface / Superficie: BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE
Standard or Specification / Norme o specifica: See note nr.1 Vedi nota nr.1		Steel Grade / Grado dell'Acciaio See note nr.2 Vedi nota nr.2		Ends / Estremità: See note nr.3 Vedi nota nr.3	
Dimensions / Dimensioni: Schedule / Schedula Ø 24.000" O.D. x 0.375" W.T. 20 Ø 610.0mm O.D. x 9.53mm W.T. 20	Length / Lunghezza: 32.152 ft + 38.714 ft 9800 mm + 11800 mm	Quantity / Quantità: 10Pcs/Pz 358,89 ft 109.39 mt	35566,1 lb 16128 kg	Nominal Weight 94.83 Ib/ft 141.12 Kg/m	Nominal Weight / Peso nominale: 94.83 lb/ft 141.12 Kg/m
	SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI	ON / INFORMAZI	ONI SUPPLEMEN	ITARI	
	PRODUCT I NOTE DI DESCI	PRODUCT DESCRIPTION NOTES NOTE DI DESCRIZIONE DEL PRODOTTO			
BEVELLED AS PER ASME B 16.25 FIG. 2A CT4:8554			ASME B 16.25 FIG. 2A CT4:8554	8554	
	Suppler	Supplementary Information Informazioni supplementari			
Country of melt ITALY Continuous casting and Fully killed		Paese di colaggio acciaio ITALIA Colaggio continuo ed acciaio di	Paese di colaggio acciaio ITALIA Colaggio continuo ed acciaio di tipo calmato	to	
	Supplen Informat	Supplementary Information Informazioni supplementari			
AFTER INSPECTION OPERATION, THE MATERIAL HAS NOT A RESIDUAL MAGNETISM AREFER THAN 20 GAUGS HARDNESS HRM 22 MAX, ACCORDING TO NACE MR0175/ISO 15156 HARDNESS HRM 22 MAX, AACCORDING TO NACE MR0103 ALL FIRES HMM 25 MAX, AACCORDING TO NACE MR0103 ALL FIRES HMM 25 MAX, AACCORDING TO NACE MR0103 ALL FIRES HMM 25 MAX, AACCORDING TO NACE MR0103 SEMLESS HMM 25 MAX, AACCORDING TO NATEFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT VISMLA ND TRINSIPAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT THE PRODUCT SUFFLIED IS IN CONFILMACE WITH THE REQUIREMENTS OF THE ORDER. MAAUVEACTURE SY TERMES DAMING TO CONTROL HAS BEEN CARRIED OUT WITH THE REQUIREMENTS OF THE ORDER. MAAUVEACTURE STREMES DAMING TO CONTROL HAS BEEN CARRIED OUT WITH THE REQUIREMENTS OF THE ORDER. 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TK PIPING CO., LTD

Chapter 3. Quality Manual



Chapter 3.



1. SCOPE

This Section defines the responsibilities and describes the control of the Quality System Manual. Also describes the management review to assure the effective implementation of QS Manual, and provides for indoctrination and training of personnel performing verifying, or managing activities affecting quality

2. Scope and applicabilities of QS Program

The Quality System Program described in this QS Manual encompasses the control program necessary for the supplying all of materials in accordance with the International Code and contractual requirements.

3. The scope of activities include the following

1) Receipt, identification, verification, handling, storage, and shipment of material or source material

- 2) Testing, examination, or treatments required by the material specification or the specific applicable material requirements of Code and certification of the results of such test, examination, or treatments
- 3) Qualification of material organization
- 4) Control of shipments of material from material organization to parties other then the party performing the qualification
- 5) Approval and control of supplier of source material or subcontracted services
- 6) Utilization of unqualified source material.

4. Quality system structure

This Quality System Manual takes into consideration of the technical aspects and provide for planning and accomplishment of activities affecting quality. The program takes into account the need for any special controls, processes, test equipment, tools and skills to attain the required quality and for verification of quality by examination, inspection or test to manufacture the acceptable materials.

5. Control of Quality System Manual

The Quality System Manual and revision thereto shall be prepared and maintained by the QA Team

The Quality System Manual and revision thereto shall be reviewed by the QA Manager, and approved by President

The Quality System Manual is revised on each Section basis, and identified with an under line on the portions of applicable paragraph and revision number and date on the Section II Table of Contents.

6. Distribution of Quality System Manual

The QS Manual shall be responsible for maintain current with the latest revisions by the QA Manager. Only controlled copies of the Quality System Manual shall be distributed for use within SAMKWANG organization and personnel and Controlled copies may be distributed outside SAMKWANG at the discretion of the QA Manager.

The Controlled QS Manual cover sheet shall be identified with the control number including indication of controlled of uncontrolled status.

The QA Team shall be responsible for distribution of the QS Manual and maintenance of the Distribution Control Log

For internal distribution of the QS Manual, copies shall be hand carried to the President and all Managers, as a minimum. QS Manual to be distributed outside SUNJIN shall be sent with a Document Transmittal Sheet. Distribution of revisions to controlled Quality System Manual shall be handled in the same manner as the original distribution.

Internal holders shall be required to make replacements of revised Sections upon receipt.

External holder of a controlled copy will be requested to return a signed Document Transmittal Form within the date specified thereon indicating that the revision has been received and the obsolete Section(s) destroyed.

7.Indoctrination and Training

Responsibilities

The QA Manager shall be responsible for the overall Indoctrination and Training program for indoctrination and training of all personnel and monitoring for performance of Indoctrination and Training and follow-up action.

General requirements

Training programs shall be established to provide for indoctrination and training, as necessary, of employees performing activities affecting quality

- (1) Training shall be provided, as needed, to achieve initial proficiency, maintain proficiency, and adapt to changes in technology, methods, and job responsibilities. Training for maintain proficiency shall be performed by QA Manager for
 - (a) The Code has been changed;
 - (b) The QS program has been revised;
 - (C) The each Manager has specific reasons to question maintaining proficiency of his personnel considering the issue of NCR or CAR.
- (2) The extent of indoctrination and training shall be commensurate with the scope, complexity, and nature of the activity as well as the education, experience, and proficiency of the person.
- (3) Training programs shall include;
 - (a) Personnel to be indoctrinated or trained shall be identified.
 - (b) Basic job duties, functions, and responsibilities as related to other Individuals and Teams.
 - (c) Functions related to the various Chapters of the QS Manual, supporting procedures and associated documents.
 - (d) Spec Code and other Standards
 - (e) Training shall be provided, as needed, to achieve initial proficiency, maintain proficiency, and adapt to changes in technology, methods, and job responsibilities.
- (4) Training Record

Training Record shall be included date and time, instructor name and position, Course subject and Attendees

8. Qualification of Inspection and Test Personnel

Inspection and Test Personnel who perform inspection or test activities to verify conformance to specified requirements for the purpose of acceptability shall be qualified and certified. Inspection personnel are performed activities such as receiving inspection, in-process inspection, final inspection and shipping inspection and test personnel are performed activities chemical analysis and mechanical test.

Inspection and Test Personnel shall be qualified and certified in accordance with the inspection and Test Personnel Qualification Procedure.

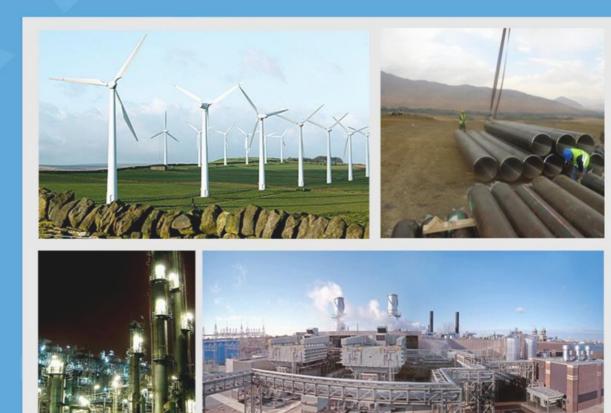
(1)Initial proficiency of inspection and test personnel shall be determined by evaluation of prospective personnel's education, experience, training, and either examination result or capability demonstration.

(2)Inspection and test personnel shall be re-qualified at least three(3) years prior to the expiration date of qualification by Quality & Metallurgy Manager in accordance with the following criteria;

(3)The QA Manager shall review the qualification records and, upon satisfaction, sign and date on the Inspector Qualification Record and maintain qualification records.

(4)The QA Manager may require requalification of an Inspection and Test Personnel when either one has a specific reason to question the capability of Inspection and Test Personnel

Chapter 4. REFERENCE LIST



Chapter 4.

REFERENCE LIST

YEAR	END USER	CLIENT	PROJECT NAME	ITEM
2018	KOREA MIDLAND POWER	НКС	Boryeong Thermal Power Plant	PIPE / FITTING / FLANGE
2018	WIN-ENG	WIN-ENG	S-OIL OFF AUTOMATION PROJECT	PIPE / FITTING / FLANGE
2018	GS POWER	Ahjeon E&C	Anyang GS Power Cogeneration Power	PIPE / FITTING / FLANGE
2018	KOLONG	Haein	Hwasung Incinerator	PIPE / FITTING ETC.
2018	HG E&C	HG E&C	Vietnam PJT	PIPE / FITTINGS
2018	DAE SUNG GAS	KMT	Yeosu Daesung Gas Facility	PIPE / FITTINGS
2018	HANHWA CHEMICAL	Sungbo Powertec	ULSAN CHEMICAL	PIPE / FITTING / FLANGE
2018	OLTIN YO'L GTL	HYUNDAI ENGINEERING	Uzbekistan Gas-to-Liquids Project	Special Pipe
2018	КМРС	HYUNDAI ENGINEERING	KLNG PROJECT	CS SMLS PIPE
2018	KNPC	HYUNDAI ENGINEERING	KLNG –KOC Tie in - PROJECT	CS SMLS PIPE
2018	CEEG. Spa	HYUNDAI ENGINEERING	Ain Arnat 1200mw CCPP Project	SS SMLS PIPE
2018	SK ENERGY	KMT	SK ENERGY ULSAN	PIPE / FITTINGS

Chapter 4.

REFERENCE LIST

YEAR	END USER	CLIENT	PROJECT NAME	ITEM
2018	GS GALTEX	Daejung Development	Gunsan Bio Kombinat	PIPE / FITTINGS / FLANGE
2018	dae ah e&c	DAE AH E&C VIETNAM BRANCH	lg vina dop/dinp 80,000 Mtpy expansion	PIPE / FITTINGS / FLANGE
2018	GS ENERGY	gs neotek	Boryeong LNG Terminal 2-2 stage #5, #6 TANK	PIPE / FITTINGS / FLANGE
2018	Hyundai Heavy Industries	WON IL TNI	SINOPEC	PIPE / TUBE SHEET
2018	DSME	WON IL TNI	TANGSMAN	PIPE / FITTING
2018	DOLG IL	DONGIL TECH	SOLVAY	TITANIUM PLATE, TUBE
2018	DONG IL	DONGIL TEC	UNID 1 PJT	NIKEL 200 PLATE / TUBE/ PIPE
2018	SK INOVATION	JEI O	SK INOVATION	TUBE SHEET, FLANGE, PIPE
2018	DOOSAN HEAVY INDUSTRIAL	JEO O	KUMHO PNP	TUBE SHEET, FLANGE, PIPE
2018	MODEC	MODEC	MV30 Project	PIPE / FITTING / FLANGE
2019	CGN DASAN POWER	SeKwang Industrial	Daesan Biomass Power Plant	Gasket, Bolt
2019	LG VINA Chemical	DAEAH E&C	LG VINA DOP/DINP 80,000 MTPY Expansion Plant	SS SMLS PIPE
2019	CIREBON POWER	Hyundai E&C	CIREBON-II 1000MW COAL FIRED POWER PLANT	CS SMLS PIPE

Chapter 4.

REFERENCE LIST

YEAR	END USER	CLIENT	PROJECT NAME	ITEM
2019	PETRO BRAS	MODEC Singapore	MV31 FPSO GUANARA	Titanium Pipe, Fitting, Flange
2019	State Company for Oil Project	HDGSK JV	Iraq Karbala Refinery	CS, SS, Duplex Plate
2019	PETRO BRAS	MODEC Singapore	MV31 FPSO GUANARA	CU-Ni, Titanium
2019	PETRO BRAS	MODEC Singapore	MV31 FPSO GUANARA	Alloy Pipe, Fitting, Flange
2020	PETRO BRAS	MODEC Singapore	MV32 FPSO GUANARA	CS,AS, SS, CUNI, TITANIUM PIPING
2020	Nowon Newpower	Dongyang Plant	Seoul Nowon Resource Recovery Facility	CS PIPING
2020	KOREA SOUTH-EAST POWER	KOREA SOUTH-EAST POWER	Yeongheung Power Plant	ALLOY PIPING
2020	CHUNBO Chemical	Dong-II	CHUNBO TANK	Hastelloy C22 Plate, Tube
2020	SK- Materials	Main Tech Plant	SK- Materials D-4	CS, SS PIPE, FITTINGS, FLANGE