

since Sep. 1988

Pre- QUALIFICATION DOCUMENTS

HWASUNG FASTENERS Co., Ltd.



HEAD OFFICE & 1st PLANT

#87-16, Soju-ro, Yangsan-city, Gyeongnam, Korea

Tel +82-(0)55-366-3456, Fax +82-(0)55-366-3459

Website : www.hsbolt.co.kr

E-mail : hsbolt@hsbolt.co.kr

R&D CENTER & 2nd PLANT

#33, Dulleom-gil, Yangsan-city, Gyeongnam, Korea



Company view



HEAD OFFICE & 1st PLANT(4,209m²)

87-16, Soju-ro, Yangsan-city, Gyeongnam, Korea



R&D CENTER & 2nd PLANT(2,945m²)

33, Dulleom-gil, Yangsan-city, Gyeongnam, Korea

The world best with advanced technologies and high quality

Contents

1. Preface	5
2. Corporate overview	6
3. Product information	12
4. Plant information	18
5. Quality management	19
6. Certificate & vendor approval	22
7. Sales reference	23
# Appendix : REFERENCE LIST	Ref. 1

Our Reference No.:

Subject : Pre-Qualification Application for Vendor Approval

Recipient:

Attn.:

To whom it may concern;

We HWASUNG FASTENERS Co., Ltd. are pleased to submit our company Pre-Qualification Application to you for review and evaluation.

We hope we can cooperate with your esteemed firms in the near future.

Thank you very much again for your invitation to the Vendor Pre-Qualification evaluation.

We are looking forward to hearing from you soon.

Best regards

IL-BONG . WON



1. Preface

1) CEO's Greetings

Dear Sir(s)

I am very delighted to have a chance to introduce our company to you. **HWASUNG FASTENERS Co., Ltd.** was established on 17th Sep. 1988.

Since establishment, HWASUNG FASTENERS Co., Ltd. has been making great efforts in providing customized and special-purposed fasteners to domestic and overseas markets.

With a great entrepreneurial spirit, HWASUNG FASTENERS Co., Ltd. Developed and manufactured various kinds of fluorocarbon-coated fasteners for the first time in Korea.

We have been participating in several development research projects, and joining material mill process projects for the improvement of the quality of source material.

As a result of steady endeavor, HWASUNG FASTENERS Co., Ltd. now has become one of the major manufacturers/suppliers that covers KS, JIS, BS, EN, DIN, ASTM, ASME, NORSOK And is ready to fulfill customers' special requirements.

Also, HWASUNG FASTENERS Co., Ltd. will do its whole efforts continuously by developing new products and improving quality and technology.

HWASUNG looks forward to your sincere encouragement and supports.

Thank you very much.

IL-BONG, WON.

The President of **HWASUNG FASTENERS Co., Ltd.**

IL-BONG, WON



2. Corporate overview

1) Corporate General Information

Type of Organization	Corporation	President	Won, Il - Bong
		Treasurer	Rhyu, Sung – Ae
		GeneralManager	Won, Jong - Hyeon
Company name	HWASUNG FASTENERS Co., Ltd.		
Head office / 1 st Plant	87-16, Soju-ro, Yangsan-city Gyeongnam, Korea	Tel No.	+82.(0)55.366.3456
		Fax No.	+82.(0)55.366.3459
2 nd Plant	33, Dulleom-gil, Yangsan-city Gyeongnam, Korea	Tel No.	+82.(0)55.388.2320
		Fax No.	+82.(0)55.388.2321
Website & Email	www.hsbolt.co.kr hsbolt@hsbolt.co.kr	Person in Charge	Won, Jong - Hyeon
Contact person	Won, Jong - Hyeon	Tel No.	+82.(0)55.366.3456
		Mobile	+82.(0)10.9661.8825

2) Company Location Map

HWASUNG is located in Yangsan-city, east region of Gyeongang, South-east part of the Korea

[Company Location Map]



3) Corporate brief chronicles and events

Month/year	Chronicles / Events
# Founding & Base Firming	
Sep. 1988	Established as Bolt & Nuts manufacturer and wholesaler accredited as an exclusive selling agent of Dong-Ah construction company in Busan region
Mar. 1989	Registered as a fastener supplier to Hyundai heavy industry
Jun. 1990	Designated as an exclusive supplier of high-Bolt & Nut to POSCO
Nov. 1990	Approved as a major vendor for Wood-Side Project(Australia)
Dec. 1992	Approved as a major vendor for Rasco Project(Canada)
Oct. 1993	Developed P.T.F.E. coating applying to Fasteners for the first time in Korea
Jun. 1994	Got quality approved for the nuclear power plant use by KEPCO (Korea Electric Power Corporation)
Jul. 1995	Earned QPC III(ASME III) Quality Approval for Wol-song nuclear power plant by Hyundai Eng. & Construction Co., Ltd.
# Expansion & Growth	
Jan. 1996	Designated as an approved Vendor to Incheon LNG Project by Daewoo E&C
Apr.	Accredited Vendor to DAELIM E&C
Jan. 1997	Approved of vendor by “Q” Class(ASME sec. III) for Young-kwang nuclear power plant
Apr.	Earned a certificate of approval for “ISO9001” by KPC-QA
Jan. 1998	Approved as a QAP III(ASME sec. III) Vendor for KEPIC(Korea Electric Power Industry Code) by Korea heavy industry
Apr. 1999	Approved of “Q” class(ASME sec. III) vendor by KEPCO
Apr.	Accredited a “Q” class(ASME sec. III & KEPIC-MN/SN) vendor for Ul-jin site by Han-jung, Dong-ah, Samsung)
Apr. 2000	Approved of vendor by Korea National Gas Corporation
May.	Had cold heading line set up
Oct.	Approved of a vendor for nuclear power plant(ASME sec. III)
May. 2005	Had quality system approved by KEPIC-MN/SN by KEA

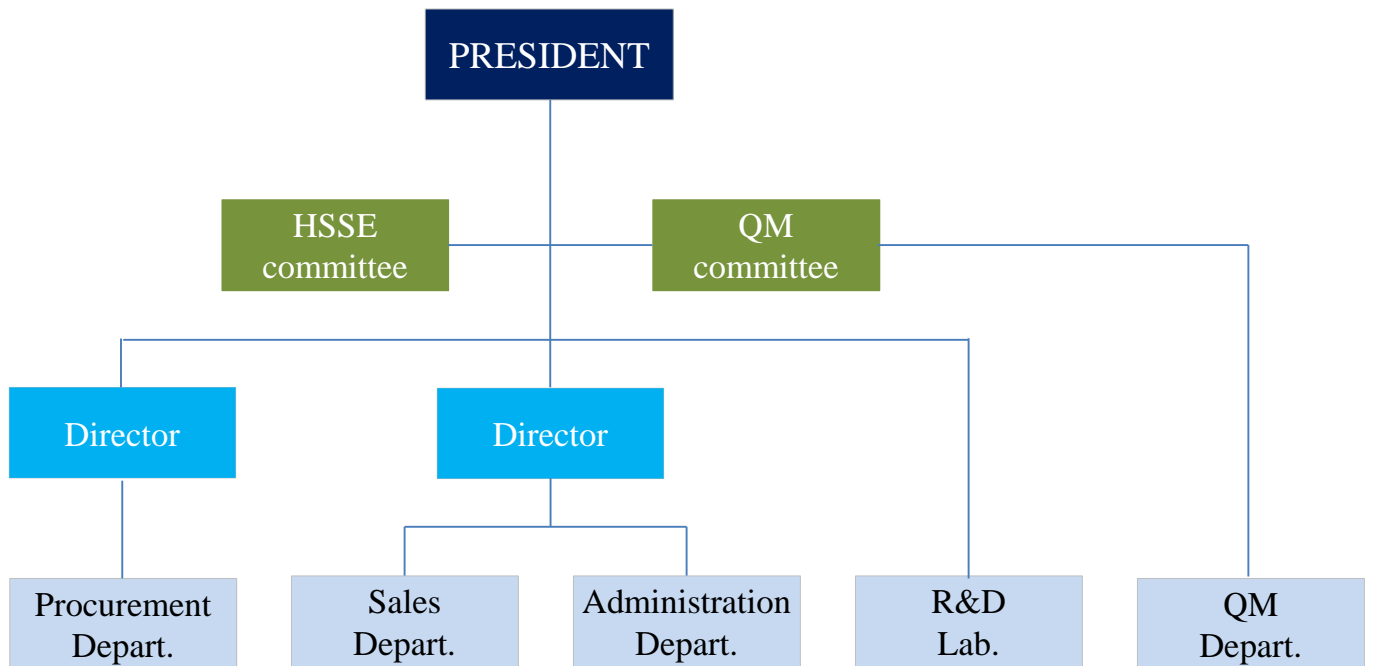
2. Corporate overview

# New Challenge & Leap	
Aug. 2006	Heat Treatment line setup(at Kimhae-city)
Jan. 2009	Approved of a vendor by SAMREF in Saudi Arabia(SAUDI ARAMCO EXXON MOBIL)
Apr.	Accredited certificate of ‘GLOBAL BRAND 2002’ choice Company by KOTRA
Mar. 2010	Accredited certificate of Main-biz
Jul.	Establishment of R&D center
Aug.	‘One-KEPCO export business group’ Organized by KEPCO
Sep.	Moved to new factory site(current site)
Oct.	Earned a certificate of approval for ISO 9001 and ISO/TS29001 by LRQA Korea
Oct.	Earned a Certificate of approval for ISO 14001 By LRQA Korea
Apr. 2011	Approved of a vendor by Achilles JQS(for the oil industry in Norway and Denmark)
Apr.	Approved of a vendor by Chevron(Gorgon Project)
Apr.	Exclusive vendor registration of HHI IGD-DAS Project
May.	Accredited a “Q” class by SHINULJIN nuclear power plant
May.	Accredited a “Q” class by UAE BNPP nuclear power plant
Nov.	Nominated as a “Clean factory” by Korea occupational safety and Health agency
Feb. 2012	Exclusive vendor registration of HHI BARZAN Project
July.	Earned a certificate of approval for PED(CE) by LRQA-Korea
Sep.	Exclusive vendor registration of HHI Q204, DSO, CLAIRRIDGE, DELTAHOUSE Project(BP)
Sep.	Exclusive vendor registration of HEC TAZA GAS, RUMAIA GAS, MUSANDAM GAS, OLKARIA power plant Project
Sep.	Exclusive vendor registration of Hyundai E&C, GS E&C, Daewoo E&C Samcheok green Power plant, Pocheon power plant, KUMHO YEP IV Project
Sep.	Samsung C&T QURAYYAPJ(TSAUDI)(SEC)
Oct.	Samsung Heavy Industries, SEADRILL Drillship #4 CHEVRON
May. 2013	Exclusive vendor registration of SHI INPEX(Ichthys Gas Field Development)Project
May.	GS E&C Azzour WDC Kuwait

2. Corporate overview

# New Challenge & Leap	
Oct. 2013	Azito Phase3
Oct.	Exclusive vendor Registration of HHI POINTTHOMSON, DETAHOUSE, HEBRON Project
Jan. 2014	Exclusive vendor registration of HHI CALIGALI, AASTA, MOHO Project
May.	Registration of approved vendor of KNPC(Kuwait National Petroleum Co.(K.S.C))
Aug.	Exclusive vendor registration of HHI ODOPTU, JANGKRIK, BERADING Project
Mar. 2015	Establishment of 2 nd Factory at Yangsan-city
Sep.	Exclusive vendor registration of Samsung-engineering, Petrofac Clean Fuel Project(KNPC)
Sep.	Exclusive vendor registration of Samsung-engineering, Petrofac Clean Fuel Project(KNPC)
Jan. 2016	Earned a certificate of approval for OHSAS18001 by DAKKS
Feb.	Earned a certificate of approval for NORSOK by DNV-GL(HHI)
Mar.	Exclusive vendor registration of HHI BARONIA Project
Jul.	Earned a certificate of approval for NORSOK by MRC Energy-Piping, STATOIL(TR-2000)
Aug.	Exclusive vendor registration of SHI JOHANSVERDRUP Project(STATOIL)
Nov.	Exclusive vendor Registration of SHI MARTINLINGE Project(TOTAL)
Jan. 2017	Accredited a “Q” class by Shingori 5 & 6 nuclear power plant
Jul. 2018	ITER(International Thermonuclear Experimental Reactor, FRANCE) pjт.
Jan. 2019	Business agreement with Hydro group(United Kingdom)
Apr. 2020	Bapco oil refinery's expansion pjт. by Italy's TechnipFMC
Apr.	Ørsted Greater Changhua OWF PJT.(Wind-power generation)

4) Corporate Organization Chart



Total : 39 persons

6) Work Responsibility

Position / Title	Persons in charge	Scope of responsibility	Depart.
President(CEO)	Won, Il-Bong	Over all responsibility	Top-Management
President	Won, Il-Bong	Survey	QM Committee
Director	Choi, Hong-Seok	Over all management	Management Depart. & R&D
Director	Won, Jong-Hyun	Sales and Overseas affairs	Sales & Overseas Trade Depart.
Manager	Won, Jong-Ha	Quality management	QM Depart.
Manager	Kim, Gyung-Yun	Procurement	Procurement Depart.
Manager	Rhyu, Hyeon-Jin	Manufacturing	Production Depart.

3. Product information

1) General Product Information

HWASUNG has been specializing in fasteners, especially in special, customized ones made of rare and special materials, to be used for plants

■ Application Field

- Gas & Oil plants
- On & Off Shore facilities
- Hydro Thermal / Nuclear / Cogeneration wind power plants
- Refinery plant
- Construction equipment
- Ship Building / Submarine



2) Main products

3. Production information

" Stud bolt & Hex Nut



Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760/S32750
Titanium	Grade 2 / 5 / 7
Copper Alloy	C65100, C63000, C61400

"U-Bolt / Hex Nut / Insolation Pad

Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760 / S32750
Titanium	Grade 2/5/7
Copper Alloy	C65100, C63000, C61400



"Heavy Hex Bolt (Hexagon Bolt) / Hex Nut

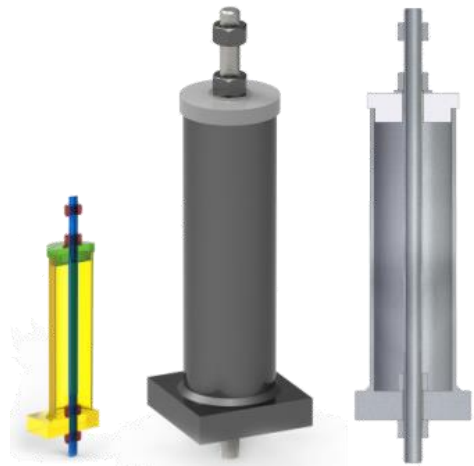


Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760/S32750
Titanium	Grade 2/5/7
Copper Alloy	C65100, C63000, C61400

"Anchor Bolt Set (Foundation Bolt)

- Sleeve Type, Sleeveless Type
- Ks B 1016 (Type L / LA / J / JA)

Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)



3. Production information**"Double end Stud bolt**

Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760/S32750
Titanium	Grade 2/5/7
Copper Alloy	C65100, C63000, C61400

" Tap Stud bolt / Slotted Nut

Alloy Steel	B7, B7M, B16, B5, L7, L7M, L43, 20CrMoVTIB4-10
Carbon Steel	A36, A307, 4.6, SS400, S45C, A325, A490
Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760 / S32750
Titanium	Grade 2/5/7
Copper Alloy	C65100, C63000, C61400

**"High Tension Bolt, Nuts & Washers/
Torque Shear Bolt, Nuts & Washers**

KSB1010, JIS B1186, BS4395	Normal Dia
ASTM F1852, F2280	
KSB2819, EN14399-10	M12-M36
EN14399-4	

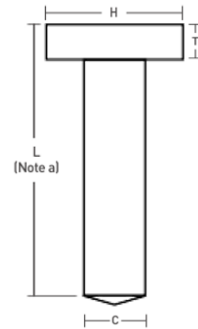
**"Bolt Cap**

- Thermoplastic Rubber Bolt Cap
- For Anti-Corrosion
- Bolt Size : 1" ~ 3.5"



"Welding Stud [With Ferrules]"

3. Production information



Standard Dimensions (inch)

Shank Diameter (C)	Length Tolerance (L)	Head Diameter (H)	Minimum Head Height (T)
3/8	+0.010 -0.010	± 1/16	3/4±1/64
1/2	+0.010 -0.010	± 1/16	1±1/64
5/8	+0.010 -0.010	± 1/16	1-1/4±1/64
3/4	+0.010 -0.010	± 1/16	1-1/4±1/64
7/8	+0.010 -0.010	± 1/16	1-3/8±1/64
1	+0.010 -0.010	± 1/16	1-5/8±1/64

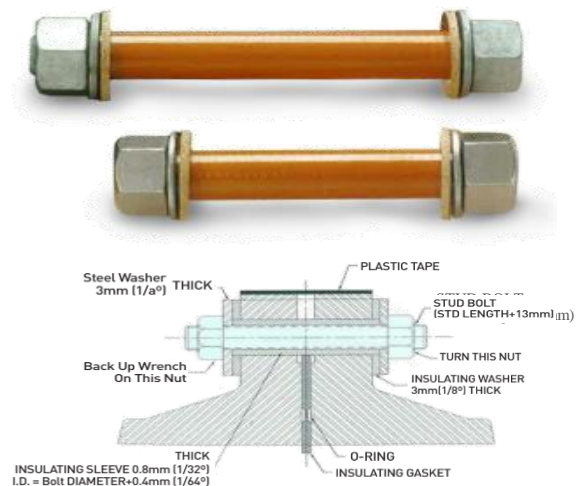
Standard Dimensions (mm)

Shank Diameter (C)	Length Tolerance (L)	Head Diameter (H)	Minimum Head Height (T)
10	+0.25 -0.25	± 1.6	19±0.40
13	+0.25 -0.25	± 1.6	25±0.40
16	+0.25 -0.25	± 1.6	32±0.40
19	+0.40 -0.40	± 1.6	32±0.40
22	+0.40 -0.40	± 1.6	35±0.40
25	+0.40 -0.40	± 1.6	41±0.40

JIS B1198
AWS D1.1
KS B1062

"Insulation Kit"

Stud Bolt	- Allow Steel - Stainless Steel
Nut	- Carbon Steel, Alloy Steel - Stainless Steel
Allow Steel	- F844, F436 Type - A240 Type 316-304
Insulating washer	- Phenolic, PTFE - Epoxy Glass Type
Insulating sleeve	- Phenolic, PTFE - Epoxy Glass Type
Gasket	- Core Material, Seal Material - Physical Properties of Laminate Material

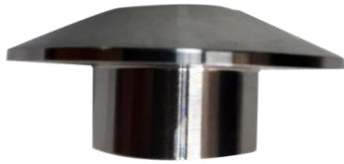


"Plug"

SB564 - N08825	SA182 - F304	SA182 - F316	SA350 - LF2
SA182 - F316L	SA182 - F321	SA182 - F304L	SA105 - N

Above drawing is figure of our own but can supply changes material and / or figure under customer's requirements



3. Production information**"Stick Cover**

Stainless Steel	B8 CL1&2, B8M CL1&2, B8T, B8C, B6, SS317(L)
Nickel Alloys	A453-660, Inconel 625/718, Incoloy 925, C276
Super Duplex	UNS S32760 / S32750

Above drawing is figure of our own but can supply changes material and / or figure under customer's requirements

3) Product Range

(Unit : Inch, mm)

Product items	Range (Dia.)	Remarks
Stud Bolt	M12(1/2") ~ M150(6")	
Headed Bolt(Hex, Square, Octagon)	M6(1/4") ~ M125(5")	
Heating Bolt	M24(1") ~ M120(4 3/4")	
Anchor Bolt	M6(1/4") ~ M150(6")	
Welding Stud	Ø13 ~ Ø25(Auto, Manual)	
Nut & Washer	M6(1/4") ~ M150(6")	
P.T.F.E Coated Bolt	M8(3/8") ~ M150(6")	
Others	M6(1/4") ~ M150(6")	
Bolt and Nut's peripherals	Depends on main sizes	
Accessories*	Depends on main part size	See note
CustomizedItems	Depends on user's spec.	

* Note.(Accessories) : Sleeves, Gaskets, Brackets, Bridges, Rods, Joints, Holders, Pockets, Sockets, etc.

3. Production information

4) Material

Alloy Steel	
ASTM A193	B7, B7M, B16, B5, L7, L7M,
ASTM A194	2H, 2HM, 3, 4, 7, 7M
ASTM A320	L7, L7M, L43
JIS B1051/BS3692	Grade 8.8, 10.9, 12.9
EN10269	20CrMoVTIB4-10

Carbon Steel	
ASTM A325 / ASTM A490 / ASTM A449	
ASTM A307	Grade A / B / C
BS3692	Grade 4.8, 8.8
ASTM	A36
ASTM F1554	Grade 36 / 55
KS	D 3752 / A 3503

Nickel Alloys	
ASTM A453	660 Class A / B / C / D
Incoloy	800, 800HT, A286, 925 [N09925]
Inconel	600, 625, 718
Monel	400, K500
Hastelloy	C276, C22

Stainless Steel	
ASTM A193	B6, B8 Class 1&2, B8M Class 1&2, B8C
ASTM A194	8M, 8MA, 8, 8A, 8T, 8C, 6
ASTM A320	B6, B8 Class 1&2, B8M Class 1&2, B8T Class 1&2, B8C
ISO 3506	A2-70, A2-80, A4-70, A4-80
AISI	SS 304(L), SS 316(L), SS316TI, SS 317(L)

Duplex Steel	
UNS	S32750, S32760 (Condition A & S) S32205 / S31803 / S32550

Other Materials	
Titanium	Grade 2 / 5 / 7

Washer Materials	
ASTM	F436 / F844
KS D 3559	SWRH 62B - 72B
AISI	SS 304(L), SS 316(L), SS316TI, SS 317(L)
UNS	S32750, S32760, S31803

Plating & Galvanizing	
Hot Dip Galvanized	ASTM A153 / A123 / IL-10684
Zinc	ATM B633 (SC1&SC2&SC3)
Cadmium	ASTM B766
Zinc Nickel	ASTM B841
Electroless Nickel	ASTM B733
Zinc Flake	ISO 10683
Phosphate	ASTM F1137 / ISO 11408
Mechanical Galvanized	ASTM A695

Coating	
Xylan	Xylar 2, 1014, 1052, 1070, 1424
Sermagard	1105, 1175, 1280, 1628
Molykote	7409

4. Plant information

1) Plant capacity for each main product

Products	Sizes or limitation	Manufacturing Capability (ton/year)	Remarks
Stud Bolts	All sizes (1/2" ~ 7")	2,500	
Anchor Bolts	All sizes (1/2" ~ 7")	2,000	
Hex Bolts	All sizes (1/2" ~ 7")	180	
Hex Nuts	All sizes (1/2" ~ 7")	1,000	
Washers	All kind and all sizes	50	
Other peripherals	All kinds*	500	Refer to notes bellow
Other Accessories	All kinds	600	Depends on order specifications
Customized Items	All kinds	200	Specially specified by users
Total capacity		7,030	

Notes : Plates, Rods, Screws, Gaskets, Sleeves Brackets, Bridges etc.

2) Manufacturing facilities

Equipment	Capacity	Q'ty	Equipment	Capacity	Q'ty
CNC band saw	400a, 350, 330, 300a	8	Marking M/C	Ø10 ~ Ø100	6
Chamfering M/C	Ø10 ~ Ø100	5	Lathe	Ø19 ~ Ø32	9
Thread rolling M/C	100, 60, 50, 40, 30, 20 tons	7	CNC Lathe	Lynx 200 etc.	2
Hydraulic Bending M/C	50, 150 tons	2	Bench Lathe		1
Hydro Press	350, 50 tons	3	Heat treatment furnace	1ton/time	1
Sand blast M/C	-	2	MillingM/C	-	2
Up right drilling M/C	W400, 2200h	3	Auto. assembling M/C	-	8

5. Quality Management System

1) General Survey on Quality management

HWASUNG has been pouring its efforts on quality matters since its establishment and puts Quality in the epicenter of all production activities so that possible defects during the production can be pre-spotted and removed.

These strict and Strong sticking to quality management matter has enabled HWASUNG to reach the production level that HWASUNG produces quality-even products and meet the customer ' s high requirements domestic and overseas

2) Quality matter is second to nothing

As long as the quality concern, HWASUNG never concede to any defects with the products it is producing. As a result, HWASUNG has gained reputation and earned pretty good number of approvals from the Major EPC companies, such as, Hyundai, **SAMREF(ARAMCO), KNPC, MRC Energy Piping AS** seen in the “ Corporate Chronicles and events ” .

To do so we have been able to meet the global standards of quality and technology required in the field. HWASUNG is producing products along with the internationally accepted standards, such as

◇ ASTM	◇ ASME	◇ ANSI
◇ DIN	◇ JIS	
◇ IFI	◇ KS	

ISO 9001- 2008	ISO 14001
ISO/TS 29001	OHSAS 18001
CE –PED	Achilles JQS
NORSOK M-650 : STATOIL(TR-2000)	

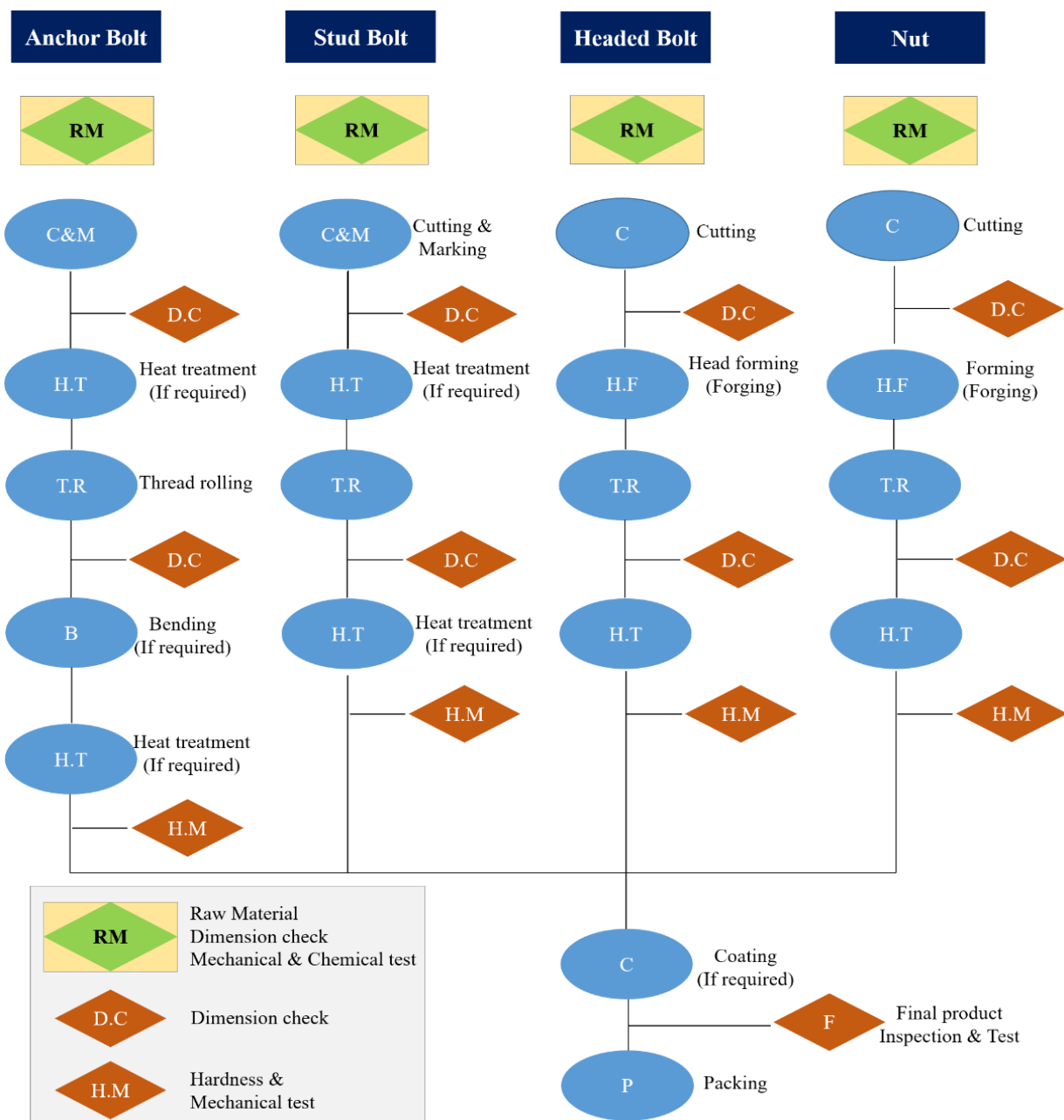
3) Practice of quality inspection on every stage

HWASUNG has been running a quality-driven task force team to improve the quality and pre-empt the possible defects in the production lines.

As a result, it could keep high standards of quality-even products and keep along with major fastener manufactures domestic and overseas.

HWASUNG practices inspection in every step to keep a high standard quality level .it never neglect its commitments to customers by conducting utmost inspection in every on-going process as seen in the bellow chart for instance.

4) Production and Quality Inspection Process Flow



5. Quality Management System**5) Main inspection facilities**

Equipment	Range & Precision	Q'ty	Equipment	Range & Precision	Q'ty
Coating Thickness tester	0 - 1008 μ m	1	Plug gauge	un/metric	15
Portable Hardness tester	-	1	Ring gauge	un/metric	39
Universal test M/C	150 (tons/1000kN)	1	Digimatic calipers	0 - 300(0.01)mm	11
Impact Tester	490.3J	1	Dial calipers	0 - 300(0.02)mm	2
Digital Thermo-meter	0°C ~ \pm 300°C	1	Vernier calipers	0 - 1000(0.05)mm	3
Rupture tester	10 ton	1	Thread micrometer	Per each size	5
Temperature indicator	1000°C	1	Out-dia. micrometer	10 - 125(0.001)mm	1
Handheld XRF	-	1	Out-side micrometer	Per each size	13
Rockwell Hardness tester	100/150 kgf	3	Height gauge	0 - 300(0.01)mm	1
Spark emission Spectrometer	-	1	Dial gauge	25 - 300(0.01)mm	1
Brinell Hardness tester	3,000 kg	1	Depth gauge	0 - 100(0.01)mm	1
Brinell optical Scanning system	-	1	Radius gauge	0 - 5(0.01)mm	1
Torque wrench	100 ~ 850 N.m	1	Others		2



6. Certificate & vendor approval

Part	Certificate	Description	Remark
Oversea	ISO 9001,14001,TS29001 OHSAS 18001	ISO	LR
	NORSOK(M-650)	NORSOK、MDS D60(UNS S32760)	DNV, HYUNDAI
		Equinor(STATOIL) MDS VN605(UNS32760)	MRC Energy Piping
	JQS	Joint Qualification System for suppliers to the Industry in Norway and Denmark	Achilles Joint
	CE/PED	Pressure vessel part	LR
	SAMREF Vendor approval	Saudi Aramco Mobile Refinery	
	KNPC Vendor approval	Kuwait National Petroleum Company	
	TR2000	Vendor approval for S32760 bolt & nut of Equinor(STAT OIL)	Equinor(STATOIL)
	MRC-EP	Agency contract	MRC Energy Piping
Domestic	KEPIC	Quality system for nuclear power	Korea Electrical Contractors Association
	KEPCO	Certificate of one-KEPCO export business group	Korea Electric Power Corporation(KEPCO)
	HYUNDAI, DAEWOO, SAMSUNG, Korea Hydro & Nuclear Power Co. Ltd.	Vendor approval	

7. Sales reference

1) Overview on sales reference

HWASUNG has provided our products to major EPC companies in domestic and overseas, such as to Samsung, Exxon Mobil, **Aramco(Samref)** , **KNPC** as bellow references, and many other major oil and gas plant companies world widely.

These abundant experiences enabled us HWASUNG to earn high reputation with our dedicated vendors and valuable customers.

Based on the cooperation with EPC companies as a supplier, we HWASUNG believe that HWASUNG can play a phenomenal role in completing the projects that your company is involved in.

2) Major customers

Domestic										
										

REFERENCE LIST



(주) 화성금속

HWASUNG FASTENERS Co., Ltd.

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
Ørsted Greater Changhua OWF PJT.(Wind-power generation)	8.8, A4-80, A4-70	2020	Wind power	- Sing Da Marine Structure Corporation - HYUNDAI steel	Ørsted
HMC PP4 PJT.	B7/B8	2020	Petrochemical	GS E&C	HMC Polymers
Boryeong LNG Terminal PJT. (Phase-II) 2-2	B7, L7, B8, 8M	2019~2020	LNG Terminal	GS E&C	Boryeong LNG Terminal
SK UPP PJT.	B7,B8	2020	Refinery	DY P&F	SK E&C
ALGERIA RAS DJINET CCPP PJT.	B7, B8M, B8	2019~2020	Power plant	DAEWOO E&C	S.P.E (Societe Algerienne de Production d'Electricite)
MELAKA Refinery Diesel EURO 5 PJT.	B7, B7M, B16	2018~2020		HYUNDAI Eng.	MALAYSIAN Refining Company
SHINGORI UNIT 5,6 PJT.	B7, A36	2019	Nuclear power plant	SAMSUNG C & T	KHNP
KLAM PJT.	B7, A108	2019	Construction	HYUNDAI E&C	KNPC
CIREBON 2 1,000MW CFPP PJT.	B7, B16, B8M	2019	Power plant	HYUNDAI E&C	CIREBON ENERGI PARASARANA
Sabine Pass Liquefaction PJT. Stage 4	B7, L7, B8M, B8	2019	LNG Terminal	International Piping Products	BECHTEL
King's Quay FPS PJT.	B7, A36	2019	FPSO	HYUNDA Heavy industries	LLOG
Nigeria Indorama Fertilizer II PJT.	S10T	2019	Refinery	DAEWOO E&C	IEFCL(Indorama Eleme Fertilizer & Chemicals Limited)
UMM AI Houli RO EXPANSION PJT.	B8M	2019	Power plant	SAMSUNG C & T	UMM AI Houli Power
RIAU GFPP 275MW IPP PJT.	B7 ,B8M	2019	Power plant	LOTTE E & C	PT MEDCO RATCH POWER RIAU
410,000 MTY Mpe Plant	B7, B8	2019	Power plant	DY P&F	DAELIM Industrial
410,000 MTY Mpe Plant	B, B8	2019	Power plant	DAELIM Industrial	DAELIM Industrial
Jawa Satu Power 1 PJT.	B7, 2H, F436	2019	Power plant	AGRU KOREA Industry Co., Ltd.	SAMSUNG C & T

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
MUSAI PJT.	B7, 2H, F436	2019	Power plant	AGRU KOREA Industry Co., Ltd.	Qatar Engineering Material Solutions WLL
BORYEN LNG Terminal PJT. 2-2	B7, 2H, H DG	2019	Power plant	GS E&C	KOGAS
CORAL FLNG PJT.	S32760, L7, 660	2019	FPSO	SAMSUNG Heavy industries	ENI
Mad Dog 2 FPU PJT.	S32760	2019	FPSO	SAMSUNG Heavy industries	BP
Sabine Pass Liquefaction PJT. Stage 3	B7, L7, B8M, B8	2018	LNG Terminal	International Piping Products	BECHTEL
SHINGORI UNIT 5,6 PJT.	B7,A36	2018	Nuclear power plant	SAMSUNG C & T	KHNP
DW173,400 CBM LNG FSRU PJT. E.ON-MOL180000 LNG PJT.	B8M	2018	LNG Carrier	DSME	SHELL
Kuwait al-zour LNG PJT.	B7, 2H, F436	2018	Oil & Gas	AGRU KOREA Industry Co., Ltd.	KIPIC
BNPP Nuclear Power Plant PJT	307A	2017	Nuclear power plant	HYUNDAI C&T	KEPCO
Johan Sverdrup PJT.	UNS 32760,625	2017	Oil & Gas	SAMSUNG Heavy industries	STATOIL
SHINHANUL Nuclear 5,6 unit PJT.	A36, B7, B8M	2017	Nuclear power plant	SAMSUNG C & T HANWA C & T	KEPCO
HMD South Satellite Revamping PJT.	307B, B7, B8	2017	Oil & Gas	NIPPON Steel & SUMIKIN BUSAN KOREA Co., Ltd.	JGC CORP
CLEAN FUEL PJT./MAB1	T41, 660C, B7, B7M	2017	Oil & Gas	Petrofac-SAMSUNG-CB&I CFP Joint venture	KNPC
Riyad New City Freeders (RNCP) PJT	B7, L7	2017	Construction	SEVEN PLANT TRADING EST.	SWCC
Martin Linge PJT.	UNS 32760, 625	2017	Oil & Gas	SAMSUNG Heavy industries	TOTAL

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
Johan-Sverdrup PJT	UNS32760, 625	2016	Oil & Gas	SAMSUNG Heavy industries	STATOIL
HANARO power plant PJT.	B7, 2H	2016	Nuclear power plant	DONGAH E&C	
Thai binh thermal power plant unit-1	B7, B16, 307B, B8	2016	Power plant	RISE BM	Fuji Electric Co., Ltd.
Co2 압축액화설비 PJT.	B7, L7, B8	2016	Oil & Gas	POSCO Eng.	HANKOOK Special Gased Co., Ltd.
BISKRA gas turbine power plant PJT.	A36	2016	Power plant	HANWHA E&C	Societe Algerienne de Production d'electricite(spe)
Kirikkale independent power plant PJT.	B16, B7, B8M	2016	Power plant	SAMSUNG C&T	ACWA GUC
Clean fuel PJT./MAB1	T41, 660C, B7, B7M	2015~16	Oil & Gas	PETROFAC-SAMSUNG-CB&I joint venture	KNPC
Cather FPSO PJT.	UNS32760	2015	Oil & Gas (FPSO)	IHI	Cairn Energy
Ever green	B8M	2015	Ship building	IMABARI Ship building	Shoei-Kisen kaisha
EGINA PJT.	B7, 660A	2015	Oil & Gas (FPSO)	SAMSUNG Heavy industries(NOV)	TOTAL
THERMA VISAYAS Energy PJT. 150MW×2units	B7	2015	Oil & Gas	HYUNDAI Eng. (AGRU)	Therma visayas Inc.
석문집단에너지건설사업	A307-C	2015	Construction	KOLON En-Solution Co., Ltd.	POSCO E&C
ODOPTU STAGE 2 PJT.	L7	2015	Oil & Gas	HYUNDAI Heavy industries	EXXON NEFTEGAS Ltd.(ENL)
ARP Star PJT.	A325M	2015	Construction	JUAN Tech.	한양 인더스트리
Sadara PJT.	B7	2015	Oil & Gas	Sadara Chemical Company	SAUDI ARAMCO & Dow Chemical
Bergading CPP PJT.	B7	2015	Oil & Gas	HYUNDAI Heavy industries	HESS Exploration & Production Malaysia B.V.
Boryeon LNG Terminal	B8M	2015	Oil & Gas	Goodwin	Boryeon LNG Terminal

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
RPLC Deep Conversion PJT	B7	2015	Oil & Gas	HYUNDAI E&C	Petroleo de Venezuela, S.A (PDVSA)
Jangkrik Complex PJT.	C71000	2015	FPSO	HYUNDAI Heavy industries	Eni Muara Barkau B.V.
Indorama Fertilizer plant PJT.	A307-A	2014	Petro chemical	DAEWOO E&C	SAUDI ARAMCO
SM#1 Modernization PJT.	SB408-800H	2014	Construction	TOYO Eng.	SAMSUNG, TOTAL, PETROCHEMICALS
IRAQ AL FAW BREAK WATER PJT	A325	2014	Construction	DAEWOO E&C	The General company for ports of IRAQ (이라크교통부산하항만청)
CFP Refinery	B7, B16, B8M	2014	Oil & Gas	SAMSUNG Eng., PETROFAC	KNPC
Ras-Djinet 1,131.1MW Combined cycle power plant PJT	B7	2014	Power plant	DAEWOO E&C	SPE
ATYRAU Refinery	B7, B8T	2014	Reactors Pressure Vessles	ATYRAU Refinery	Hitachi Zosen Corporation
Dow DMC Polyol PJT.	B7	2014	Oil & Gas	POSCO Eng.	Rayong Terminal Co., Ltd.
Yep-V PJT.	B7	2014	Petro Chemical	POSCO Eng.	KUMHO POLYCHEM
Aasta Hansteen PJT. (Platform)	B7, L7, Ti. gr5	2014	Oil & Gas	HYUNDAI Heavy industries	STATOIL
MOHO NORD (TLP/FPU) PJT.	660, B7	2014	Oil & Gas	HYUNDAI Heavy industries	TOTAL
CARIGALI PJT.	B8MCL2, B7, L7	2014	Oil & Gas	HYUNDAI Heavy industries	B.C.P
HEBRON PJT.	B7M, L7M, 32760	2014	Oil & Gas	HYUNDAI Heavy industries	EXXON MOBIL
E-KANDYM PJT.	B7, B8	2014	Oil & Gas	HYUNDAI Eng.	LUOC(Luk oil)
KUMHO YEP IV PJT.	B7, B8	2014	Construction	POSCO Eng.	KUMHO POLYCHEM
FAP PJT.	B7M, B7	2014	Oil & Gas	HYUNDAI Heavy industries	RAS Gas, QTAR Gas
Azito Phase 3	B8	2014	Construction	HYUNDAI E&C	Azito Energy
DELTA HOUSE PJT.	B7, L7, B8, B8M	2014	Oil & Gas	HYUNDAI Heavy industries	LLOG

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
POINT THOMSON PJT.	L7	2014	Oil & Gas	HYUNDAI Heavy industries	EXXON MOBIL
ZWITINA Combined cycle ADD-ON PJT.	B7	2013	Power plant	DAEWOO E&C	General electric company of LIBYA
BASF / ULTRASON-1 PJT.	SA307-B	2013	Construction	GS E&C	BASF
RABICH-2 CP-3, 4PACKAGE PJT.	SA307-B	2013	Oil & Gas	GS E&C	ARAMCO Dverseas Company B.V & Sumitomo chemical Co., Ltd.
울산대교 (Ulsan Bridge) PJT.	JISB1051 Gr.10.9	2013	Construction	HUNDAI Steel	HUNDAI Steel
남극제2기지 (Southpole station#2) PJT.	KSD3752	2013	Construction	HUNDAI Steel	HUNDAI Steel
OLKA-2	F1554 Gr.55	2013	Construction	HUNDAI Steel	HYUNDAI Eng.
Tripoli West 4×350MW Power plant PJT.	F1554 Gr.55	2013	Power plant	HUNDAI Steel	GECOL
TAEAN IGCC Power plant PJT.	B7, L7, B8, B8M	2013	Power plant	GS E&C	KEPCO
BAPP Ashuganj 225MW Combined Cycle Power plant	B8, B7	2013	Power plant	HYUNDAI Eng.	Ashuganj Power Station Co
Ichthys Gas Field Development PJT.	A453 Gr.660D	2013	Oil & Gas	SAMSUNG Heavy industries	TOTAL
CG Aceto PJT.	B7	2013	Power plant	POSCO Eng.	Tongsuh Petrochemical
BAPP Ashuganj 225MW Combined Cycle Power plant	B8, B7	2013	Power plant	HYUNDAI Eng.	Ashuganj Power Station Co.
Dangjin Thermal Power Plant 9 &10 Unit Boiler PJT.	B8MCL2, B7, L7	2013	Power plant	DAELIM Industrial & HITACHI	Tongsuh Petrochemical
Jorf Lasfar Fertilizer Plant	B7, B8M C2	2013	Power plant	DAEWOO E&C	OCP
Azzour WDC II PTJ.	B7, B8M CL2	2013	Power plant	GS E&C	MEW(Ministry of Electricity and Water)
Ulchin NPP 3&4 SGR PJT.	B7	2013	Nuclear Power plant	DAELIM Industrial	KEPCO
KUMHO YEP IV PJT.	B7, 2H	2012	Petrochemical	DAELIM Industrial	KUMHO POLYCHEM
ARZEW Refinery Rehabilitation and Adaptation	B16, B7	2012	Oil & Gas	HYUNDAI Eng.	TAKREER

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
DSO PJT.	B7, L7, B8, B8M	2012	Oil & Gas	HYUNDAI Heavy industries	SHELL
CLAIR RIDGE PJT.	S32760, 660D, L7M	2012	Oil & Gas	HYUNDAI Heavy industries	BP
QURAYYA(QIPP) PJT.	B7, L7, B8, B8M	2012	Power plant	SAMSUNG C&T	SEC
POCHEON Power Plant	B7, B8, B8M	2012	Power plant	DAELIM Industrial	KEPCO
Gunjang GE3 Gogeneration Plant(CFBC Boiler)	SS400	2012	Oil & Gas	HYUNDAI Heavy industries	SK E&C
Q204 PJT.	Hiduron191, S32760	2012	FPSO	HYUNDAI Heavy industries	BP
SEADRILL Drill ship #4	B7, B8, B8M	2012	Oil & Gas	SAMSUNG Heavy industries	CHEVRON
SAMCHEOK Green Power plant	GR.50	2012	Power plant	HYUNDAI E&C, GS E&C, DAEWOO E&C	KEPCO
OLKARIA Geothermal Power plant PJT.	B7, L7, B7M, L7M	2012	Power plant	HYUNDAI Eng.	PIDG
Q1	B7, L7, B7M, L7M	2012	Petrochemical	GS E&C	BASF
JG Summit Cracker PJT.	B7, L7, B7M, L7M	2012	Petrochemical	DAELIM Industrial	JG Summit
MONG DUONG Terminal Power plant	B8M, B7	2012	Oil & Gas	KHPT	HYUNDAI E&C
MOROCCO JL Power plant	B7, 2H	2012	Power plant	DAEWOO E&C	Jorf Lasfar Energy Company
LAFFAN Refinery Diesel Hydrotreater(DHT)	307B	2012	Oil & Gas	SAMSUNG Eng.	QTAR Gas
MUSANDAM Gas plant PJT.	B7, L7, B7M, L7M	2012	Oil & Gas	HYUNDAI Eng.	OMAN Oil Company Exploration & Production
PETRO RPM-2 FCC	SS400	2012	Oil & Gas	HYUNDAI Heavy industries	PETRON
WHEATSTONE PJT.	B7M, 2HM	2012	Oil & Gas	APS	CHEVRON
GMR 2×400 MW CPP PJT.	B7, L7, B7M, L7M	2012	Power plant	SAMSUNG C&T	GMR Energy Pte Lte
ALGERIA OMAN Fertilizer PJT.	B7, 2H, A325	2012	Oil & Gas	DAEWOO E&C	

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
UAE S3 IPP PJT.	B8M, B7	2012	Power plant	DAEWOO E&C	UAE
STENA Drill Ship #4	B7, B8, B8M	2012	Oil & Gas	Samsung Heavy industries	STENA
BARZAN PJT.	B7, L7, B7M, L7M	2012	FPSO	HYUNDAI Heavy industries	EXXON MOBIL
BNPP Nuclear power plant PJT.	B7, A36	2012	Nuclear power plant	HYUNDAI E&C	KNHP
SHINULCHIN Nuclear power plant PJT.	B7, A36	2012	Nuclear power plant	HYUNDAI E&C	KNHP
Shuweiha S3 IPP	B7, L7, B7M, L7M	2012	Power plant	SIEMENS AG & Daewoo E&C	SAPCO(Shuweiha Asia Power Company)
TATWEER New Well Manifold Facilities PJT.	B7, L7, B7M, L7M	2012	Oil & Gas	Aju Eng.	JGC GULF
Thi vai LNG Refrigerated Storage PJT.	B7, L7	2012	Petrochemical	Daewoo E&C	Petrovietnam gas coporation
PG Tank and Distribution PJT.	B7,L7, B7M, L7M	2012	Petrochemical	POSCO Eng.	Rayong Terminal Co., Ltd.
BOROUGE 3 U&O PJT.	A307-B	2011	Petrochemical	HYUNDAI Eng.	ABUDABI Polymers Co., Ltd.
YEOSU Oil tank terminal PJT.	B7, 2H	2011	Oil&Gas	HYUNDAI E&C	
Arzenw GNL 3Z PJT.	B7, B8, B8M	2011	Petrochemical	DaewooE&C	OMAN Oil company Exploration & Production
DONGGI PJT.	B7, B8, B8M	2011	Oil & Gas	TOYO KANETSU. K. K.	TOYO KANETSU. K. K.
OFON PJT.	B7, L7, B7M, L7M, 660	2011	FPSO	HYUNDAI Heavy industries	TOTAL
SAMAPCO CA/EDC PJT.	B7, L7, B7M, L7M	2011	Petrochemical	DAELIM Industrial	Sahara & Ma'aden Petrochemical company
PTT SPURLINE PJT.	B7, 2H	2011	Oil & Gas	HYUNDAI Heavy industries	PTT PLC
세계여수박람회(BIG-O)	B8M, 8M	2011	E&C	HYUNDAI E&C	
DAESAN MMA 2D-PJT.(YEOSU)	B7, 2H	2011	Petrochemical	HYUNDAI Eng.	DAESAN MMA Coperation
Group III Base Oil Production Facilities PJT.(UONE PJT.)	B7, 2H	2011	Oil & Gas	HYUNDAI Eng.	TAKREER
Barka 3 Independent Power plant	B7, 2H	2011	Power plant	GS E&C	Al Suwadi Power Company

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
BAHRAIN SULB STEEL MILL PJT.	B7, 2H	2011	Steel plant	SAMSUNG Eng.	UNITED Steel company
KOC PIPELINE PJT.	B7, 2H	2011	Oil & Gas	HYUNDAI E&C	KOC
ESCAVOS Gas To Liquid PJT.	B7, 2H	2011	Oil & Gas	DAEWOO E&C	
GOLIAT PJT.	L7, S32750	2011	FPSO	HYUNDAI Heavy industries	ENI
GOLGON PJT. (Barrow Island LNG Plant)	B7, L7, B7M, L7M	2011	FPSO	HYUNDAI Heavy industries	CHEVRON
IGD-DAS PJT.	B7M, L7M, N08020	2011	FPSO	HYUNDAI Heavy industries	ADMA-OPCO
DAEWOO SHWE PJT.	B7, 2H, A325	2011	FPSO	HYUNDAI Heavy industries	DAEWOO International PTT
RIYADH PP11 PJT.	B7, 2H, B8, 8, B16, 3	2011	Oil & Gas	HYUNDAI Heavy industries	SAUDI ARAMCO
2×60 MW Merak CFPP PJT.	B7, 2H, A325	2011	Power plant	POSCO Eng.	PT. Merak Energi Indonesia
STC-EO PJT.	B7, 2H	2011	Steel plant	SAMSUNG C&T	
QUDUS GAS TURBINES Power plant PJT.	B7, B8, B8M	2011	Power plant	HYUNDAI Eng.	Ministry of Electricity
ULJIN Nuclear power plant	B7, L7, B7M, L7M	2011	Nuclear power plant	DAELIM Industrial	KNHP
Shih Nihayda Depletion Compression Phase 1 PJT.	660	2011	Petrochemical	GS E&C	Petroleum Development of Oman
GAZFLOT S/R #2P	B7, 2H	2011	Oil & Gas	SAMSUNG Heavy industries	
PDC Drill ship #2 PJT.	B7	2011	Oil & Gas	SAMSUNG Heavy industries	
BASF COAL-BASED Steam Boiler PJT.	B7, 2H, F10T	2010	Petrochemical	HYUNDAI Heavy industries	BASF
GULF PJT.	B7, 2H	2010	Power plant	HYUNDAI E&C	
RUWIS Refinery Expansion PJT	B7, 2H	2010	Oil & Gas	DAEWOO E&C	TAKREER
BONGKOT Field Development PJT.	660A, B8M-CL2(1424)	2010	FPSO	HYUNDAI Heavy industries	PTT Exploration and Production
PVTEX PET PLANT PJT.	B7, 2H	2010	Petrochemical	HYUNDAI Eng.	Petro Vietnam Company

REFERENCE LIST

Name of Project	Material	Year	Application	Contractor	Ultimate client
SABIYA CCGT Power plant	B7, 2H, B8, 8, B16, 3	2010	Power plant	HYUNDAI Heavy industries	H.H.I, USA GE Energy
TURKMENISTAN (T-ONE) PJT.	B7, 2H	2010	Oil & Gas	HYUNDA Eng.	GS E&C
Q ONE PJT.	A307-B	2009	Power plant	HYUNDAI E&C	
Samref ARAMCO Mobil PJT.	L7, B7, 660, 2H	2009	Oil & Gas	ARAMCO	SAUDI ARAMCO
UMM SHAIK Gas Injection Facilities PJT.	L7M, 7M	2009	FPSO	HYUNDAI Heavy industries	ADMA-OPCO
OVENG / OKUME	B7 ,B8, B8M	2006	Oil & Gas	SAMSUNG Heavy industries	MODEC
ENFIELD FPSO PJT.	UNS32760	2009	FPSO	SAMSUNG Heavy industries	WOODSIDE
KOC Crude Oil Export Facilities PJT	B7, 2H	2008	Oil & Gas	HYUNDAI Heavy industries	KOC
USAN FPSO	B7, 2H	2008	FPSO	HYUNDAI Heavy industries	TOTAL
NR2 PJT.	S32750, B7, 2H, L7, 7	2008	FPSO	HYUNDAI Heavy industries	WOODSIDE
AL DUR IWPP PJT.	B7, 2H	2008	PowerPlant	HYUNDAI Heavy industries	AL DUR Power and Water Co.
EXMAR LNG Hull PJT.	L7, B7, 660, 2H	2008	Oil & Gas	SAMSUNG Heavy industries	EXMAR
VASAI Platform PJT.	L7, B7, 660, 2H	2008	Oil & Gas	SAMSUNG Heavy industries	ONGC
TACOMA Bridge PJT.	B7, B8, B8M	2008	Structure	SAMSUNG Heavy industries	SAMSUNG Heavy industries
SKARV FPSO PJT.	B7 ,B8, B8M	2007	FPSO	SAMSUNG Heavy industries	BP
BLACK TIP PJT.	B7, 2H, L7, 7, S32750	2007	Oi l & Gas	APS	WOODSIDE
MOHO BILONDO PJT.	B7, 2H	2007	Oil & Gas	HYUNDAI Heavy industries	TOTAL
AKPO Field Development PJT. FPSO	B7, B8M-CL2, 660A	2007	Oi l & Gas	HYUNDAI Heavy industries	TOTAL
YADANA MCP Facility PJT.	660A, B8M-CL2, B7	2007	Oil & Gas	HYUNDAI Heavy industries	TOTAL
DOLPHIN ABSORBER PJT.	B7, 2H	2007	Oi l & Gas	HYUNDAI Heavy industries	QATAR-UAE-OMAN

