





# Accompaning safety

It is a luxury door which is made by sophisticated design and continuous technology development. High-end materials selected on a strict basis. A door made considering space structure and environment. We promise the best quality because we are dreaming the best.

# Accompaning safety

Established in 1988, Keumgang Firedoor Co., Ltd. are leading the market on a basis of ultimate customer's trust.

We develop steady new technology and supply high quality products.

Global fire protection for customer safety.

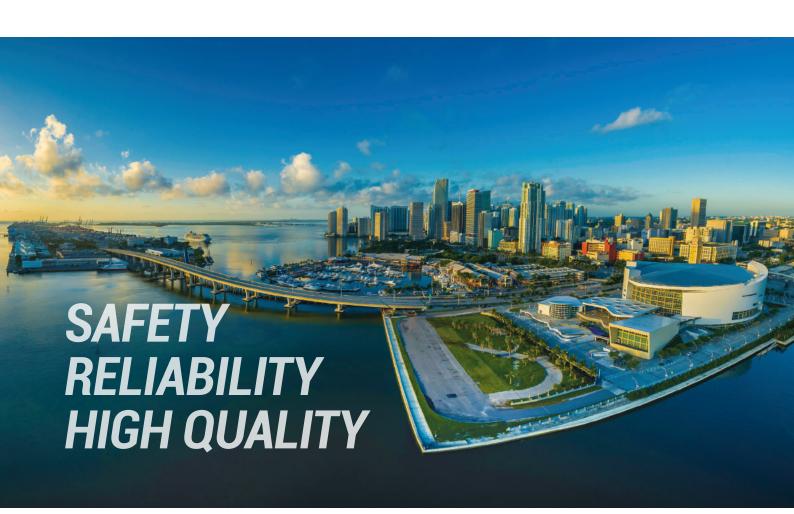
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# Keumgang Firedoor Co., Ltd. is the best partner for everyone.

Keumgang is a professional manufacturer of fire doors for 30 years. We want to be your trust partner on the global market.





We will protect your precious lives and property from fire with durable and safe fire doors.

Keumgang Firedoor Co., Ltd., which has been leading the market based on customer's infinite trust since it was founded in 1988 as a company specializing in fire doors, are devoted to supplying and constructing strong fire doors that are sophisticated and distinctive with steady new technology development.



Keumgang Firedoor Co., Ltd. has the following three strengths differentiated from companies.

First, Korea's largest fire door factory and production facility.

We have the ability to produce fire doors of more than 24,000 sets per month and provide high quality and excellent products by expanding manufacturing facilities such as full automatic sheet metal processing machine (Salvagnini) to the 1st, 2nd and 3rd plants and perfectly building the most optimal automatic production system in Korea and also have a small quantity batch production system at the same time.

As a technology-intensive company that has been recognized for its technology at home and abroad with KS certification, ISO 9001 certification, UL certification, etc., we are confident that we have a competitive edge for improving product quality.

Second, design team and technology development team operated separately to develop differentiated products. We are striving to create new value with innovative ideas in terms of technology innovation and product differentiation strategy to meet changing customer's needs to ultimately improve customer's quality of life.

Third, domestic largest sales network (sales office, agency) A/S network.

We are promoting customer convenience by providing a product purchase route that enables customers to purchase products easily through various sales channels. We also satisfy customers with prompt A/S processing based on reliability.

Thanks to your support, Keumgang Firedoor Co., Ltd. has been attracting attention as the fastest growing maker in the industry since its foundation.

Believing that this is the fruit of the enthusiastic encouragement of our customers who always use our products and inspire encouragement and development, we will do our best to meet your convenience and customer's needs.

Thank you.

CEO Eun-Ki Baek

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# Mission of KEUMGANG

A professional top quality global eco-friendly fire door company that increases efficiency and protects precious lives and property

# Vision of KEUMGANG



# **Business** Policy



### **Customer Satisfaction Management**

With customer happiness as our top priority, we are striving to produce the highest quality products with passion and continuous technical innovation to provide value beyond our needs.



### **Environment-friendly Management**

Global warming prevention by climate change is a core value common to all mankind, and we are to become a global eco-leading company through development and provision of building materials that maximize environmentally-friendly energy efficiency.



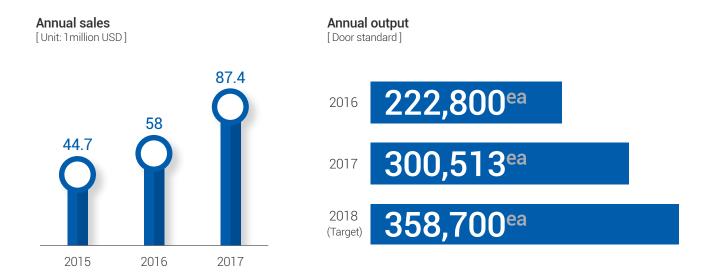
### **Human-oriented Management**

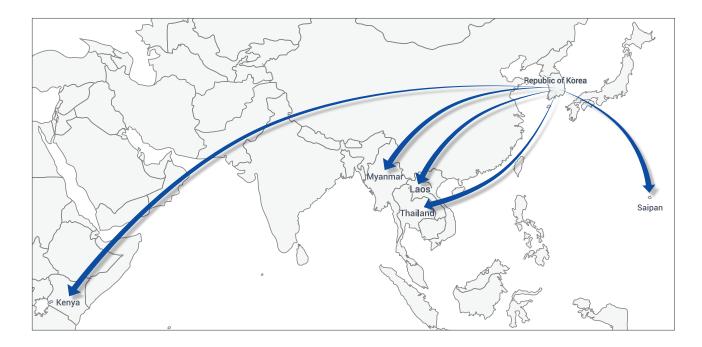
With the belief that corporate value grows and develops through people, not capital and materials, we strive to create a happy company for all employees and hope that the happiness management of the Keumgang will lead to customer happiness.



1990s	1988. 04 1990. 07 1995. 03 1995. 11 1999. 02 1999. 05 1999. 11	Established Keumgang Company Changed the company name to Keumgang Firedoor and relocated the factory Moved to Pyeongtaek factory to head office Acquired professional construction license (window, hardware) Completed Pyeongtaek 2nd Factory Acquired ISO 9002 certification (Hwa Yeon Certification Center) Acquired KS mark certification - KS F 3109 (Korean Standards Association)
2000s	2000. 03 2000. 06 2001. 09 2002. 06 2002. 07 2002. 08 2003. 10 2004. 09	Completed automation line installation (Monthly production 15,000 sets) Registered as a partner company in Samsung C&T's housing division Registered as a qualified company in the Korea Housing Corporation Installed AMADA NCT Punching and Unmanned Automatic Transfer Established the subsidiary company Keumgang Construction Industry Co., Ltd. Added 2nd production line, the largest production in Korea in a single factory CEO won the Gyeonggi-do exemplary businessman award Selected as promising medium-sized company in Gyeonggi-do Added KS marking authentication type, grade (fire steel door) Installed automatic metal plate multi-processing machine (Salvagnini)
2005s	2005. 01 2005. 07 2005. 11 2006. 01 2006. 02 2006. 04 2007. 03 2007. 10 2008. 03 2008. 08	Completed the first private enterprise development research institute in the industry Changed the subsidiary name to Keumgang EMC Co., Ltd.  Completed 1,2 Factory site 6,000 pyeong floor space 1,700 pyeong Pyeongtaek factory 1st Factory remodeling  Replaced facilities and completed expansion (monthly production capacity 24,000 sets)  Determined to be conforming at the balcony fireproof glass window fireproof test  Determined to be conforming at the household front door condensation prevention performance test  Selected as a management innovation certification company  (Small and Medium Business Administration)  Joined Korea Metal Cooperative Association  Registered as a venture company (Korea Technology Finance Corporation)  Certified as INNO-BIZ (Small and Medium Business Administration)  Recognized as a company affiliated research institute  (Korea Industrial Technology Association)
2010s	2010. 02 2010. 07 2010. 08 2011. 09 2011. 11 2012. 11 2013. 01 2014. 12	Obtained high efficiency energy equipment certification (Korea Energy Management Corporation) Obtained Underwriters Laboratories (UL) Mark Certification Extension work of the 1st factory office and expansion of the 2nd factory facilities Selected as a promising small business (Governor of Gyeonggi Province) Selected as CLEAN business place Selected as a designated company for military service exemption Energy saving citation (Minister of Knowledge Economy) Performed Gyeonggi-do Technology Development Project (Company open type) / Gyeonggi Institute of Science & Technology Promotion Started the construction of the 3rd factory (Site 19,000m² in Hwaseong City, Gyeonggi-do) Business convention for training customized manpower in local industry
2015s	2015. 01 2015. 06 2016. 01 2016. 10 2017. 01 2017. 07 2018. 01	Selected as a small hidden champion (Local leading company / Ministry of Employment and Labor) Began production of silk-screen printed steel sheet at the 3rd Factory Acquired Building Performance Certificate (Architectural Institute of Korea) Developed and released Keumgang automatic door 200,000 times durability test for Keumgang automatic door (KCL certification) Changed the company name to Keumgang Firedoor Co., Ltd. The commendation of ministry of Employment and Labor (Pyeongtaek branch office)

The Keumgang Firedoor Co., Ltd., which has been leading the fire door market with safety of effort and technological innovation, continues by grow steadily.





### Korea's largest distribution network and overseas agency

#### Global agency :

Kenya (Ace C & Air), Myanmar (South Korea), Laos (SNK), Thailand (K deko), Saipan (Tobia Corporation)

#### ■ Domestic branch:

Bangbae, Shinpung, Sangil, Sinwol, Gangbuk, Seoboo, Dong-Seoul, Bucheon, Suwon, Ansan, Pyeongtaek, Gangneung, Wonju, Incheon, Cheongju, Cheonan, Pohang, Daejeon, Daegu, Gwangju, Changwon, Busan







#### MAIN PERFORMANCE

**01 Hanyang Suzain Wise City**Sejong City, 2014
3-3 New construction of housing complex M4 block
Client: HanYang Co., Ltd.
Households: 1,397

**02 Jasmine Palace Hotel** Yangon, Myanmar, 2016

**03 Highville Astana** Astana, Kazakhstan, 2014



### 04 Haeundae LCT The Sharp

Haeundae, Busan, 2017 Complex development project (1) Client : Posco Co., Ltd. Households : 876

#### 05 Pacific Palm Resort

Chalan Kiya Drive, Saipan, 2017

#### 06 Central IPARK Ilsan

Goyang-si, Gyeonggi-do, 2016 Fire door

Client : Hyundai Development Company Households : 1,802











### 07 Jungheung S-Class

Suncheon, Jeollanam-do, 2013 Sindae District B2-2BL

Client : Jungheung Construction Co., Ltd.

Households: 1,842

**08 Songpa Helio City** Seoul, 2017

Fire door in reconstruction

of Garak Apt

Client: Hyundai Development

Company

Households: 2,704

# **09 Mapo Raemian Prugio** Seoul, 2013

Ahyun 3 District Redevelopment

Apartment Construction Client : Samsung C&T Households: 1,884







### 10 Kintex One City

Goyang, Gyeonggi-do, 2017 Functional door Client: GS E&C

Households: 2,208

### 11 MCO Town Eastern Bay

Ulsan, 2014

Steel window in the new construction project of Hwajeongdong Apt Client: Hyundai Engineering Co., Ltd.

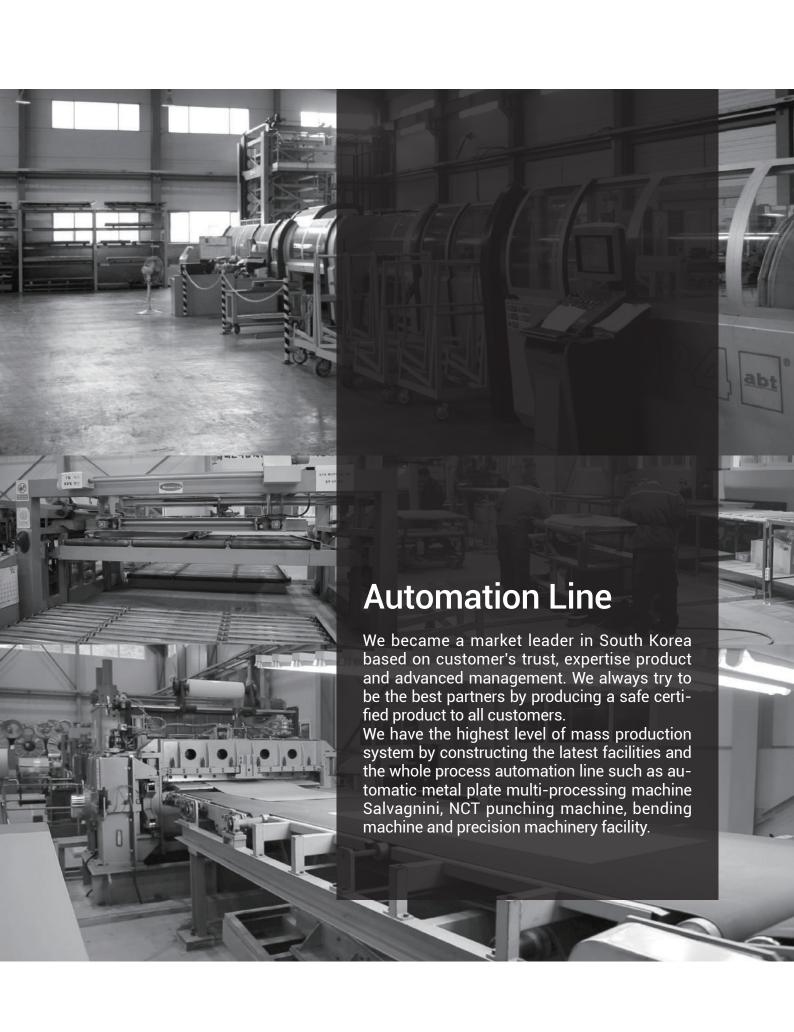
Households: 1,897

#### 12 Acro Riverview

Seoul, 2015 Shinbanpo 1st Apartment reconstruction and renovation project fire door construction Client: Daelim Industrial Co., Ltd.

Households: 2,122





### **EURO CHAMP DOOR**

Keumgang Firedoor Co., Ltd. produces multifunctional high quality door which has soundproofing, crime prevention, insulation function and it widely used in Europe.













# Improved soundproof security function

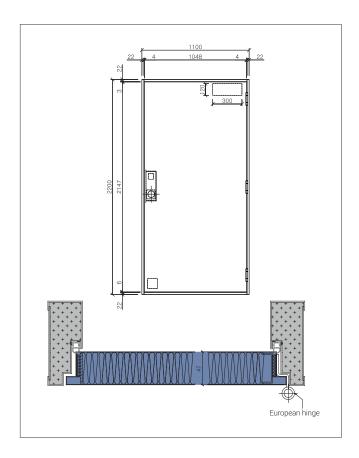
Double soundproofing structure, which is three-side (Hinge side, Lock side, Top side) flat windshield method and special soundproofing design for quiet and comfortable interior provide excellent sound insulation performance. 12mm thick wing structure prevents the lock function from being damaged, providing excellent security function.

# Improved insulation condensation function

Insulation core filling makes energy saving and comfortable indoor environment and prevents mold and bacteria caused by moisture by preventing water droplet formation due to internal temperature difference.

### **Design Improvements**

The appearance of the existing fire door was not good because the rock set windshield is uneven, but the Euro Champ door is a high-quality door with a clean appearance without a bent part because the three-sided windscreen structure becomes a flat type and is inserted into the door frame.



#### General fire door





# **INTRODUCTION OF ITEM**



KDE 761R

▲ E

1000 X 2100

Color steel plate



KDE 762R

▲ E

1000 X 2100

Color steel plate



KD 714R

▲ E

1000 X 2100

Color steel plate



KDM 754R

★□ ■

1000 X 2100

gold hairline
stainless steel



KSE 867B 1000 X 2100 Color steel plate



KSE 852R 1000 X 2100 texture stainless steel

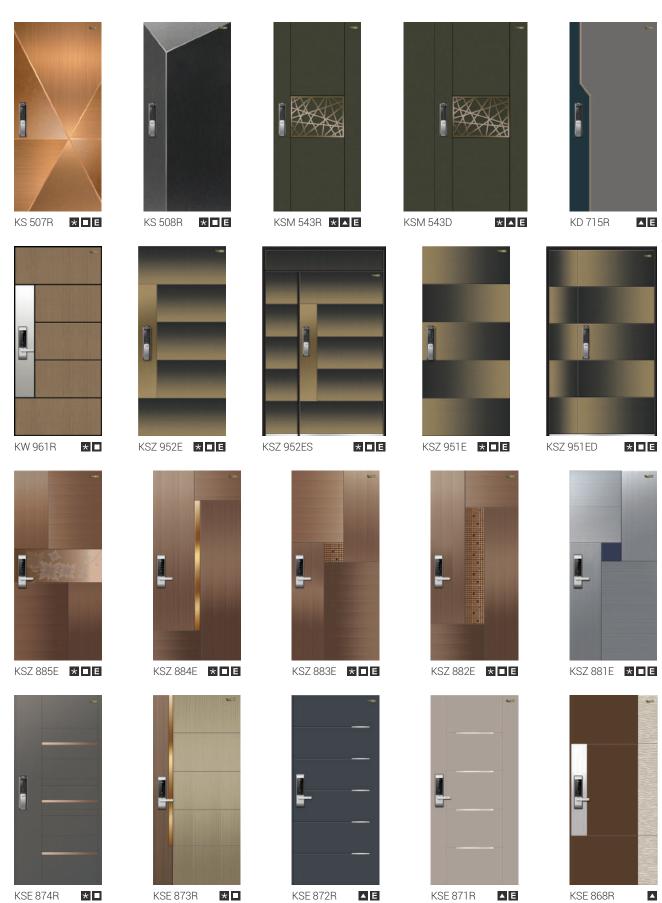


**KSM 541R** lack1000 X 2100 powder coating stainless steel



1000 X 2100 powder coating aluminum

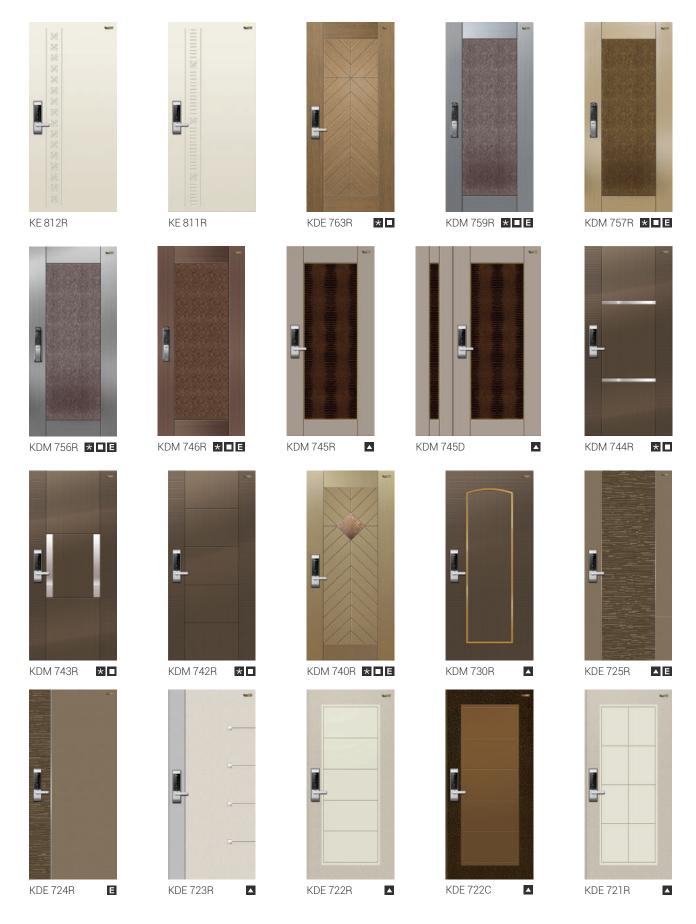




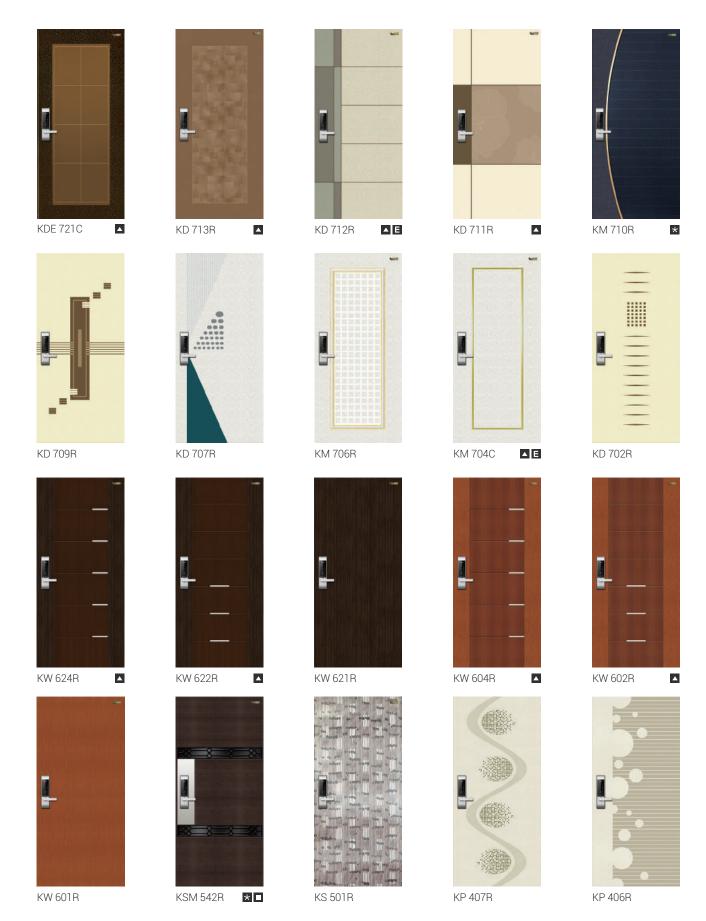
E European type products (Possible)

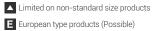






■ Impossible to Non-standard size products

































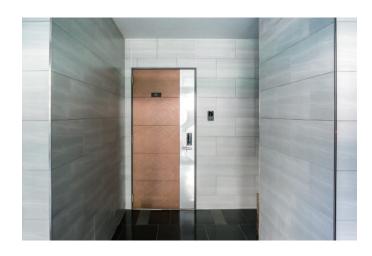








KM 201R













# **DIGITAL DOOR LOCK**

### **Fingerprint recognition**

New concept fingerprint recognition system without hacking concern

#### K-7090SK (PUSH-FULL Door Lock)

Handle all in one I Fingerprint recognition type



Silver 85(W) X 367(H) X 73(D)

Open system 4-way









- Fingerprint algorithm : Obtained KISA certification
- 100 fingerprints can be registered
- Apply pattern authentication method
- Bluetooth enabled products
- Wide operating temperature range, excellent low temperature characteristic





### K-3300SK (Mini-main key Door Lock)

Handle all in one | Mini-main key type



Silver 80(W) X 240(H) X 64(D)

Open system 3-way







- Fireproof certification model
- Obtained autonomous safety confirmation (KC)
- Prevention of residual fingerprint exposure
- Anti-Shock system:
   30.000 volt shock absorber function
- 80dB or more alarm sound for intrusion / breakage / fire



### **Smart Design**

#### Compact and simple digital door lock

#### K-5300SK (Main key Door Lock)

Handle all in one I Main key type



Open system 3-way



- Fireproof certification model
- Obtained autonomous safety confirmation (KC)
- Prevention of residual fingerprint exposure
- Anti-Shock system :30,000 volt shock absorber function
- 80dB or more alarm sound for intrusion / breakage / fire



### K-1100S (Auxiliary Door Lock)

Deadbolt | Auxiliary lock type



Open system 2-way

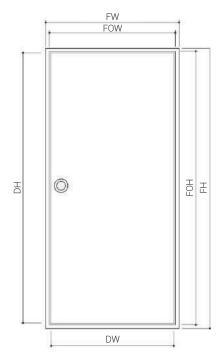


- Obtained autonomous safety confirmation (KC)
- Prevention of residual fingerprint exposure
- Anti-Shock system :30,000 volt shock absorber function
- 80dB or more alarm sound for intrusion / breakage / fire





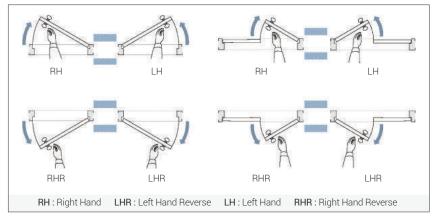
# **FIRE DOOR OVERVIEW**



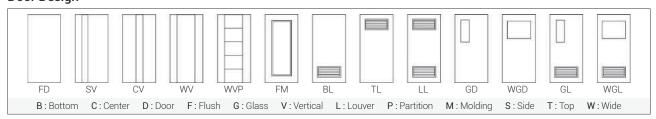
FW: Frame outer diameter width FOW: Frame inner diameter width **DW**: Door width **DH**: Door height FH: Outer diameter height FOH: Frame Inner diameter height

DOOR DEPTH			40			
		FH	1800	2000	2100	2200
		FOH	1740	1940	2040	2140
FW	FOW	DW DH	1731	1931	2031	2131
800	740	732	0	0	0	0
900	840	832	0	0	0	0
1000	940	932	0	0	0	0
1800	1740	1728	0	0	0	0

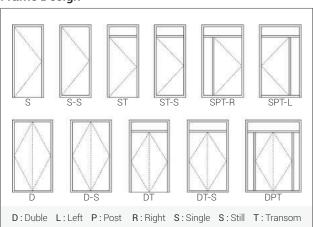
#### Door opening standard



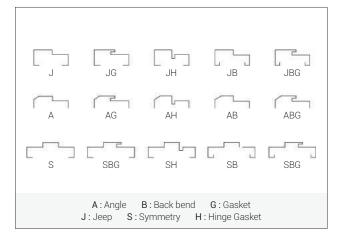
#### **Door Design**



#### Frame Design



#### Frame Profile



#### Major raw materials

Materials and accessories used in the main part of the door should be of KS standard or equivalent quality and should have sufficient strength to exhibit their respective functions and should be rustproof to prevent contact corrosion.

#### 1. Types of iron plate

#### A. EGI (Electrolytic Galvanized Iron)

Zinc coating on the surface of cold-rolled or hot-rolled steel sheet by electrolytic solution improves the corrosion resistance. It has excellent coating finish and corrosion resistance after coating because the plating amount is less, uniform and smooth. Workability is good because the plating process is close to room temperature and the material properties of the original plate can be maintained. It is used for various applications such as home appliances, automobiles, marine equipment, containers, etc., because it is often painted after surface treatment. Compared with GI, machining, painting and welding are outstanding.

#### B. Galvanized Steel

It is divided into an aluminum-based surface-treated steel plate and a surface-treated steel plate for the purpose of corrosion resistance. It occupies 60% of the world surface for the treatment of zinc steel because it is possible to improve the corrosion resistance of about 15 times by zinc plating which prevents sacrifice of steel. It has both of the features of aluminum coated steel plate and galvanized steel, that is, durability, heat resistance, heat radiation of aluminum-plated steel sheet and effects of the sacrificial method of galvanizing.

#### C. Stainless steel plate (STS)

Due to its excellent resistance to corrosion, it can be used for various applications without surface treatment such as painting and painting. A considerable amount of chromium is added to iron(Fe) to prevent rusting, so usually has a number of excellent properties that normal steel does not have while iron is the main ingredient by containing a small amount of carbon(C), nickel(Ni), silicon(Si), manganese(Mn), and molybdenum(Mo) as needed.

#### 2. Fillers (filling and core agent)

Filling core agent: Pole filling, polyester, polyurethane, glass wool, mineral wool

Door core agent: Honeycomb, polyethylene, polyester, polyurethane board, glass wool, mineral wool



Honeycomb Honeycomb is similar to the name of hexagonal honeycomb. It is ten times stronger structure and bending strength than conventional panels. Paper honeycomb: Since the whole surface is composed of a small chamber of uniform size, all parts in all directions have a uniform compressive strength. It prevents bending and warping of a surface material, and it is easy to install long life and hardware because a hexagonal small chamber acts as hexagonal column as it is.



Polystyrene In the EPS resin foaming lip, many independent cells(0.01~0.05mm) are tightly encapsulated in polygonal shape. The size of this independent cell has a great influence on the physical properties and quality characteristics of the EPS processed product, and normally there are about 200 to 300,000 EPS beads, but this can be adjusted in the manufacturing process.



Polyester It is excellent in tensile strength and bonding force, so there is no damage during transportation and handling, and its workability is excellent. Widely used as household goods, it is harmless to the human body, and it has excellent heat insulating property and exerts excellent effect.



Polyurethane board It is the most excellent material among insulating materials and it is formed by independent cell close cell (Closecell), so there is little change of thermal conductivity. There is little concern about fire that may occur during construction.



Glass wool Glass gypsum is made of fiber thickness and is delicately gathered, showing excellent heat insulation effect. In addition, noise and noise are eliminated, special water repellent treatment is performed, so there is no deterioration of insulation performance and deterioration phenomenon due to moisture, and weather resistance and heat resistance are excellent. (Only for water-repellent products)



Mineral wool Made of uniform and fine 5 micron fiber, it has low thermal conductivity, exerting excellent insulation and insulation effect. When filled to the wall, excellent chime effect can be obtained. Since it is cotton made of stone, it never burns in fire. It does not change even at high temperature of 700 degrees due to its high heat resistance. It is used for fire-proof structure such as fireproof coating.



### KEUMGANG FIREDOOR CO.,LTD.

<sup>\*</sup> Printed color could slightly different from the actual product.

<sup>\*</sup> Unauthorized copy is strictly prohibited for all products of Keumgang Firedoor Co., Ltd. because it is under the design protection of Korea Intellectual Property Office.