

# PREQUALIFICATION

Supplier Approval Application

## TK PIPING



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Chapter 1.

# Company Profile

1. Introduction
2. Company Overview
3. Organization
4. Business License



## 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.

# TK.P

Chapter 1.

# COMPANY OVERVIEW

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

Chapter 1.

# COMPANY OVERVIEW

## - LOCATION

### SEOUL OFFICE

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

### WAREHOUSE

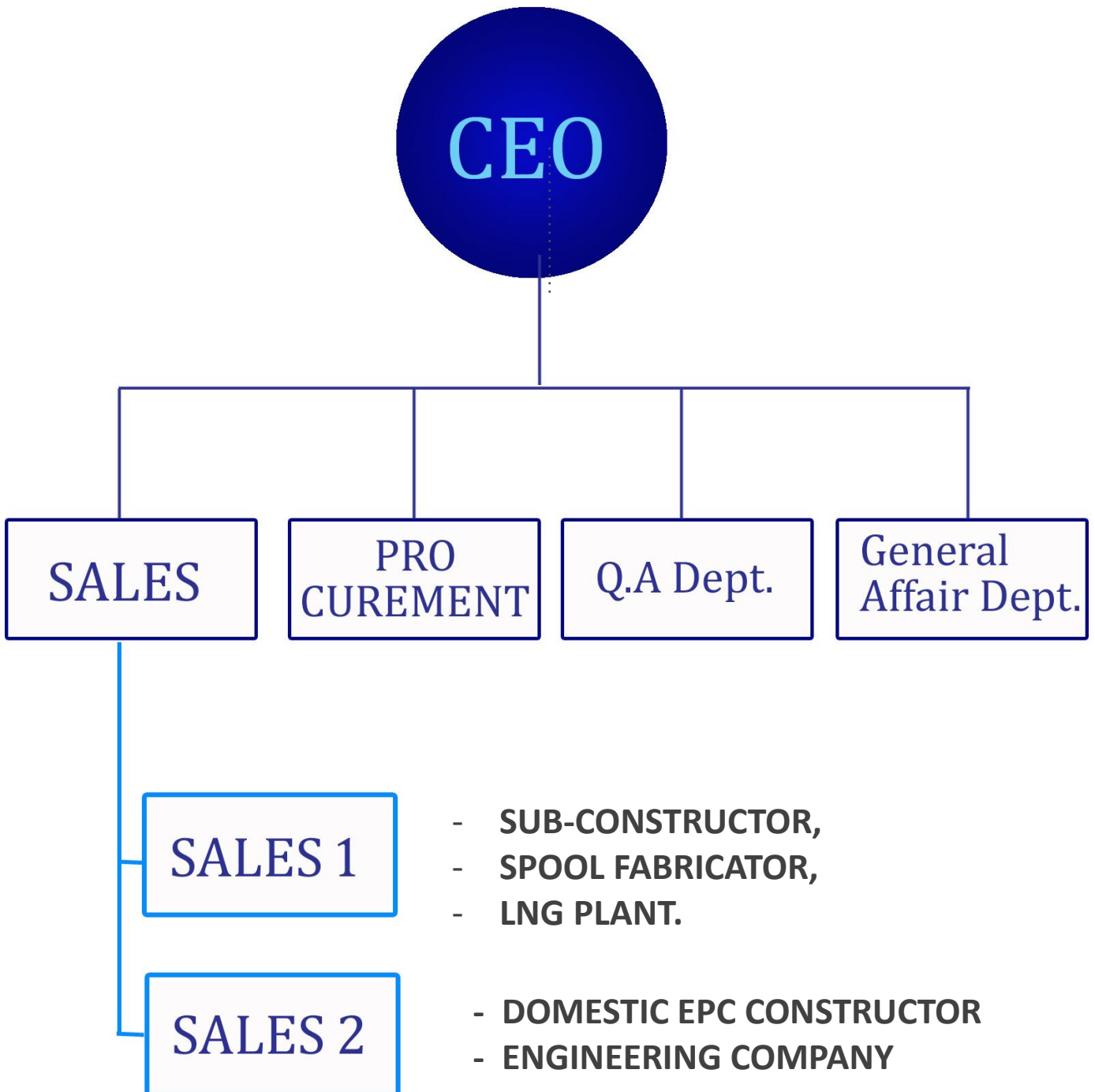
686, Seokpo-ri, Seokpo-myeon,  
Bonghwa-gun, Gyeongsangbuk-do,  
Republic of Korea

### VIETNAM Branch

Vung Tau Province, VIETNAM



# ORGANIZATION







# QUALITY CERTIFICATE

Certificate No : QQS 9082

## QUALITY MANAGEMENT SYSTEM CERTIFICATE

**TK PIPING CO., LTD**

RM413, 286 BEOTKKOT-RO, GEUMCHEON-GU, SEOUL, 08511, KOREA

This is to certify that organization above has been audited and registered by KTR-CC for the scope described as follows:

### QUALITY MANAGEMENT SYSTEM STANDARD

**ISO 9001:2015 / KS Q ISO 9001:2015**

#### **SCOPE :**

**MANUFACTURE AND SALES OF  
FERROUS, NON-FERROUS METALS & WELDING MATERIALS**

**EXCLUDED REQUIREMENT [ 8.3 DESIGN AND DEVELOPMENT ]**

<b>Valid Until</b>	<b>: MARCH</b>	<b>03. 2023</b>
<b>Registered Date</b>	<b>: MARCH</b>	<b>04. 2020</b>
<b>Issued Date</b>	<b>: MARCH</b>	<b>04. 2020</b>

### **KTR CERTIFICATION CENTER**

#501, 646-30, Hosu-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, Korea  
Tel : 82-2-2093-3450/82-70-4010-4981      Web : [www.ktrcc.or.kr](http://www.ktrcc.or.kr)



This certificate remains the property of KTR-CC  
This certificate is accredited by KAB which is IAF MLA joined corporation.  
If not received further management audit within a given period, this certificate will be canceled.

## Chapter . 2

# Sales Products & Sample MTC

1. Sales Products
2. 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

## Chapter 2.

# 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

# 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 &amp; 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
<u>FLANGE</u>		
TK FLANGE		KOREA
A JOO FITTING		KOREA
<u>VALVE</u>		
DONGKANG		KOREA
HANKUK VALVE		KOREA
HWA SHUNG VALVE		KOREA
KM TECH		KOREA
WONDAE TGK		KOREA
OS VALVE		KOREA

## 2. Sample Mill Test Certificate

1. ERNE FITTING
  - REDUCER A234 WP22 CL.3
  
2. TK Corporation
  - TEE A234 WP9 CL.1
  
3. HUSTEEL
  - API 5L GR.B/ X42 ERW PIPE
  
4. TENARIS
  - A106 Gr.B SMLS PIPE



# ERNE Fitting MTC

 <b>erne fittings gmbh</b> A-6824 Schlüns Hauptstrasse 48 Austria/Europa Telefon ++43/5524 501-0 Telefax ++43/5524 501-930 Reg. No. 12 100 3054		<b>Abnahmeprüfzeugnis</b> <b>Inspection Certificate</b> <b>EN 10204 - 3.1</b>		Zeugnisnummer [certificate no.] Rev.	Datum [date] 15/11/2007
<b>Kunde [customer]</b>		Ihre Bestellnummer [your order no.] Ihre Artikelnummer [your item no.] Menge [quantity] Artikelbezeichnung [designation] 1 KO-S-WP22CI3-5"1/4"-XS/XS reducers		Unsere Auftrags.Nr. [our order no.] Schmelze Nr [heat no.] 277234	
<b>Vormaterial [base material]</b>		seamless pipe Erschmelzungsart [melting process] Y		Ident.Nr. [ident no.] 277234	
<b>Analyse [analysis]</b>		Schmelze Nr. [heat no.] 277234		Anforderungen [requirements] ASME B16.9-1993, WP22 Cl.3, ASTM A 234/A 234M-05a, ASME SA-234M-Ed.04/A06, NACE MR-01-75, EN 10204/3.1, Manufacturers standard	
<b>Index</b>		1 = Schmelzeanalyse [heat analysis] 2 = Produktanalyse [product analysis]		J-Faktor [J-Factor]: (Si + Mn) * (P + Sn) * 10000 CEQ [CEQ]: C + (Mn / 6) + (Cr + Mo + V) / 5 + (Cu + Ni) / 15	
C 0.11 0.23 0.231 0.126 0.231 0.475 0.0116 0.0052 2.162 0.959 0.009 0.015 0.053 0.001 0.006 0.837 0.005 0.002 0.001 0.0001 0.032 0.007		Si Mn P S Cr Mo Ni Al Ni Sn V CE Nb Ti Pb B Cu Co		Härteprüfung [hardness test] 144-150 HB	
<b>Proben Nr. [test no.]</b> M984/01		Zugversuch [tensile test] Dehngr. [yield str.] Temp. +20 °C ReH 0 577 Dehngr. [yield str.] Temp. 394 Zugfestigkeit [tensile str.] Rm (N/mm²) 577 Dehnung [elongation] 2" (%) 30,6		Wärmebehandlung [heat treatment] normalized and tempered temperature 910 °C / 700 °C Holding Time 30 / 60 min. Cooling in still air	
<b>Kennzeichnung [marking]</b> E03		Mat./277234/DN"wall o.B./o.K.		Zusatzmarkierung [add. mark.]	
<b>Besichtigung und Ausmessung [visual inspection and dimensional check]</b>		Die gestellten Anforderungen wurden erfüllt [Manufacturing requirements are satisfied]		Der Werksachverständige [the Works Inspector] 15/11/07 Grabherr Harald Dieses Dokument wurde elektronisch erstellt und ist ohne Unterschrift gültig. [The certificate is issued by the computerized system and is valid without signature.]	
<b>Bemerkungen [remarks]</b> cold formed PMI 100% spectral: o.k.		Zugversuch [tensile test] Dehngr. [yield str.] Temp. +20 °C ReH 0 577 Dehngr. [yield str.] Temp. 394 Zugfestigkeit [tensile str.] Rm (N/mm²) 577 Dehnung [elongation] 2" (%) 30,6		Kerbschlagarbeit [impact values] (J) -	

Zertifiziert nach DGRL 97/23/EG Anhang I - Absatz 4.3 durch TÜV Süddeutschland CE 0036, Zertifikat-Nr. DGR-0036-QM-WH-104-01 [Certified acc. to PED 97/23/EC by TÜV Cert CE 0036, certificate no. DGR-0036-QM-WH-104-01. Certified acc. to EN ISO 9001]

**ORIGINAL**

**erne fittings gmbh**  
 A-6824 Schlüns/Austria  
 www.ernefittings.com

# TK corporation MTC



## 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 No.	20170100514	Date	2017/01/04
P.O No.		Project Name	ERU		
Job No.					
Specification for Material	ASTM A234WP9 CL1 -13e1 NACE MR0175-03	Starting Material	SEAMLESS PIPE		
Specification for Inspection	ASME B16.9-2012	Dimension and Visual Inspection	GOOD		
Heat Code No [HCN]	No.	Descriptions	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

### CHEMICAL COMPOSITION (%)

Heat Code No [HCN]	Spec.	C	Si	Mn	P	S	Cr	Mo	Raw Heat No
	Max.	0.15	1.00	0.60	0.030	0.030	10.00	1.10	
	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

Heat Code No [HCN]	Spec	Y.S	T.S	E.L	Hardness Test	
		ksi		(%)	HB	
	Max.	-	-	-	217	
	Min.	30	60	30	-	
CZ025H	P	83.3	106.3	31.9	200	206

We hereby certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order. Any forgery or falsification of this certificate will be subjected to the full extent of the criminal prosecution. Please contact us by the below Fax or E-mail if you have any inquiries on this certificate.

Fax: +82 831 6886 / E-mail: tkqaqc@tkbend.co.kr  
Remark: \*PMI TEST : GOOD

Legend:  
HB: Brinell  
ST: Solution Treatment  
SR: Stress Relieving  
N: Normalized  
T: Tempered  
A: Annealed  
Q: Quenched  
Y.S: 0.2% Offset Method  
(G): Hot-Dip Galvanized Coating  
AC: Air Cool  
OC: Oil Cool  
WQ: Water Quenched  
WC: Water Cool  
B: Base  
W: Weld  
H: Haz  
L: Ladle  
P: Product

Reviewed by:

Witnessed by:

Approved by:

*W. S. Kim*  
Head of Quality Control Dep't



# Tenaris MTC

Tenaris S.p.A. - Dalmine plant  
 Piazza C. Galvani 104, 1  
 24044 Dalmine (BG) - Italy  
 +39 035 560 111 tel.  
 +39 035 560 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
 Date / Data: **July 27, 2016**  
 Page / Pagina: **1 / 7**

Customer / Cliente: <b>SUN-BBII-160314-C-198</b>	Customer's Order Item / Rifer. Ordine Cliente - Item <b>SUN-BBII-160314-C-198</b>	Manufacturer's Works Order N° / Conferma-Posizione: <b>1243316/027</b>
Manufacture Process / Processo di fabbricazione: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Product Type / Tipo di prodotto: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Surface / Superficie: <b>BARE INSIDE, EXTERNALLY PROTECTED BY VARNIS GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE</b>
Standard or Specification / Norme o specifica: <b>See note nr.1 Vedi nota nr.1</b>	Steel Grade / Grado dell'Acciaio: <b>See note nr.2 Vedi nota nr.2</b>	Ends / Estremità: <b>See note nr.3 Vedi nota nr.3</b>
Dimensions / Dimensioni: <b>Ø 24.000" O.D. x 0.375" W.T. Ø 610.0mm O.D. x 9.53mm W.T.</b>	Length / Lunghezza: <b>32.152 ft + 38.714 ft 9800 mm ÷ 11800 mm</b>	Nominal Weight / Peso nominale: <b>94.83 lb/ft 141.12 Kg/m</b>
Schedule / Scheda: <b>20</b>	Quantity / Quantità: <b>10Pcs/Pz</b>	

### DELIVERY NOTES / AVVISI DI SPEDIZIONE

Delivery Notes Avvisi di spedizione	Delivery Notes Avvisi di spedizione
Job Number: <b>0031153910 / 000270</b>	Town: <b>153-02 SEOUL</b>
Shipping note: <b>96512985 - 26/07/2016</b>	Country: <b>South Korea</b>
Address: <b>1205, LEADERS TOWER 60-15</b>	

### TENSILE TEST / PROVA DI TRAZIONE

Heat N° Colata N°	Sample N° Prova N°	Specimen condition Condizioni della provetta		Specimen dimensions Dimensioni della provetta		Test temp di prova	Y.S. EUL 0.5%	U.T.S. Req.	Elongation / Allungamento			
		Ls	Sc	Size Dimensioni	Area				Lo	Min.	Min.	Obt
962090	L6083	B	AM	L	37.80 x 9.19	mm2	343.00	451.00	2"	50.8	27.0%	37.5%

AM: As manufactured / Come laminato	Location of sample / Ubicazione provetta	Orientation / Orientamento
B: Body / Corpo	Max: Maximum / Massimo	Req: Required / Richiesto
L: Longitudinal / Longitudinale	Min: Minimum / Minimo	Sc: Specimen condition / Condizioni Provetta
Lo: Initial length / Lunghezza iniziale	Obt: Obtained / Ottenuto	Ss: Strip specimen / Rettangolare
		U.T.S: Ultimate Tensile Strength / Rottura
		Y.S: Yield Strength / Snervamento

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unavailability or not allowed use. Any alteration and/or falsification will be subjected to the law.  
 Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio "Tenaris" in colore verde. Il possessore dell'originale, qualora rilasci copia, deve attestarne a suo nome la conformità all'originale, assumendosi ogni responsabilità per usi illeciti o non consentiti. Qualunque alterazione o falsificazione sarà perseguita a norma di legge.

FOR03171



Tenaris S.p.A. - Dalmine plant  
 Piazza Caduti 6, Luglio (BG) - Italy  
 +39 035 660 111 tel.  
 +39 035 660 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
 Date / Data: **July 27, 2016**  
 Page / Pagina: **3 / 7**

Customer / Cliente: SUN-BBII-160314-C-198	Customer's Order Item / Refer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: 1243316/027	Manufacturer's Works Order N° / Conferma-Posizione: 1243316/027
Manufacture Process / Processo di fabbricazione: SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)	Product Type / Tipo di prodotto: SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)	Surface / Superficie: BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE
Standard or Specification / Nome o specifica: See note nr.1 Vedi nota nr.1	Steel Grade / Grato dell'Acciaio: See note nr.2 Vedi nota nr.2	Ends / Estremità: See note nr.3 Vedi nota nr.3
Dimensions / Dimensioni: Ø 24.000" O.D. x 0.375" W.T. Ø 610.0mm O.D. x 9.53mm W.T.	Length / Lunghezza: 32,152 ft ± 38,714 ft 9800 mm ± 11800 mm	Nominal Weight / Peso nominale: 94.83 lb/ft 141.12 kg/m

### THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

B: Body / Corpo	Ls: Location of sample / Ubicazione provetta	OD: Outside Diameter / Diametro esterno
Dist: Distance from outer diameter / Distanza dal	Max: Maximum / Massimo	Quad: Quadrant / Quadrante

### FLATTENING TEST / PROVA DI SCHIACCIAMENTO

Standard / Norma:	Sample N° / Zone	Sc	Test Frequency / Frequenza prova	Result / Esito
Heat N° / Colata N°	Prova N°	Zone		
962090	L6082	E1	AMI	Good / Buono

AM: As manufactured / Come laminato E1 / E2: Ends of Sampling / Estremità della provetta Sc: Specimen condition / Condizioni Provetta

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# Tenaris MTC

Dalmine S.p.A. - Dalmine plant  
 Piazza Caduti 6, Luglio 1944, 1  
 24044 Dalmine (BG) - Italy  
 +39 035 560 111 tel.  
 +39 035 560 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
 Date / Data: **July 27, 2016**  
 Page / Pagina: **4 / 7**

Customer / Cliente: <b>SUN-BBII-160314-C-198</b>	Customer's Order Item / Rif. Ordine Cliente - Item <b>SUN-BBII-160314-C-198</b>	Manufacturer's Works Order N° / Conferma-Posizione: <b>1243316/027</b>
Manufacture Process / Processo di fabbricazione: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Product Type / Tipo di prodotto: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Surface / Superficie: <b>BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE</b>
Standard or Specification / Norme o specifica: <b>See note nr.1 Vedi nota nr.1</b>	Steel Grade / Grado dell'Acciaio: <b>See note nr.2 Vedi nota nr.2</b>	Ends / Estremità: <b>See note nr.3 Vedi nota nr.3</b>
Dimensions / Dimensioni: <b>Ø 24.000" O.D. x 0.375" W.T. Ø 610.0mm O.D. x 9.53mm W.T.</b>	Length / Lunghezza: <b>32.152 ft ± 38.714 ft 9800 mm ± 11800 mm</b>	Nominal Weight / Peso nominale: <b>94.83 lb/ft 141.12 Kg/m</b>
Schedule / Scheda: <b>20</b>	Quantity / Quantità: <b>10Pcs/Pz</b>	

### HYDROSTATIC TEST / PROVA IDRAULICA

Pressure / Pressione	Time / Tempo	Results / Risultato
Unit / Unità:	Seconds / Secondi	
MPa	5	Satisfactory / Soddisfacente

### SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI

STANDARD EDITIONS EDIZIONI NORME	
Standard: API 5L Year: 2012 Revision: Ed....	Norma: API 5L Anno: 2012 Revisione: Ed....
Standard: ASTM A 53 Year: 2012	Norma: ASTM A 53 Anno: 2012
Standard: ASME SA 53 Year: 2013	Norma: ASME SA 53 Anno: 2013
Standard: ASTM A 106/ASME SA 106 Year: 2013	Norma: ASTM A 106/ASME SA 106 Anno: 2013
Standard: NACE MR0175/ISO 15156 Year: 2009	Norma: NACE MR0175/ISO 15156 Anno: 2009
Standard: NACE MR0103 Year: 2012	Norma: NACE MR0103 Anno: 2012

### PRODUCT DESCRIPTION NOTES NOTE DI DESCRIZIONE DEL PRODOTTO

Note 1 is the full description of the 'Standard or specification' ACC. TO THE NORM API 5L PS11 45TH ED. ASTM A/ASME SA 106/53, NACE MR0175, MR0103, TOC 20010413/17.1	La nota 1 è la descrizione completa delle 'Norme o specifiche' NORMA API 5L PS11 45A EDIZ., ASTM A/ASME SA 106/53, NACE MR0175, MR0103, TOC 20010413/17.1
Note 2 is the full description of the 'Steel grade' STEEL GR. B PS11 AND GR. B A/SA 106, A/SA 53 NDE	La nota 2 è la descrizione completa del 'Grado acciaio' ACCIAIO GR. B PS11 E GR. B A/SA 106, A/SA 53 NDE
Note 3 is the full description of the 'Ends'	La nota 3 è la descrizione completa delle 'Estremità'

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Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio "Tenaris" in colore verde. Il possessore dell'originale, qualora rilasciasse una copia, deve attestare a suo nome la conformità all'originale, assumendosi ogni responsabilità per usi illeciti o non consentiti. Qualunque alterazione o falsificazione sarà perseguita a norma di legge.

FOR03171

# Tenaris MTC

Tenaris S.p.A. - Dalmine plant  
Piazza Caduti 6, Luglio 10444, 1  
+39 035 560 111 tel.  
+39 035 560 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
Date / Data: **July 27, 2016**  
Page / Pagina: **5 / 7**

Customer / Cliente:	Customer's Order Item / Rif. Ordine Cliente - Item		Manufacturer's Works Order N° / Conferma-Posizione:
Manufacture Process / Processo di fabbricazione:	SUN-BBII-160314-C-198		1243316/027
Standard or Specification / Norme o specifica:	Product Type / Tipo di prodotto:	Surface / Superficie:	
See note nr.1	SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS)	BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH	
Vedi nota nr.1	TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)	GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE	
Dimensions / Dimensioni:	Schedule / Scheda:	See note nr.2	Ends / Estremità:
Ø 24.000" O.D. x 0.375" W.T.	20	Vedi nota nr.2	See note nr.3
Ø 610.0mm O.D. x 9.53mm W.T.	Length / Lunghezza:	Quantity / Quantità: -10Pcs/1Pz	Nominal Weight / Peso nominale:
	32.152 ft + 38.714 ft	35556.1 lb	94.83 lb/ft
	9800 mm ± 11800 mm	16128 kg	141.12 kg/m

### SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI

REVEALED AS PER ASME B 16.25 FIG. 2A, CT4, 8554	PRODUCT DESCRIPTION NOTES NOTE DI DESCRIZIONE DEL PRODOTTO
	SMUSSATI, SECONDO ASME B 16.25 FIG. 2A, CT4, 8554

Country of melt ITALY Continuous casting and Fully killed	Supplementary Information Informazioni supplementari
	Fase di colaggio acciaio ITALIA Colaggio continuo ed acciaio di tipo calmato

AFTER INSPECTION OPERATION, THE MATERIAL HAS NOT A RESIDUAL MAGNETISM GREATER THAN 20 GAUSS HARDNESS HRC 22 MAX, ACCORDING TO NACE MR0175/ISO 15156 HARDNESS HBW 225 MAX, ACCORDING TO NACE MR0103 ALL PIPES HAVE BEEN TESTED BY ELECTROMAGNETIC TEST ACCORDING TO SPEC. E-570, WITH SATISFACTORY RESULT (LONG INT/TEXT NOTCH 10%) SEAMLESS HOT FINISHED PIPES VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER. MANUFACTURED BY TENARIS DALMINE NO WELD REPAIR, MERCURY AND RADIATION FREE Tenaris IT identification number for MTC: 57DK*,2	Supplementary Information Informazioni supplementari
	DOPO LE OPERAZIONI DI CONTROLLO, IL MATERIALE NON PRESENTA UN MAGNETISMO RESIDUO SUPERIORE A 20 GAUSS DUREZZA HRC 22 MAX, IN ACCORDO ALLA SPEC. NACE MR0175/ISO 15156 DUREZZA HBW 225 MAX, IN ACCORDO ALLA SPEC. NACE MR0103 I TUBI SONO STATI SOTTOPOSTI AL CONTROLLO ELETTROMAGNETICO IN ACCORDO ALLA SPEC. E 570 CON ESITO SODDISFACENTE (LONG INT/TEXT TARATURA 10%) TUBI SENZA SALDATURA FINITI A CALDO IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE L'ACCIAIO E' DI TIPO CALMATO, A GRANO FINE, PRODOTTO AL FORNO ELETTRICO IL MATERIALE FORNITO E' IN ACCORDO AI REQUISITI DELL'ORDINE. FABBRICATO DA TENARIS DALMINE NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI Numero Identificativo Tenaris IT per MTC: 57DK*,2

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy or if, he must attest its conformity to the original one taking upon himself the responsibility for any unavailability or not allowed use. Any alteration and/or falsification will be subjected to the law.	Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio "Tenaris" in colore verde. Il possessore dell'originale, qualora rilasci copia, deve attestare a suo nome la conformità all'originale, assumendosi ogni responsabilità per usi illeciti o non consentiti. Qualunque alterazione o falsificazione sarà perseguita a norma di legge.
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# Tenaris MTC

Tenaris S.p.A. - Daimine plant  
 P.le C. Caddi, 6 - 10194, I  
 20144 D. D. (BG) - Italy  
 +39 035 560 111 tel.  
 +39 035 560 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
 Date / Data: **July 27, 2016**  
 Page / Pagina: **6 / 7**

Customer / Cliente: <b>SUN-BBII-160314-C-198</b>	Customer's Order Item / Rifer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: <b>SUN-BBII-160314-C-198</b>	Manufacturer's Works Order N° / Conferma-Posizione: <b>1243316/027</b>
Manufacture Process / Processo di fabbricazione: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS)</b>	Product Type / Tipo di prodotto: <b>TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Surface / Superficie: <b>BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH</b>
Standard or Specification / Norme o specifiche: <b>See note nr.1</b>	Steel Grade / Grado dell'Acciaio: <b>See note nr.2</b>	Ends / Estremità: <b>See note nr.3</b>
Dimensions / Dimensioni: <b>Ø 24.000" O.D. x 0.375" W.T.</b>	Schedule / Scheda: <b>20</b>	Nominal Weight / Peso nominale: <b>94.83 lb/ft</b>
<b>Ø 610.0mm O.D. x 9.53mm W.T.</b>	Length / Lunghezza: <b>32.162 ft + 38.714 ft</b>	<b>141.12 Kg/m</b>
<b>9800 mm + 11800 mm</b>	Quantity / Quantità: <b>10Pcs/Pz</b>	
	<b>35556.1 lb</b>	
	<b>16128 kg</b>	

### MARKING / MARCATURA

STENCILING _T SPEC 5L 0038.1 _API _DATA 610 9.53 B PSL 1 SMLS ASTM ASME A SA 106 B MPA; 4.7INDE ASTM ASME A SA 53 B S HEAT. _COLATA MT _MT KG _KG NR _NR	VERNICIATURA _T SPEC 5L 0038.1 _API _DATA 610 9.53 B PSL 1 SMLS ASTM ASME A SA 106 B MPA; 4.7INDE ASTM ASME A SA 53 B S HEAT. _COLATA MT _MT KG _KG NR _NR
LEGEND _T = TENARIS Logo _API = API Logo _DATA = Marking Date _COLATA = Heat Number _MT = Pipe/Tube Length in meters _KG = Pipe/Tube Weight in Kilograms _NR = Pipe/Tube Identifier	LEGENDA _T = Logo TENARIS _API = Logo API _DATA = Data di marcatura _COLATA = Numero di colata _MT = Lunghezza del tubo in metri _KG = Peso del tubo in chilogrammi _NR = Identificativo numerico del tubo

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# Tenaris MTC

Dalmine S.p.A. - Dalmine plant  
 via Caddo 1, luglio 1944, 1  
 24044 Caddo (PD) - Italy  
 +39 035 560 111 tel.  
 +39 035 560 3827 fax



## INSPECTION CERTIFICATE CERTIFICATO DI COLLAUDO (UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/16/09075**  
 Date / Data: **July 27, 2016**  
 Page / Pagina: **7 / 7**

Customer / Cliente: <b>SUN-BBII-160314-C-198</b>	Customer's Order Item / Refer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: <b>1243316/027</b>	Manufacturer's Works Order N° / Conferma-Posizione: <b>1243316/027</b>
Manufacture Process / Processo di fabbricazione: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Product Type / Tipo di prodotto: <b>SEAMLESS LINE PIPES (WITH EXTRA REQUIREMENTS) TUBI S.S. LINE PIPE (CON RICHIESTE SUPPLEMENTARI)</b>	Surface / Superficie: <b>BARE INSIDE, EXTERNALLY PROTECTED BY VARNISH GREZZI INTERNAMENTE, OLEATI ESTERNAMENTE</b>
Standard or Specification / Norme o specifica: <b>See note nr.1</b>	Steel Grade / Grado dell'Acciaio: <b>See note nr.2</b>	Ends / Estremità: <b>See note nr.3</b>
Dimensions / Dimensioni: <b>ø 24.000" O.D. x 0.375" W.T. ø 610.0mm O.D. x 9.53mm W.T.</b>	Length / Lunghezza: <b>32.152 ft + 38.714 ft 9800 mm + 11800 mm</b>	Nominal Weight / Peso nominale: <b>94.83 lb/ft 141.12 Kg/m</b>
Schedule / Scheda: <b>20</b>	Quantity / Quantità: <b>10Pcs/Pz</b>	

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

<b>CUSTOMER THIRD PARTY</b>	<b>TENARIS QUALITY DEPARTMENT SIGNATURE</b>
INSPECTION COMPANY COMPAGNIA D'ISPEZIONE	 QUALITY CERTIFICATION DEPT. UFFICIO CERTIFICAZIONE QUALITA' SIGOLI Gianluca
	 CHIEF OF QUALITY CERTIFICATION DEPT. RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' FERRARI Domingo

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Chapter 3.

# Quality Manual



## Chapter 3.

# Q.A MANUAL

### **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 than 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	HKC	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	KNPC	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-Il	CHUNBO TANK	Hastelloy C22 Plate, Tube
2020	SK- Materials	Main Tech Plant	SK- Materials D-4	CS, SS PIPE, FITTINGS, FLANGE