

General Introduction

Quality
Introduction

Safety

Version 5.6

As of Jan 13, 2017



Connecting the world
Connecting the future.

 **TK Corporation**
PIPE FITTINGS

Brief History

1960

1965 Established "Taekwang Bend Co.,Ltd"
The first pipe-fitting manufacturer in Korea

1970

1977 Certified by DNV

1980

1981 Certified by Korea Industrial Standard (KS)
1984 Certified by Bureau Veritas (BV)

1990

1992 Certified by ASME NPT
1994 Listed in KOSDAQ Stock Exchange Market
1997 Certified by ISO 9001:1994
1998 Certified by API 6A

Brief History

2000

2001 Changed company name as "TK Corporation"
2001 Moved Head office & 1st Factory to Noksan Industrial Complex, Busan (56,817m²)
2002 Certified by Japanese Industrial Standard (JIS B2311 ~ 2313)

2007 Awarded as "Asia's Best under a Billion" by Forbes
2008 Awarded as "Asia's Best under a Billion" by Forbes
2008 Awarded as "World Best Products" by Korea Government, MOKE
2009 Certified by OHSAS 18001

2010

2010 Established 2nd Factory in Hwajeon Industrial Complex (60,000m²)
2011 Certified by ISO 14001

2013 Established 3rd Factory in Hwajeon Industrial Complex (49,000m²)
2014 Qualified NORSOK M-650 Ed.4

Company Location



Address

117-12, Noksan Saneop Daero, Gangseo-gu,
Busan, Korea

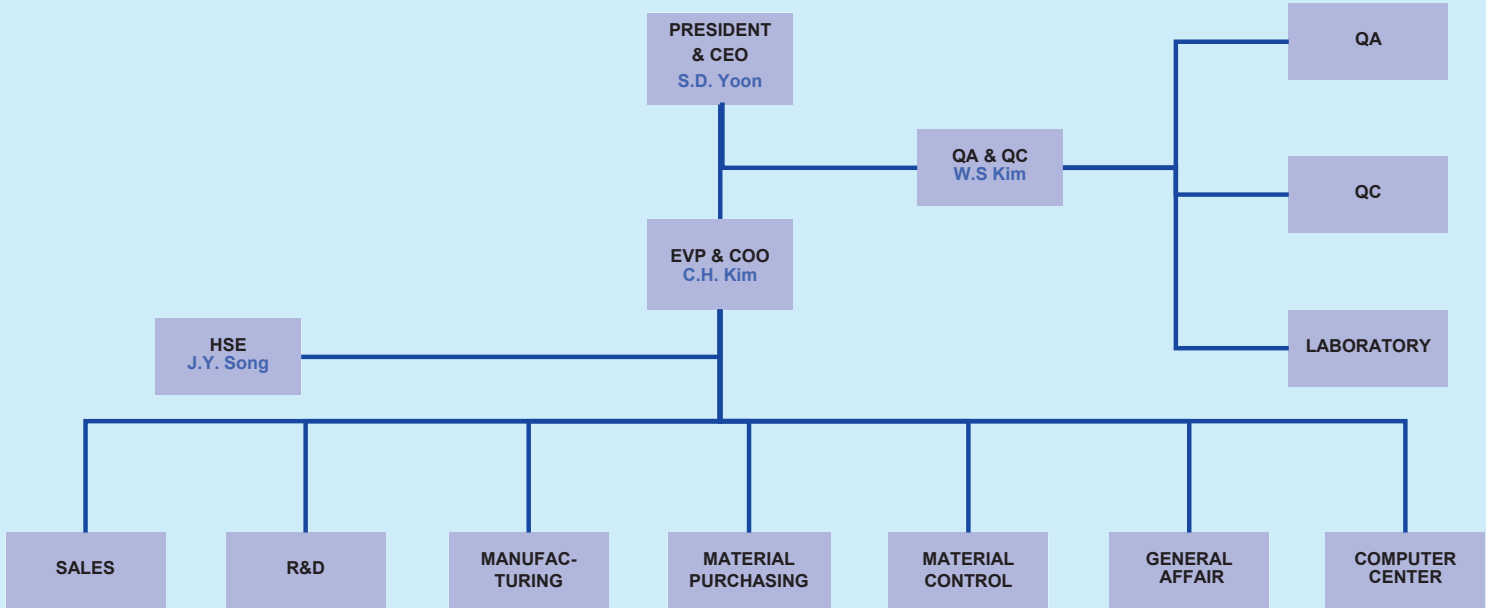
Tel : +82 51 970 6600

Fax : +82 51 831 5599

Email : tkbend@tkbend.co.kr

<http://www.tkbend.co.kr>

Company Organization



**WELDING
ENGINEERING**

Welding Engineering Team

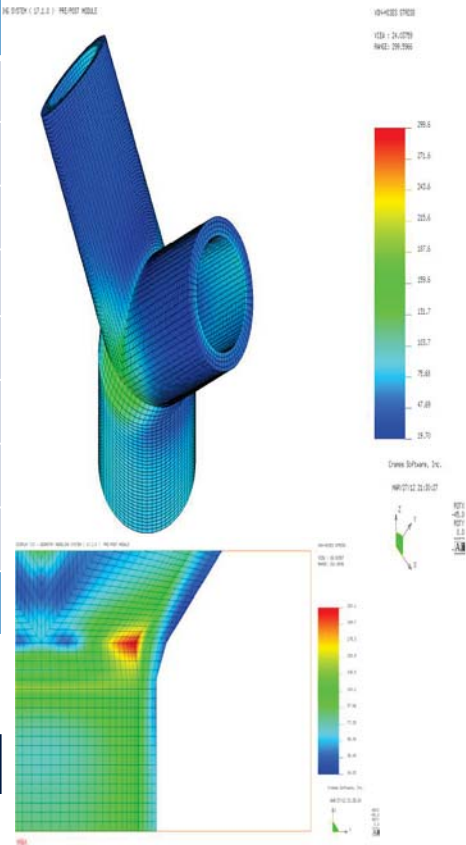
J.H Lee - Welding Engineer, International Welding Engineer(IWE)	K.D. Han - Welding Inspector, CSWIP 3.1
Y.J Kim – Head Welding Monitoring, Master Craftsman Welding, Hyundai Heavy Industries, Certified Welding Inspector(CWI)	D.J Jung - Welding Monitoring Person
C.H Son - Welding Engineer, International Welding Engineer(IWE)	

Company Organization

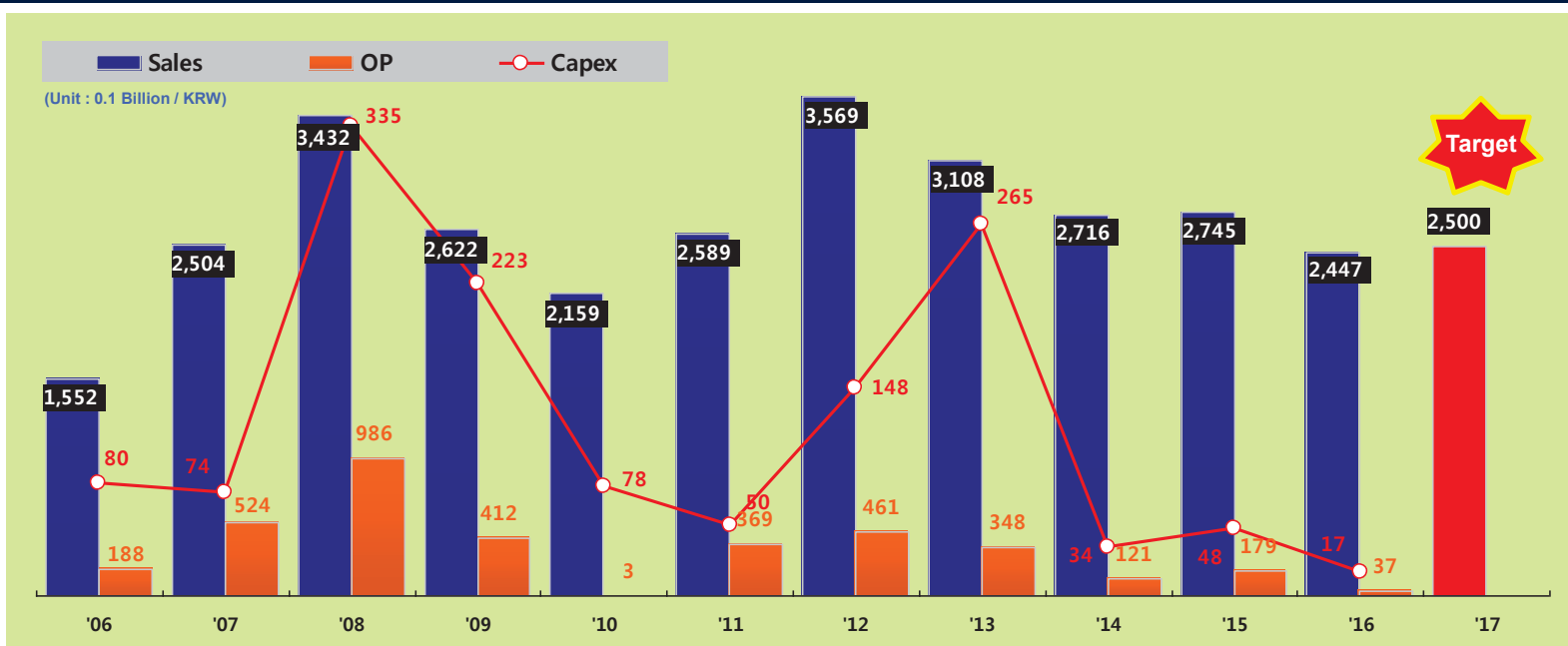
Job description	Number	Remark
QA & QC	22	
HSE	2	Floor Safety Supervisor : 23
Engineering & Design	6	
Manufacturing	305	IWE : 2 / CWI: 1 / CSWIP: 1 Engineers : 46 / Workers : 259
Computer Center	4	
General Affair & Accounting	14	
Sales & Marketing	66	
Material Purchasing & Control	5	
Total	425	

In-house Subcontractor

NDE	74	ASNT Level 3: 10 / EN 473 Level 3: 4
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Annual Sales



Balance Sheet

Balance Sheet	2012	2013	2014	2015	2016
■ Assets	4,494	4,686	4,666	4,799	4,747
■ Liability	625	543	536	501	394
■ Debt	0	0	0	0	0
■ Stockholders Equity	3,869	4,143	4,130	4,292	4,353

Total capex

ITEM	2012	2013	2014	2015	2016
Land	-	154	-	-	-
Building	49	22	1	1	1
Equipment	99	89	33	47	16
TOTAL	148	265	34	48	17

Business Performance

D & B Report

COMPANY DETAILS

TK Corporation

D-U-N-S	68-789-0093
ADDRESS	117-12, Noksansaneup-daero, Gangseo-gu, Busan, Korea
TEL	8251-9706659
FAX	8251-8315599
URL	www.tkbend.co.kr
Chief Executive	Yoon, Sung Duk President
Line of Business	Mfg. of Pipes and Tubes, of Non-cast Iron or Steel
SIC	3462-9904 3465-9905
Paid Up Capital	13,250,000,000<KRW>
Sales	274,492,535,000<KRW>
Tangible Net Worth	428,068,815,000<KRW>

Started	1965
Registered	1982
Import	YES
Export	YES
Employs	457

D&B Rating	5A1	History	Clear
(Prev. D&B Rating)	5A1	Condition	Strong
CLIP Risk Analysis	A+	Trend	Even
(Prev. CLIP Risk Analysis)	A+		
Cash Flow Rating	C+(CFR3)		
(Prev. Cash Flow Rating)	C+(CFR3)		

CURRENCY : All Monetary shown in KOREAN MILLION WON unless otherwise stated.
Exchange Rate of The Latest Fiscal Year (as of Dec. 31, 2015) : 1,172.00 KRW/USD

Raw Material Sourcing

-	SUPPLIER	COUNTRY	REMARKS
CARBON STEEL			
SEAMLESS PIPE	JFE / TENARIS NKK / NIPPON STEEL & SUMITOMO METAL / TPCO DALMINE	JAPAN / ITALY / CHINA	UP TO Ø426mm OVER Ø426mm
SAW PIPE	SEAH / HYUNDAI	KOREA	
PLATE	POSCO / JFE / INDUSTRIEEL	KOREA / JAPAN / BELGIUM	
FORGING / BAR	SEAH CSS / KOREA IRON & STEEL / TAESANG	KOREA	
STAINLESS STEEL			
SEAMLESS PIPE	NIPPON STEEL & SUMITOMO METAL / JFE / TENARIS NKK	JAPAN	
EFW PIPE	SEAH / LS METAL / B&B SUNGWON	KOREA	
PLATE	POSCO / OTOKUMPU / INDUSTRIEEL	KOREA / SWEDEN / BELGIUM	
FORGING / BAR	SEAH CSS/ KOREA IRON & STEEL / TAESANG	KOREA	
ALLOY STEEL			
SEAMLESS PIPE	NIPPON STEEL & SUMITOMO METAL / JFE / TENARIS NKK / DALMINE	JAPAN / ITALY	UP TO Ø426mm OVER Ø426mm
PLATE	POSCO / JFE / INDUSTRIEEL / OTOKUMPU	KOREA / JAPAN / BELGIUM / SWEDEN	
FORGING / BAR	SEAH CSS / KOREA IRON & STEEL / TAESANG	KOREA	
INCONNEL	ALLEGHENY L. Corp / INCO ALLY INC / NIPPON STEEL & SUMITOMO METAL	USA / JAPAN	
DUPLEX SEAMLESS PIPE			
DUPLEX SEAMLESS PIPE	SANDVIK / T.T.I TUBACEX / SALZGITTER	SWEDEN / FRANCE / SPAIN / FRANCE	NORSOK M-650 CERTIFIED SUPPLIER
SUPER DUPLEX PLATE	OTOKUMPU / INDUSTRIEEL	SWEDEN / BELGIUM	
DUPLEX EFW	AST / BSL	SWEDEN / FRANCE	
DUPLEX FORGED	KOREA IRON & STEEL / TAESANG	KOREA	

Product Range & Capacity

ITEM	PRODUCTION RANGE			CAPACITY (Ton / Yearly)
	Maximum Mold Type(inch)	Maximum Fabricated Type(inch)	Maximum Wall Thickness	
Elbow	96"	158"(*)	200mm (CS:200, SS:200, AS:120, DSS:77)	110,000
Tee	96"	158"(*)	200mm (CS:200, SS:200, AS:120, DSS:77)	37,000
Reducer	48"	158"(*)	200mm (CS:200, SS:200, AS:120, DSS:77)	13,000
Cap	132"	158"(*)	200mm (CS:200, SS:200, AS:120, DSS:77)	1,800
Flange	~80"			5,200
Forged Fittings	~4"			1,800
Outlets	~36"			950
Stub-Ends	~10" (Seamless) / Over 10" (Welded)			250
Seamless Pipe	18"~36"			5,000

(*) Note:
TK can build these products by welding segment pieces. So, the maximum available dimension is bigger than 158"



Head Office & 1st Factory

Location : Noksan Industrial Complex, Busan, South Korea,
Area : 56,817 m²



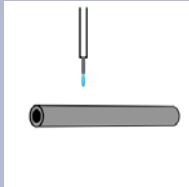
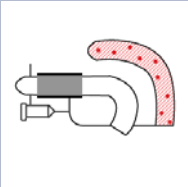
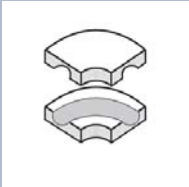
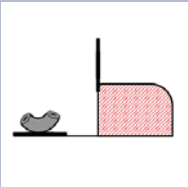
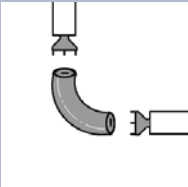
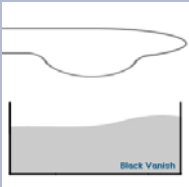
2nd and 3rd Factory

Location : HwaJeon Industrial Complex, Busan, South Korea,
Area : 108,900m²



Manufacturing Process

Elbow by Mandrel

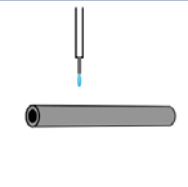
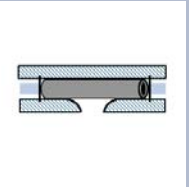
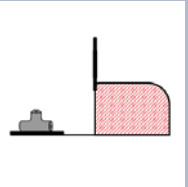
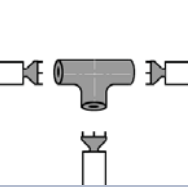
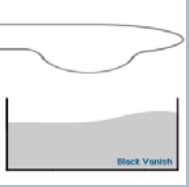
Receiving Inspection	Cutting	Hot Forming(~60")	Sizing
			
Heat treatment	Shot Blasting	Bevel Machining	Coating
			



Mandrel

Manufacturing Process

Tee by Cold Forming

Receiving Inspection	Cutting	Forming	Heat treatment
			
Shot Blasting	Bevel Machining	Coating	
			

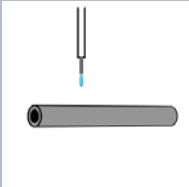
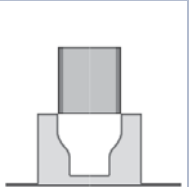
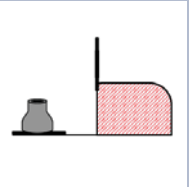
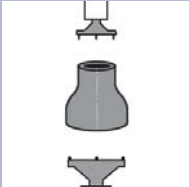
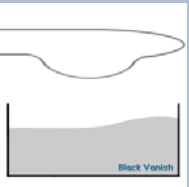
Up to 6"	SMLS	SMLS Pipe	Hydro Stamping(*)	Cold Hot
8" to 36"	1 seam	Plate/Welded Pipe	Hydro Stamping(*)	Cold Hot
38" and above	1 seam	Plate	Stamping(*)	Hot

(*)The shell is formed elliptically by hot stamping.



Manufacturing Process

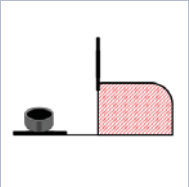
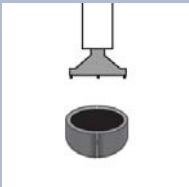
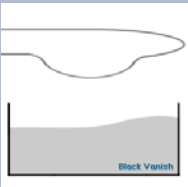
Reducer by Cold Forming

Receiving Inspection	Cutting	Forming(Compression)	Heat treatment
			
Shot Blasting	Bevel Machining	Coating	
			



Manufacturing Process

Cap by Cold Forming

Receiving Inspection	Cutting	Forming	Heat treatment
			
Shot Blasting	Bevel Machining	Coating	
			



Expanding Pipe

Seamless



FEATURES

- Total competence in expanding pipe (seamless pipe)
- A Size range : 18" ~ 36" OD
- A range of grades
 - A 106-B
 - A 333-6
 - A 335 P5, P9, P11, P22, P91
- Length : Max. 6 m
- Source of mother pipe
 - NIPPON STEEL & SUMITOMO METAL (JAPAN)
 - TENARIS(JAPAN)
 - WYMAN GORDON(USA)



Major Equipment

Tee Forming

Tee Bulging Press 20,000 Ton



Tee Bulging Press 15,000 Ton



Major Equipment

Hot & Cold Forming

6,000 Ton Hydraulic Press



5,000 Ton Hydraulic Press



Major Equipment

Hot Bending

60" Bending Machine



Major Equipment

Automatic process by Robot



Major Equipment

Heat Treatment



Heat Treatment Furnace for Stainless & Duplex Steel



Furnace Working Zone : W 3,400 mm x L 4,900 mm x H 1,400 mm

Water Bath Size : W 5,000 mm X L 7,500 mm X Depth 3,000 mm

Maximum Temperature : 1200°C

Transfer time to bath : Max 60 seconds(NORSOK M-650) / TK's quenching time : About 45 seconds

Major Equipment

RO (Reverse osmosis) water filter

RO (Reverse Osmosis) water filter has been installed at Water quenching bath of Solution Annealing Heat treatment Furnace (8011) in Jan, 2015.

This facility ensures the chloride concentration to be kept below 25ppm.



Final Filters



1st and 2nd Filters

Major Equipment

Heat Treatment

Heat Treatment Furnace for Alloy & Carbon steel



Working Zone : W 3,9000 mm x L 5,9000 mm x H 1,400 mm
Maximum Temperature : 1100°C

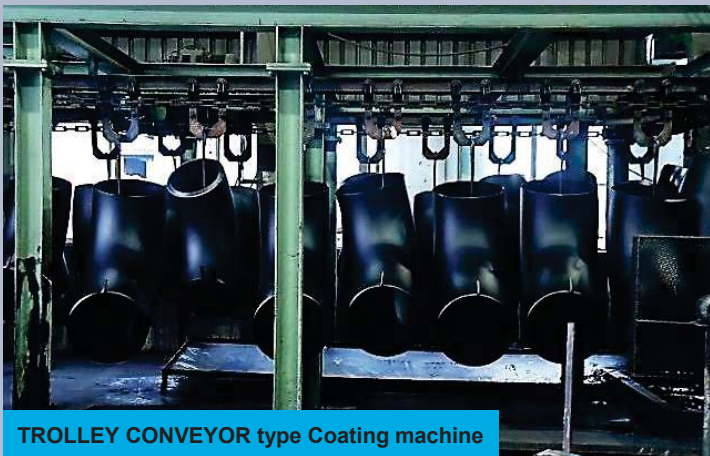
Heat Treatment Furnace for Seamless Pipe



Various type of Molds & Mandrel



Coating & Shot-Blasting & Packing



Laboratory

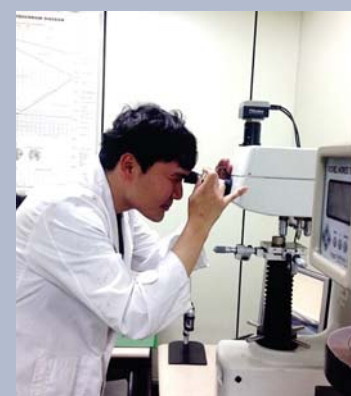
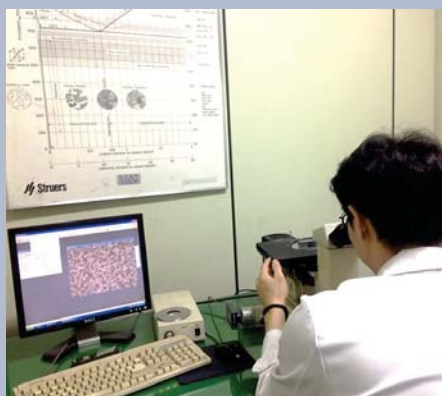


Laboratory where we perform :

- HIC / SSCC Test
- Chemical Analysis
- Mechanical Properties Analysis
- Micro structure Analysis
- Impact Test (at - 196 °C)
- Corrosion Test ; HIC / G48(Pitting Test) / A262(IGC)
- Hydraulic Test / Burst Test

Low Temperature Carbon Steel & High yield fittings

Sacrificial fitting or a prolongation from a production fitting per every Heat Number are tested to ensure quality of impact toughness regardless of code's requirements



Laboratory

Testing/Analysis Facilities



Chemical Analysis(CS, AS, SS, DSS)



Impact Test (- 196°C)

Laboratory

Testing/Analysis Facilities



HOT TENSILE TESTER(300°C ~ 1000°C)



TENSILE TESTER(Room Temperature)

Laboratory

Testing/Analysis Facilities



ROCKWELL HARDNESS TESTER(60HRC)



BRINELL HARDNESS TESTER(305HB)



VICKERS HARDNESS TESTER(940HV)



METALLOGRAPHIC MICROSCOPE (X 500)

Laboratory

Testing/Analysis Facilities



PMI Master Pro(SS, DSS, AS, Non-Ferrous)



NITON XLI-818(SS, DSS, AS, Non-Ferrous)

Laboratory

HIC/SSCC Test Laboratory



HIC : Carried out in accordance with NACE TM 0284

SSCC : Carried out in accordance with 4 points bending method of NACE TM 0177



Major Certificates

ISO 9001(Sep 15, 2018)	ISO 14001(Jul 24, 2017)	OHSAS 18001(Jun 5, 2018)	TR CU 010/032(Oct 28, 2020)
			
API 6A(Aug 31, 2018)	PED 2016/68/EU(Jul 29, 2017)	Achilles(Apr 27, 2017)	NORSOK M-650 Ed.4 (Nov 18, 2018)
			

Main Customers -EPCs



Main Customers – End users

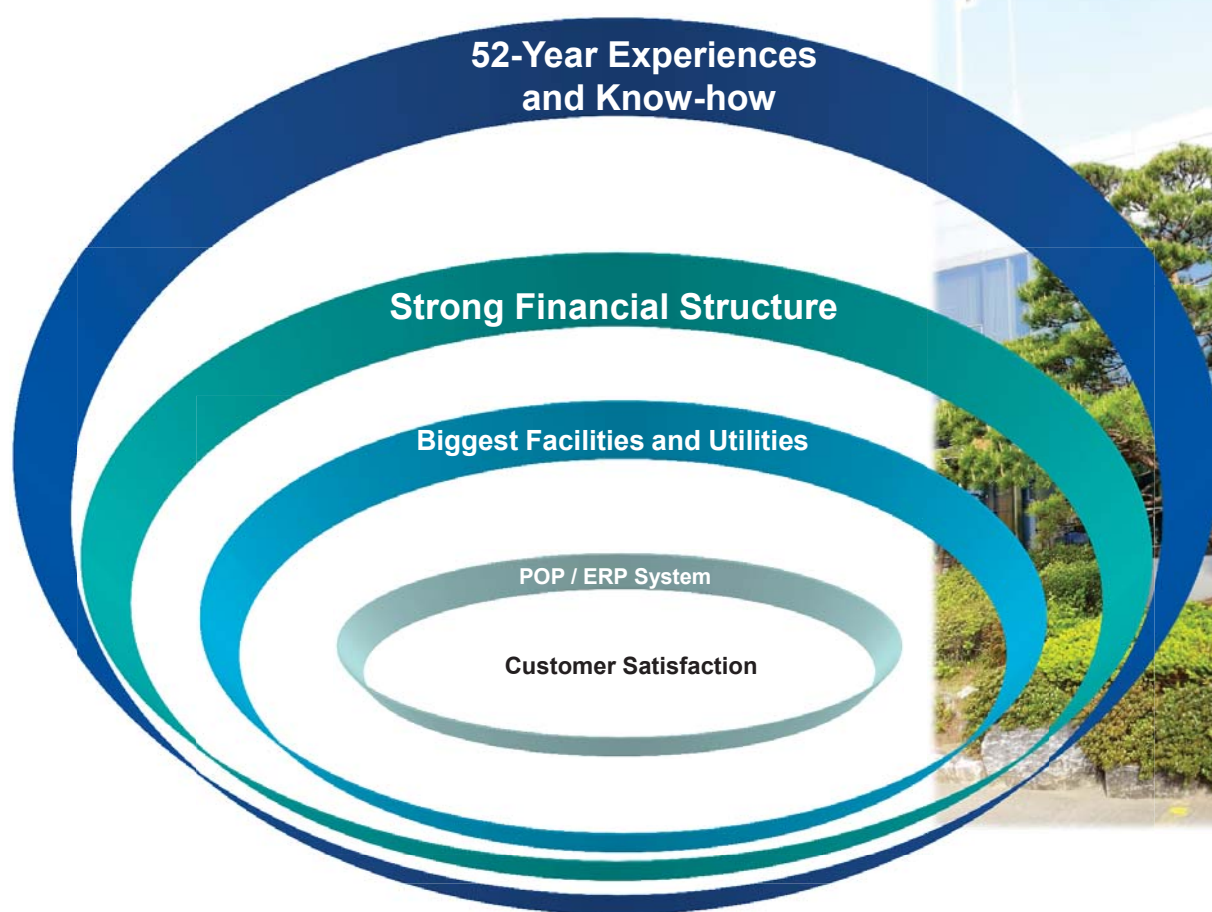


Contact Points

Department	Contact Person	Phone	Fax	Email	Address
Head Office	Sangwon Yoon Sales Director	+82 51 970 6650	+82 51 831 5599	swyoon@tkbend.co.kr	117-12 Noksansaneop-daero, Gangseo-gu, Busan, Korea
Seoul Office	Wonsik Yoon Sales Director	+82 2 3775 3400	+82 2 3775 3404	tkseoul@tkbend.co.kr	#607 Sinsong Building 25-4, Yeouido-Dong, Yeongdeungpo-gu, Seoul, Korea
Overseas Sales Office	Junsik Yoon Sales Director	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
TK Fitting USA INC	YJ Kim Sales Manager	+1 713 464 4807	+1 173 464 5105	yjk@tkbend.co.kr	16300 Katy Freeway Suite#220, Houston, TX77094, USA
TK Fitting BRAZIL INC	Rodrigo D. De Lima Sales Director	+55-11-4218-1261	-	rodrigo@tkbend.co.kr tkbend@branchtrade.com	Rua Bras Cubas 222, apto 202A, Guarulhos, SP, Brazil
Overseas sales for Europe	Sean Lee Sales Manager	+82 51 709 8506	+82 51 747 8444	sean@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for Middle East & Africa	Benjamin Lee Sales Manager	+82 51 709 8503	+82 51 747 8444	benjamin@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for South-East Asia	Junsik Yoon Sales Manager	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for China & Taiwan	Junsik Yoon Sales Manager	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for India	Junsik Yoon Sales Director	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for Japan	Junsik Yoon Sales Director	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea
Overseas sales for North America	YJ Kim Sales Manager	+1 713 464 4807	+1 173 464 5105	yjk@tkbend.co.kr	16300 Katy Freeway Suite#220, Houston, TX77094, USA
Overseas sales for Middle & South America	YJ Kim Sales Manager	+1 713 464 4807	+1 173 464 5105	yjk@tkbend.co.kr	16300 Katy Freeway Suite#220, Houston, TX77094, USA
Overseas sales for Australia	Junsik Yoon Sales Manager	+82 51 709 8523	+82 51 747 8444	jsyoon@tkbend.co.kr	#801 Jeongsun Building, 1270-1, Jwa-dong, Haeundae-gu, Busan, Korea



Why ! TK CORPORATION ?





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<http://www.tkbend.co.kr>

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<http://www.tkbend.co.kr>

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TX 77094, USA

Tel : +1 713 464 4808

Fax : +1 713 464 5105

Email : yjk@tkbend.co.kr

<http://www.tkbend.co.kr>



Main Customers -EPCs

KOREA-EPCs



Main Customers -EPCs

JAPAN-EPCs



Main Customers -EPCs

CHINA&TAIWAN-EPCs



中鼎工程股份有限公司
CTCI CORPORATION



China & Taiwan



Main Customers -EPCs

INDIA-EPCs



India



Main Customers -EPCs

SOUTH-EAST ASIA-EPCs



Main Customers -EPCs

AUSTRALIA-EPCs

McCONNELL DOWELL CREATIVE CONSTRUCTION™	 WorleyParsons resources & energy
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Main Customers -EPCs

MIDDLE-EAST-EPCs



Middle-East
& Central Asia



Main Customers -EPCs



Main Customers -EPCs

SOUTH AMERICA-EPCs



South America



Main Customers -EPCs

NORTH AMERICA-EPCs



FLUOR



FLUOR

JACOBS

KBR



North America



Main Customers – End users

KOREA-End users



South
Korea



Main Customers – End users

JAPAN-End users



台塑石化股份有限公司
FORMOSA PETROCHEMICAL CORPORATION





Main Customers – End users

CHINA&TAIWAN-End users

CHEMCHINA CNOOC CNPC SINOPEC

China & Taiwan



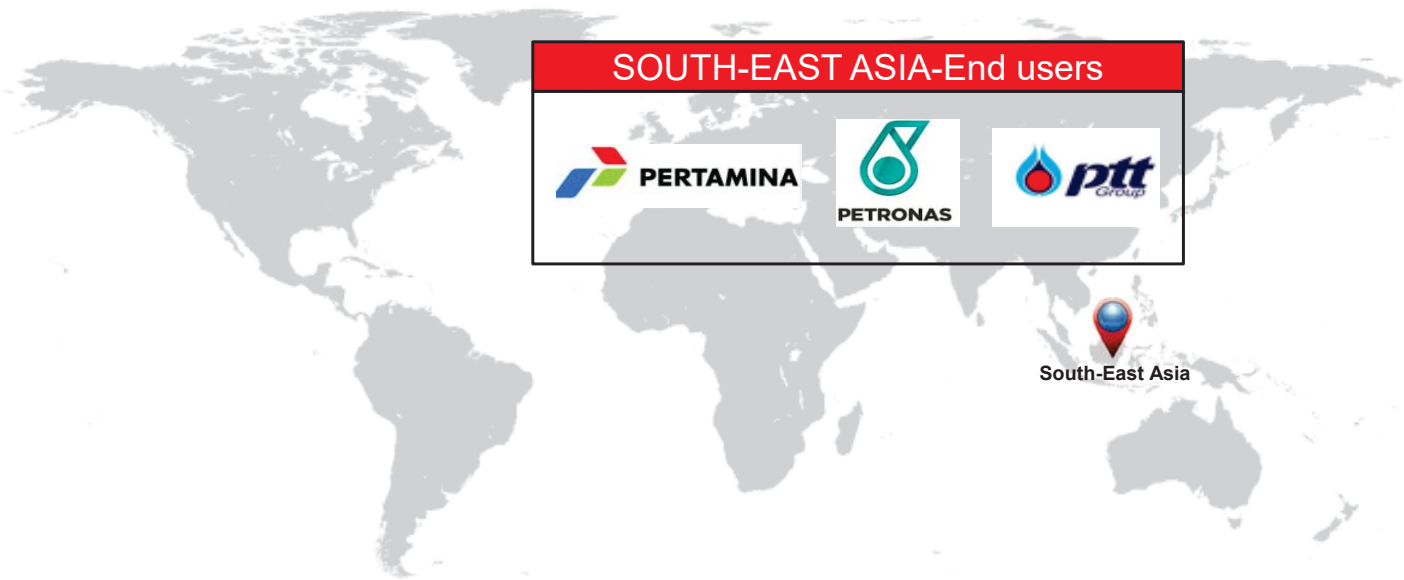
Main Customers – End users

INDIA-End users





Main Customers – End users



Main Customers – End users

AUSTRALIA-End users



Australia



Main Customers – End users

MIDDLE EAST-End users



Middle-East
& Central Asia



Main Customers – End users

EUROPE-End users

bp

GAZPROM

Luke Oil

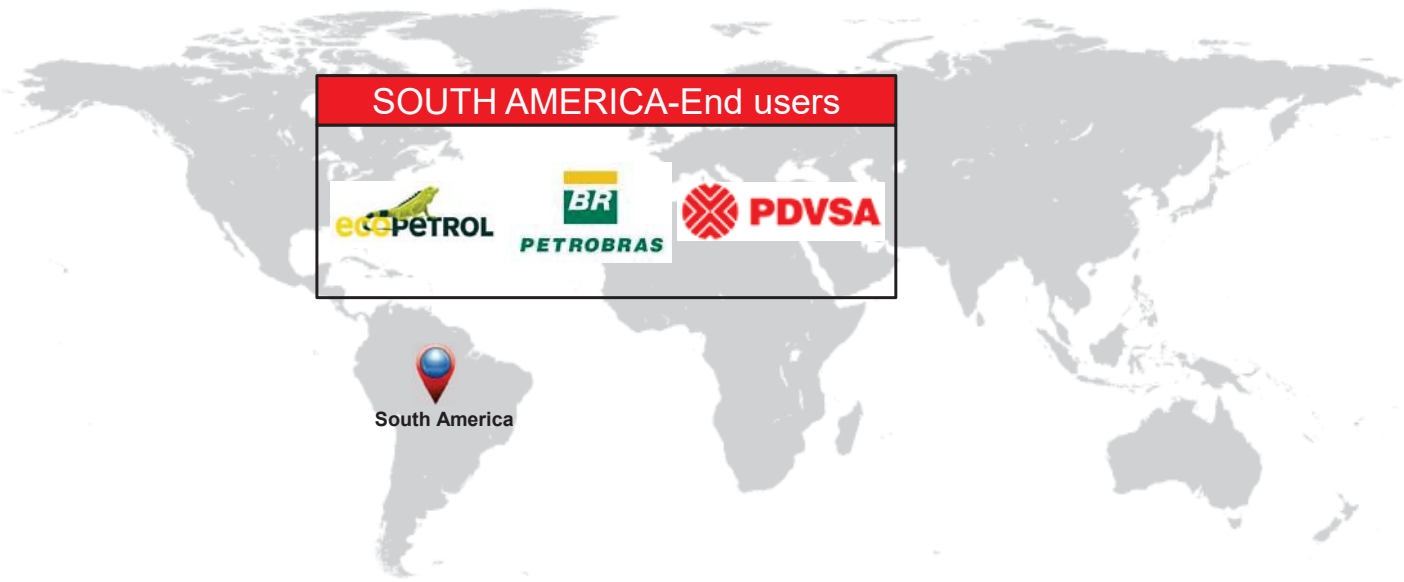
Shell

Statoil

TOTAL



Main Customers – End users



Main Customers – End users

NORTH AMERICA-End users

