

 金剛産業株式会社



WAREHOUSE - COLD STORAGE - FACTORY - HANGAR

# KONGO OVER DOOR



**KONGO**

# KONGO OVER DOOR

**Kongo Industries** started selling Over Door in Japan in 1965. We strive as a Leading Company, that opens new possibilities for the logistics industry, and becomes the best partner to our customer seeking new value.





*The spirit of Innovator,  
becoming the one who start it all.*



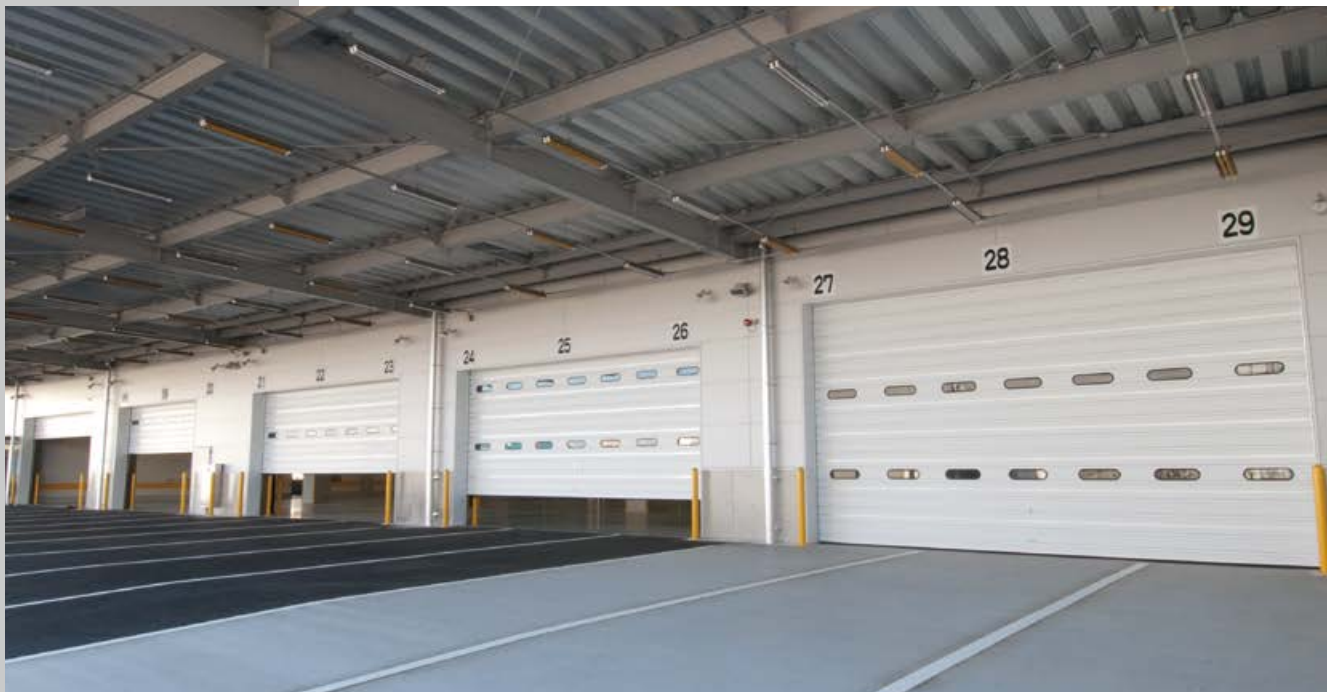
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# Aluminum

Overdoor aluminum with a maximum width of 11m; suitable for distribution and logistics projects. The door can be opened/closed in several seconds, remains smooth despite frequent operation, guaranteeing the safe storage of goods in the room. Wind and weather resistance, can increase the quality of your logistics center.



Air ventilation windows can be added as needed. Aluminum is resistant to rust and corrosion, also helps your building stay clean.



Moving speed 4-6 sec/meter (for Electric-type)

## Furaibo

*Wind Resistant Door*

Along with the growth and globalization, the need of airport logistic warehouse has been increased. The increasing delivery of electronic devices and other important goods that require special treatment in shipping makes security a top priority. This is one of the reasons why many airport logistic warehouses in Japan chose "Furaibo" to strengthen the building structure.



## Commercial

Car dealers need door which shows their products to the potential customers who are outside. KONGO Commercial Door type which is the combination of Aluminium (corrosion resistant) with transparent panels, opens and closes quickly and silently. This door can also be stored on the ceiling which won't ruin the beauty of the interior.





# Asuka

Aluminum

The requirement from the police and firefighting to quickly prepare the airport for an emergency dispatch in case of emergency. To leave the warehouse, needed a wide opening and a faster opening / closing speed are required. The features is combination of the aluminum type with light operability and movable column "Asuka" with quick initial response.



# Heat Barrier

Aluminum

Overdoor are made from lightweight materials with excellent thermal insulation and water resistance for cope the extreme cold weather where heat insulation is required. Reducing the weight of the door body, it is possible to opened/closed door quickly and smoothly for keep airtight the room.



## Large Door

Steel

Maintenance area along 70m for large passenger aircraft. Large steel door operated by sliding to left and right of the room. Realized needed the width opening, width of each panel is over 16m with manually operated, so opening and closing is smoother than expected. Bright lighting material installed on the top and bottom of the door making a comfortable working environment.





# Ice Barrier Dock Shelter

Aluminum

# Insulation Door

Slide / Swing

Insulated Overhead Door is very suitable for Cold Storage, especially for stores fresh food, which is require accurate temperature regulation. By installing a docking shelter that fit to the size of the truck, it helps preventing temperature leakage and increase productivity.



*Ice Barrier, Flex Barrier and Dock Shelter*





*Ice Barrier and Dock Shelter*





# KONGO OVER DOOR

Warehouse, Logistic Centre & Factory

# DRY

Line-up

## Aluminum

P. 10



## ALUMINIUM

## Combination FRP

P. 12



## ALUMINIUM

## Furaibo

P. 14



ALUMINUM

## Commercial

P. 16



ALUMINUM

## Heat Barrier

P. 20



ALUMINUM

## Steel

P. 18



RELATED PRODUCT

## Dock Leveler

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## SPECIFICATION TABLE

Door Model	Material	Ease of Operation	Durability	Economical	Resistance Level				Light Ventilation
					Wind	Weather	Rust	Fire	
Aluminium Panels	Aluminium	●	●	○	●	●	●	—	Window*
FRP Combination	Fiber Glass & Aluminium	●	●	○	○	●	●	—	●
Furaibo	Aluminium (+ Fiber Glass)	●	●	○	●	●	●	—	Window*
Commercial	Aluminium & Glass/Acrylic	●	○	△	△	●	●	—	●
Steel	Steel	○	○	●	●	●	○	○	Window*

● : Excelent

○ : Good

△ : Depends on specifications

\*A window for light ventilation





# Aluminum





**Lightweight with eco-friendly design in mind. Aluminum door is up to 11m width, yet it could still operate quickly.**

Utilizing all the advantages of aluminum, we created a door with a maximum opening width up to 11m. Its lightweight helps to ease the operation and also speeds up the opening and closing process, increases efficiency, and environmentally friendly. Besides, aluminum is also corrosion-resistant, sparkling, which makes your building look more elegant.

## Specifications

### ► Material Framework

Aluminum : specially made  
Coating : anodized + clear coating

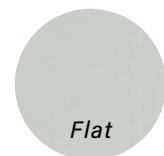
### ► Panel

Aluminum coated oven-baked polyester  
Outside panel : 2 times coating & combustion  
Inside panel : 1 times coating & combustion

► Color : alpine white

### ► Window (optional)

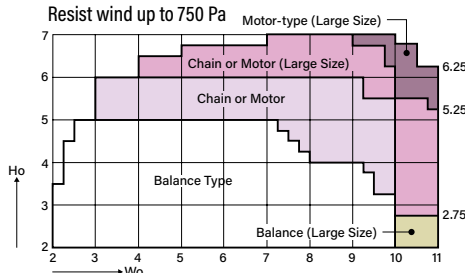
Acrylic 3 mm  
Glass 5 mm  
Fiber Glass 6.8 mm



## Product Range

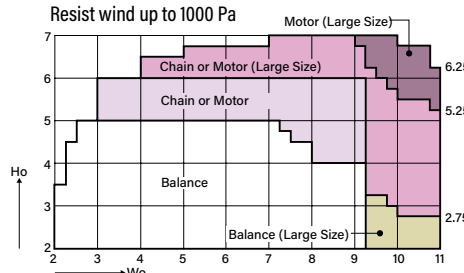
### 75 SERIES

Resist wind up to 750 Pa



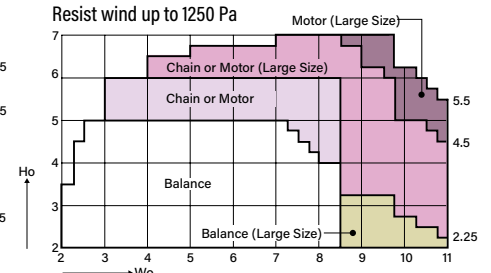
### 100 SERIES

Resist wind up to 1000 Pa



### 125 SERIES

Resist wind up to 1250 Pa





ALUMINUM + FIBER GLASS

# Combination



*FRP (Fiber Glass)*



## The synergy of Aluminum and Fiber-Glass, creating a better functional overdoor.

The combination of two materials between lightweight aluminum (that can be easily processed) and transparent Fiber Glass (FRP) has produced a Hybrid type door. It has high durability and corrosion-resistant, it also allows natural light to come inside the building, and therefore it increases the comfort in the workspace area. The combination of aluminum and FRP can be changed according to the needs and the condition of the location where it is installed.

### Specifications

#### ► Material Framework

Aluminum: specially made

Coating : anodized + clear coating

#### ► Panel

Aluminum coated oven-baked polyester

Color : alpen white

#### ► Fiber Glass

Plastic with fiberglass (FRP)

Color : snow (milk white), clear (half transparent)

#### ► Light Penetration Rate

Snow = 50%

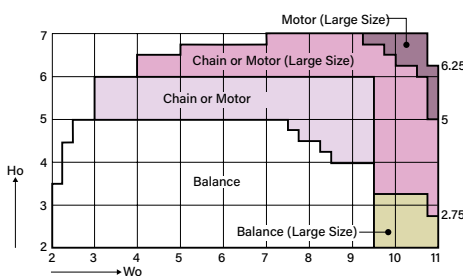
Clear = 80%



### Product Range

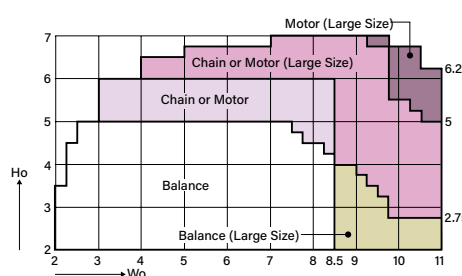
#### 75 SERIES

Resist wind up to 750 Pa



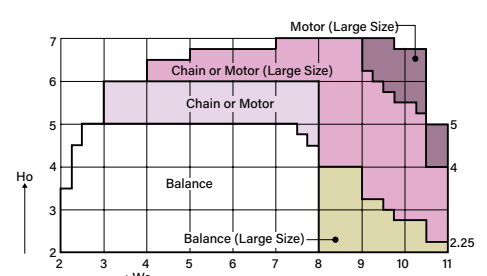
#### 100 SERIES

Resist wind up to 1000 Pa



#### 125 SERIES

Resist wind up to 1250 Pa





WIND RESISTANT DOOR

# Furaibo





## Protect your valuable assets from typhoons. Suitable for areas which require strong wind resistance.

The high strength Over Door is very suitable for the outer walls of buildings, especially those in areas prone to disasters, storms and strong winds, such as in buildings in coastal areas or airports.



### Specifications

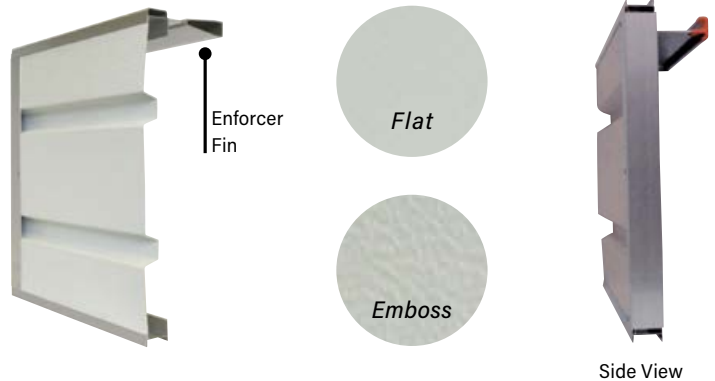
► **Material Framework**

Aluminum : specially made  
Coating : anodized + clear coating

► **Panel**

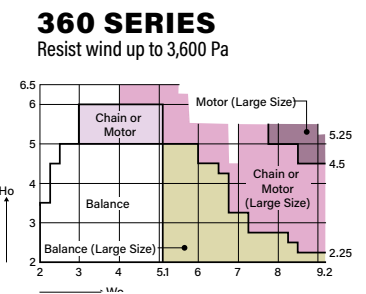
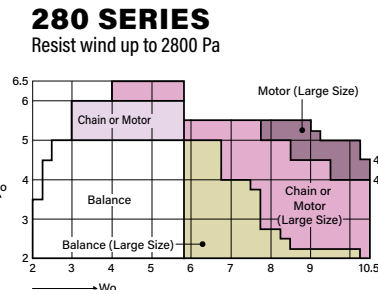
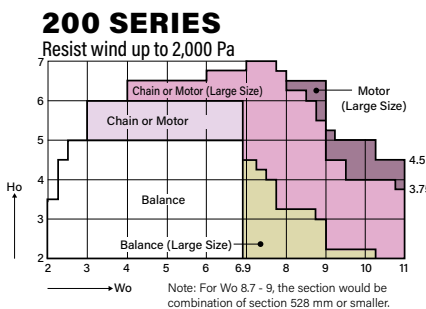
Aluminum coated oven-baked polyester  
Front Surface : 2 times coating & combustion  
Rear Surface : 1 times coating & combustion

► **Color** : alpine white

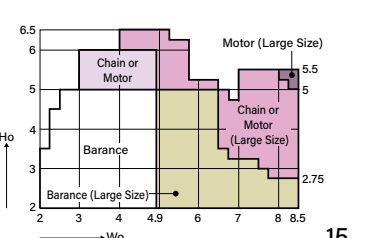
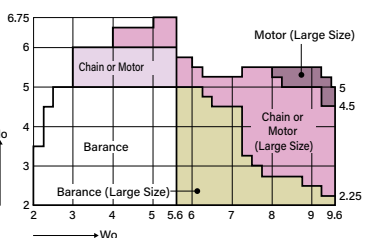
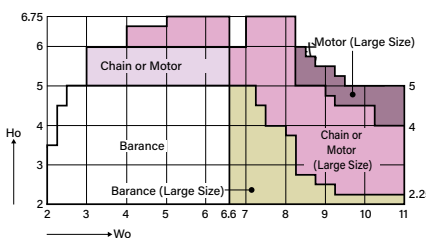


### Product Range

**Aluminum**



**Combination (Fiber Glass)**





ALUMINUM

# Commercial





## Visible from outside, gleaming with sunlight. Enclosed, yet revealing inside scenery.

We fuse the strong metal frame and a transparent material, resulting in a strong overdoor with captivating display. This overdoor is designed for rooms that need to be seen quickly from the outside while keeping everything enclosed, such as the showroom, or workshop.

The transparent panel has four variations (acrylic, polycarbonate, flat glass, and mesh glass), suitable for facilities requiring special protection from weather and salt corrosion.

### Specifications

#### ► Frame

Aluminum : Special made

Coating : Alumite

#### ► Panel

Type	Thinness	Transparency
Acrylic	t5, t3	92.5%
Polycarbonate	t5, t3	85~91%
Flat Glass	t5, t3	90.5~89.5%
Mesh Glass	t6.8	83.5%

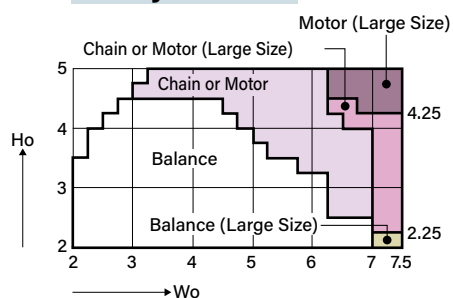


Mixedx used of Commercial with Steel is also possible.  
Please contact our staff for further details.

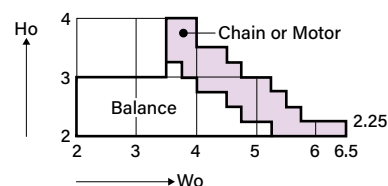
### Product Range

*The range below is made with assumption of ST rail.*

#### Acrylic t3 mm



#### Mesh Glass t6.8 mm







# Steel





**Sturdy and reliable.**

**Popular as an all-purpose door with high-economy value.**

Steel door is the go-to options regardless of the application and its size — either a simple small lightweight door or large-scale facility that demanded certain level of sturdiness. Combining the overdoor functionality and steel reliability, making steel overdoor such a cost-performance option.

## Specifications

### ► Material Framework

Rolled parts of high-strength colored steel sheets

t : 0.5mm & 0.8mm (fire protection) | Coating : double-sided galvanized

### ► Paint

Polyester-based resin-baked coating

[Outside] 2 times coating & combustion [Inside] 1 times coating & combustion

► Color [Outside] white (combination color) [Inside] gray (toning color)

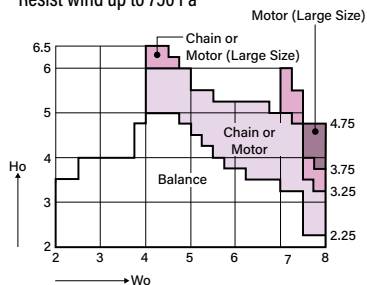


## Product Range

*The range below is made with assumption of ST rail.*

### 75 SERIES

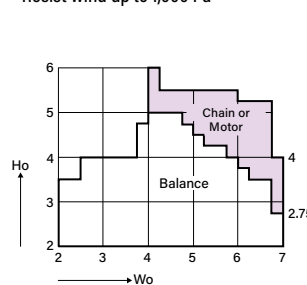
Resist wind up to 750 Pa



0.5 mm

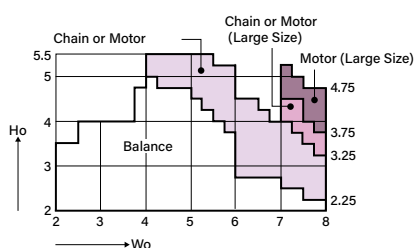
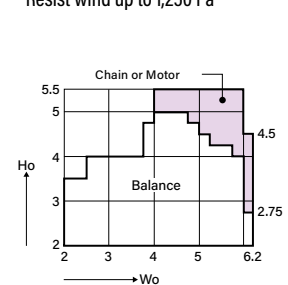
### 100 SERIES

Resist wind up to 1,000 Pa

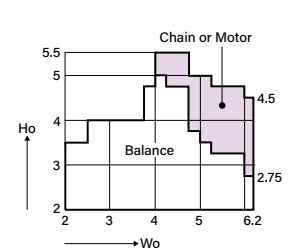
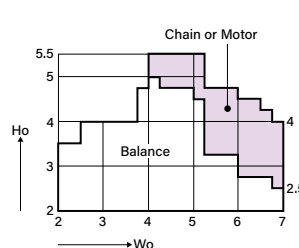


### 125 SERIES

Resist wind up to 1,250 Pa



0.8 mm  
(Fire Protection)





SPECIAL SPECS

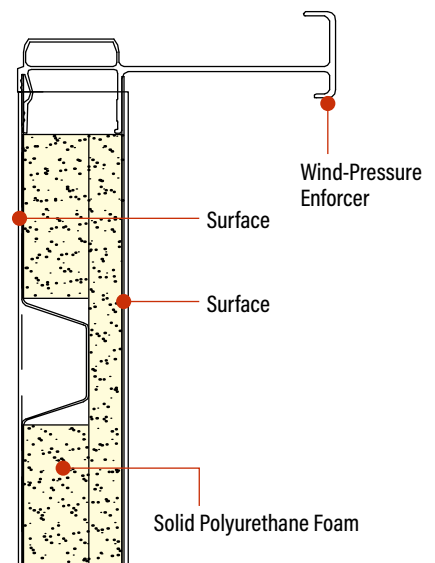
# Heat Barrier



## Fast moving and extremely lightweight door, yet able to maintain indoor temperature.

This is the special overdoor design for building that requires superb heat-retention located in a cold region. The basic benefit of aluminum's corrosion-resistance and durability, added with urethane-foam gives you a strong door that protects from harsh weather, while keeping operations quick enough on minimize the influx of outside air.

Panel Section View



## Specifications

- ▶ **Frame** | Aluminum : specially made  
Coating : anodized + clear coating
- ▶ **Panel** | Aluminum coated oven-baked polyester colored aluminum  
Outside : 2 times coating & combustion  
Inside : 1 times coating & combustion
- ▶ **Color** : Alpen White (combination color)

### [Benchmark]

- ▶ **Insulation** : Extruded polystyrene foam (non-freon)
- ▶ **Heat transmission coefficient** : [  $k=3.67w/(m^2 \times k)$  ](internal lab result)

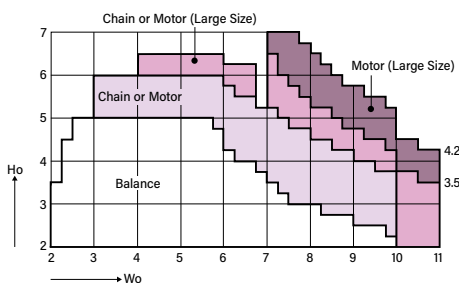
**NOTE** • Heat barrier door is designed to keep simple heat insulation; condensation can occur on the door surface due to the installation environment, temperature, humidity, & temperature differences.  
• Due to the temperature difference inside and outside, condensation might occurs on the door panel.

## Product Range

※The range below is made with assumption of ST rail.

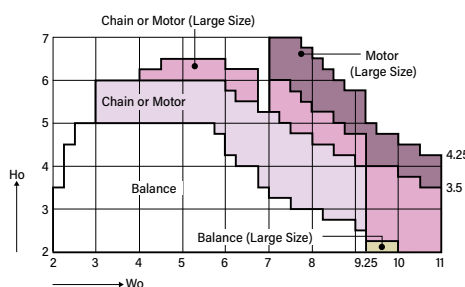
### 75 SERIES

Resist wind up to 750 Pa



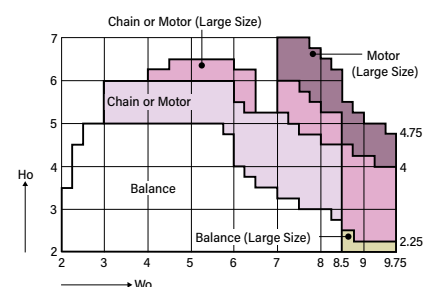
### 100 SERIES

Resist wind up to 1000 Pa



### 125 SERIES

Resist wind up to 1250 Pa



RELATED PRODUCT

# Dock Leveler

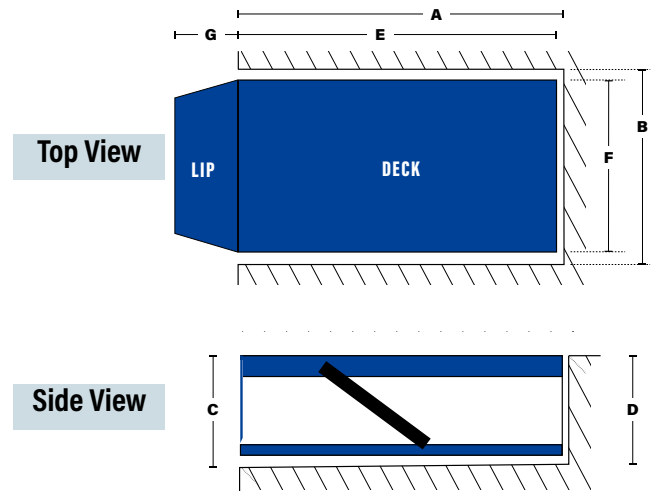
**Eliminates the gaps between platforms, and establish speedy, safety & efficient workflow.**



Dock leveller facilitate a better docking system to your operation. Using the latest electric hydraulic technology at both the main deck and the lip for precision move. Easy operation through the one-button system. Available in two standard static capacities of 13.6 ton and 22.7 ton.

### Features

- Lip that withstand heavy load (Length = 427mm)
- Deck will follow loading platform, making it more safety
- Standard safety side-wings, support rod for maintenance
- Compatible with left/right inclinations due to the partial load of the truck shelter.



HYDRAULIC					PIT DIMENSIONS (MM)				DOCK-LEVELLER DIMENSIONS (MM)			
MODEL	TYPE	STATIC CAPACITIES (TONNES)		WIDTH (A)	LENGTH (B)	DEPTH		DECK		LIP	OVERALL	
						FRONT (C)	REAR (D)	WIDTH (E)	LENGTH (F)	LENGTH (G)	LENGTH (F+G)	
A586	FH	FHE	13.6	22.7	1575	1555	508	495	1525	1510	406	1916
A686	FH	FHE	13.6	22.7	1880	1555	508	495	1830	1510	406	1916
A688	FH	FHE	13.6	22.7	1880	2165	508	495	1830	2120	406	2526
A6810	FH	FHE	13.6	22.7	1880	2775	508	495	1830	2730	406	3136
A6812	FH	FHE	13.6	22.7	1880	3385	508	495	1830	3340	406	3746
A6686	FH	FHE	13.6	22.7	2030	1555	508	495	1980	1510	406	1916
A6688	FH	FHE	13.6	22.7	2030	2165	508	495	1980	2120	406	2526
A66810	FH	FHE	13.6	22.7	2030	2775	508	495	1980	2730	406	3136
A66812	FH	FHE	13.6	22.7	2030	3385	508	495	1980	3340	406	3746
A786	FH	FHE	13.6	22.7	2160	1555	508	495	2110	1510	406	1916
A788	FH	FHE	13.6	22.7	2160	2165	508	495	2110	2120	406	2526
A7810	FH	FHE	13.6	22.7	2160	2775	508	495	2110	2730	406	3136
A7812	FH	FHE	13.6	22.7	2160	3385	508	495	2110	3110	406	3746

The FH type has two buttons to control main deck and lip operations, while the FHE has one button to control main deck only. For other specification (dimension or load), please consult with our staff.





# KONGO OVER DOOR

Hangar, Ultra Door, & Special Door

# MEGA

## Line - up

ALUMINUM / STEEL

**Asuka**

> Movable middle pillar for large opening

P.24



ALUMINUM / STEEL

## Ultra Door

P.26



## Special specifications


ALUMINUM / STEEL

## Noise Barrier

P.29







ALUMINUM / STEEL

**Asuka**

For large door with moveable pillar.





## Create ultra-wide door up to 62 m with the moveable pillars. Operation is swift, yet still ensuring safetiness

Movable pillar for realizing ultra-wide openings of up to 62 meters, assuming helicopter with high frequency of emergency dispatch, storage warehouses and hangar for short-range aircraft, etc. Awareness about safety of operation time by improving work efficiency and operability that can perform frequent opening and closing smoothly, and fast opening and closing and storage.



Movable pillars + rails

### OPERATIONS



CLOSE



OPEN-1



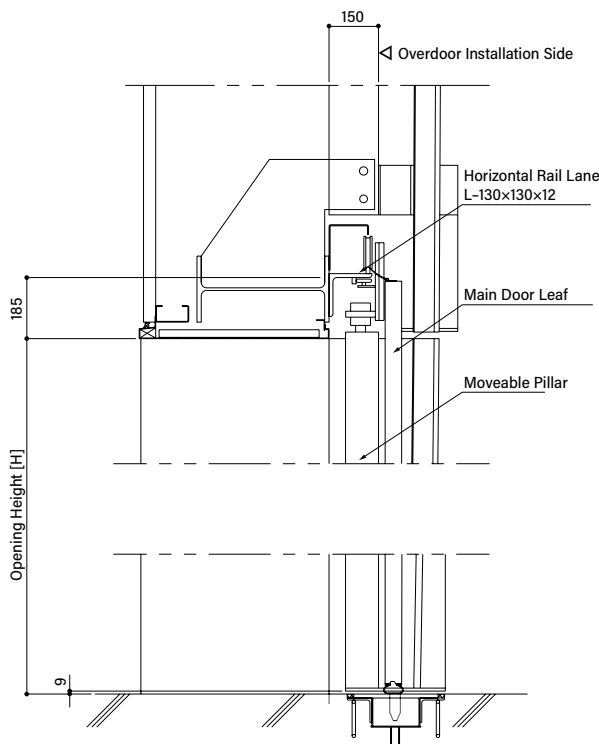
OPEN-2



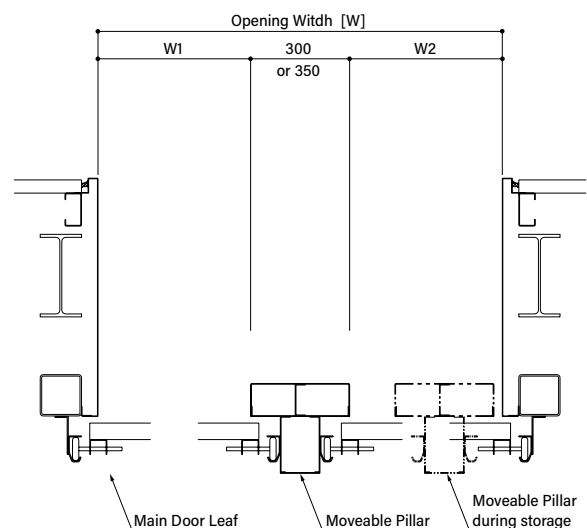
Pillar is moving




FULL OPEN



Note : Storage moving direction can be either way (right/left).







ALUMINUM / STEEL

# Ultra Door





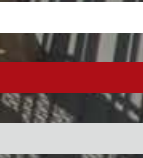


## Ultra-wide door that open from any side. Operate the doors pleasantly despite the huge size.

Door panels for large openings such as hangars, maintenance sites, and air cargo warehouses for large airliners. Compared with Overdoor, this huge door is the left and right sliding type, but it can be opened and closed quickly and stored. The possibilities of choosing light-resistant material will make the workspace full of natural light.







ALUMINUM / STEEL

# Special Specs



COLOR STEEL PLATE

# Noise Barrier



## Glass-wool which absorbs sound, along with sound insulation to prevent noise leakage.

Overdoor with noise control features that befitting for factories and warehouses located inside urban residential area. Equipped with glass wool as a sound absorbing material inside the door panel, adding highly reliable sound insulation performance. You can concentrate on working indoors without worrying about noise leaks. Opening width up to 7m.



### Specifications

► **Panel**

Rolled moldings of high-strength colored steel sheets  
Plate thickness 0.8 mm | Coating : double-sided galvanized

► **Paint**

Polyester-based resin-baked coating  
2 times coating and combustion

► **Color** : alpine white (special blend color)

► **Sound Insulation**

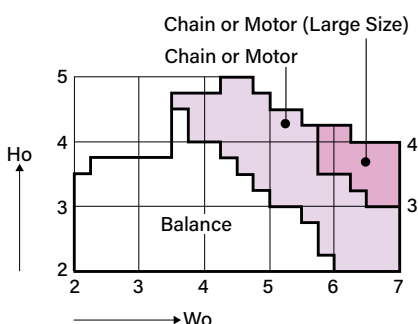
Glass wool thickness is 25mm, density : 32kg/m<sup>3</sup>

► **Back Plate**

Aluminum porous, plate thickness is 0.8mm

### Product Range

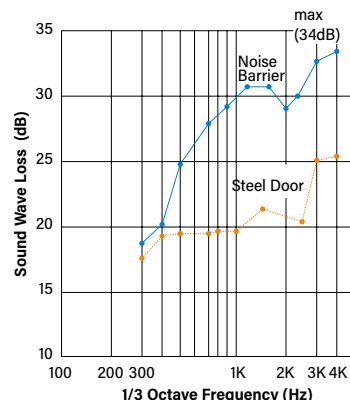
※The range below is made with assumption of ST rail.



The range applied to the wind pressure 75 kPa. For higher wind pressure conditions, consult us.

### Sound Insulation Effect

Unlike another ordinary doors, the noise barrier has a soundproofing effect of 20 dB to 30 dB in the middle and high frequency bands, as shown in the graph.



—●— **Noise Barrier**: Consist of t.08 steel plate, Glass Wool Aluminum & Perforated Plate  
-●- **Steel Door**: t.0.8 Steel plate

Sound transmission loss test (reverberation room-reverberation room method) Based on JIS A 1416 measurement method.  
\* When both are installed by the standard construction method (Measurement) Tokyo Metropolitan Industrial Technology Center



# KONGO OVER DOOR

Distribution Centre & Cold-Storage

## COOL Line-up



● Ice Barrier

P.32



● Ice Barrier 75

P.34



● Flex Barrier

P.36



● Dock Shelter

P.38

### OUTSIDE

Insulated Door

# INSIDE

## Heat Resistance Door



● Thermo Barrier P.44



● Red Heat Barrier P.45



● Economy Barrier P.46



● Overlap Door P.47

## Supporting Products



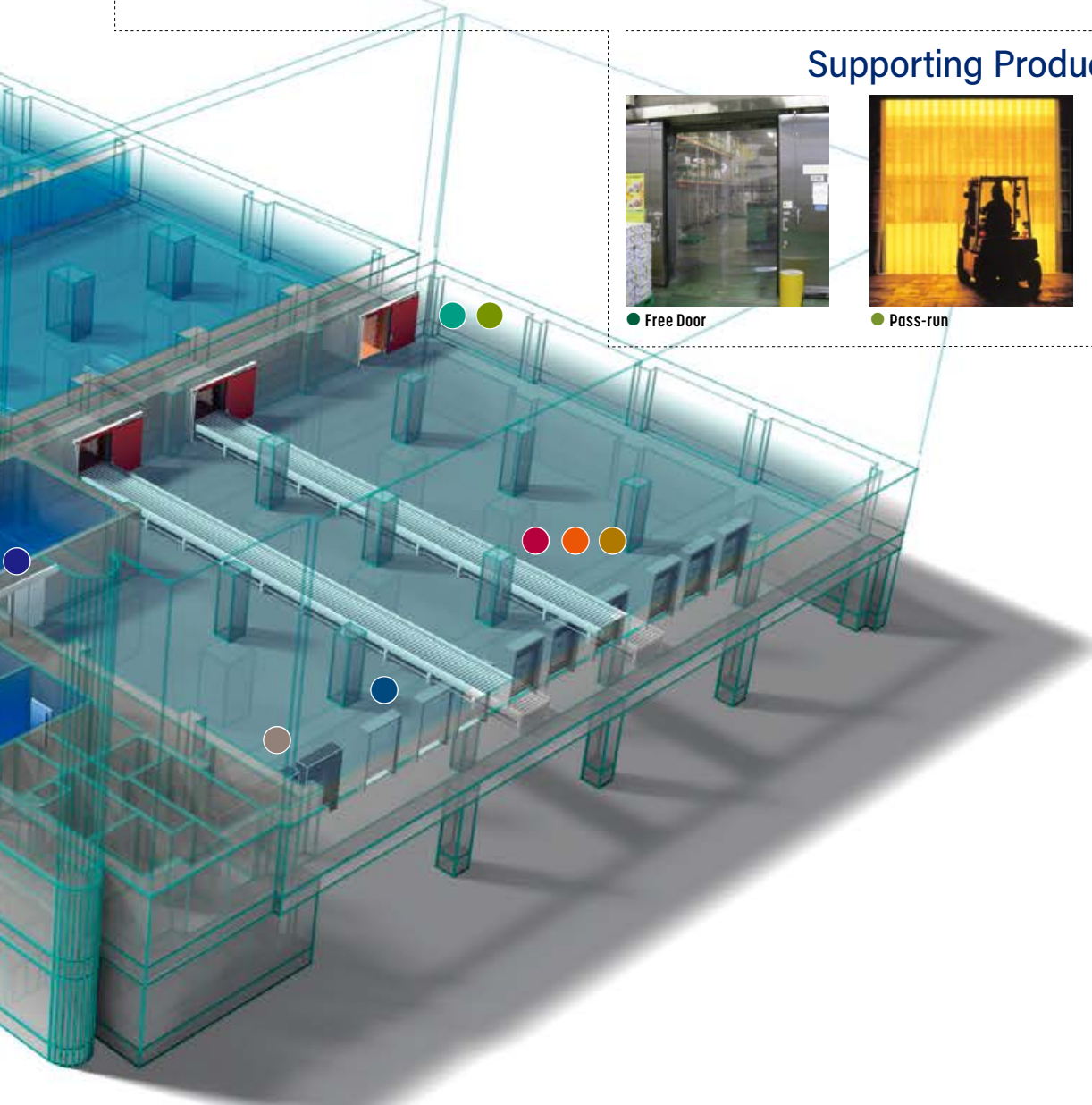
● Free Door



● Pass-run



● PVC Sheet-Shutter



More detail of Heat Resistance Door can be found in "Cool Barrier Door" catalogue. (only in Japanese)



● Auto Shelter P.40



● Air Shelter P.42



● Weather Seal P.43



**OUTSIDE** INSULATED OVERDOOR

# Ice Barrier



*Windows and Fire-key are options.*



## Get the efficient insulated overdoor creating a better room temperature control. The metal surface prevents heatbridge, leading to less dew.

Insulated Overdoor KONGO are contains 2 rigid urethane, wood frame resin to prevent metal surface effect of Thermal Bridge and build our product one step ahead. With a maximum width of 3,9 m and 3 of surface variants are Steel or Aluminum or Stainless Steel. Also available, model with heater installed into frame for preventing condensation.

### Specifications

#### ► Steel

Panel of steel plate with galvanized paint  
 $t=0.5$  mm | White color

#### ► Aluminum

Panel of aluminum with coloured paint  
 $t=0.6$  mm | White color

#### ► Stainless Steel

Panel of SUS3014 with clear coating finishing  
 $t=0,5$  mm

#### ► Function

Temp. isolator : rigid urethane foam (injection foam)

Thermal conductivity : below  $k = 0.021$  w / (m × k)

Coefficient of heat transmission

- $k = 0.338$  w / (m<sup>2</sup> × k)

(measurement on the middle of steel panel)

- $k = 0.485$  w / (m<sup>2</sup> × k)

(steel panel samples: industrial technology center)

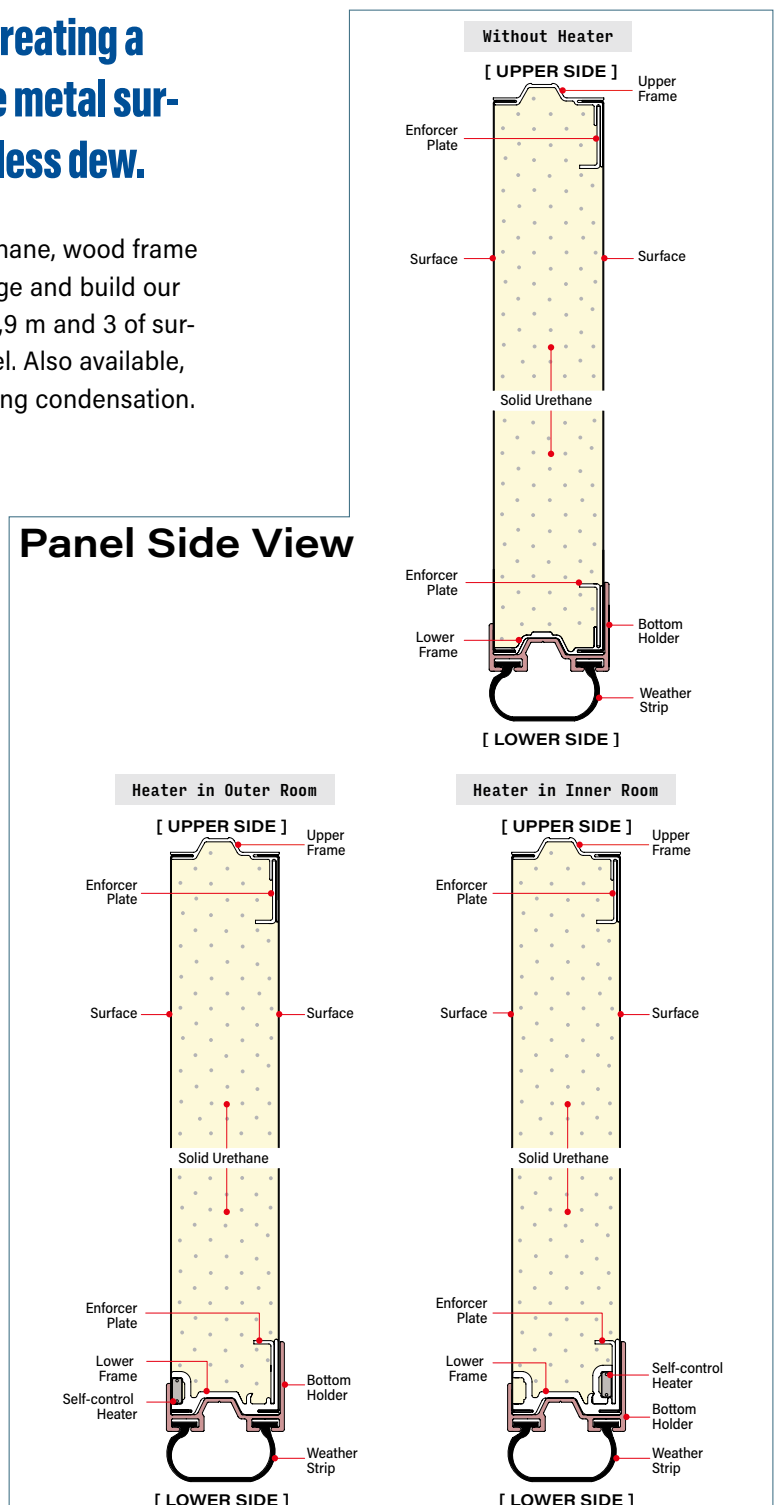
### Product Range

- Opening Width (Wo) up to 3,900 mm
- Opening Height (Ho) up to 5,000 mm
- Door weight up to 400 Kg
- Floor room temperature above 0°C
- Inside and Outside temperature difference up to 35°C

Heater installation could help preventing condensation on door surface, especially on area with high temperature & high humidity. Heater installation is optional.

Note : Specifications can be change without prior notice.

### Panel Side View





**OUTSIDE** INSULATED OVERDOOR

# Ice Barrier 75

Non Front





**Made for chill room of -5°C and above.**

**Wood-frame base is pre-equipped with a heater to reduce condensation.**

Jointed panel surface material with a rigid urethane extruded product that prevents heat conduction inside and outside, so that it can be used in more severe applications. An airtight seal is attached to the gap. A heater is provided as standard in the airtight part of the decorative frame to reduce condensation.

## Specifications

### [Surface Material]

- ▶ Aluminum : Coated oven-baked polyester, t = 0.6mm
- ▶ Steel : Coated oven-baked polyester, t = 0.5mm
- ▶ Color : White

### [Performance]

- ▶ Insulation Material : Hard Urethane Foam (non freon)
  - ▶ Head Transmission Coefficient :  $k=0.498w/(m^2 \times k)$
- <Based on TIRI Tokyo lab result>

Please contact us for stainless steel surface materials.

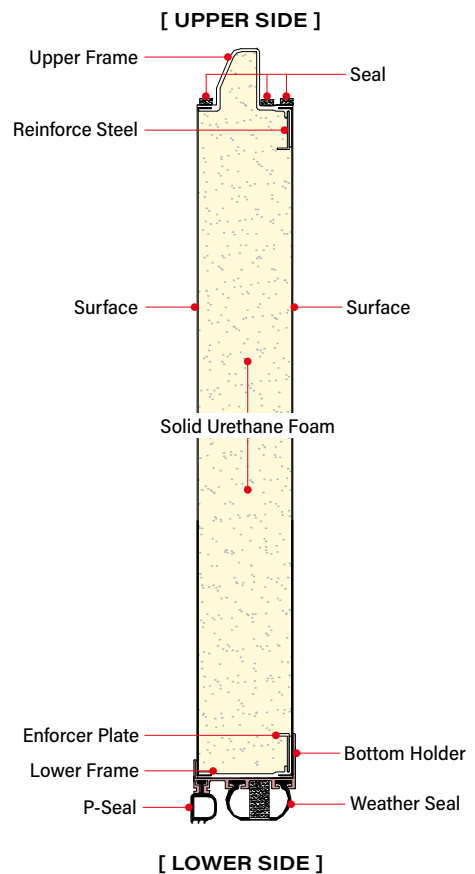
## Product Range

- ▶ Opening Size
  - Width up to Wo 3,000mm
  - Height up to Ho 3,000mm
- ▶ Door Weight : Up to 200kg
- ▶ Operating temperature +5 to -5°C or above
- ▶ Temperature gap between inside and outside 40°C or less

\* Condensation may occur on the surface of doors and decorative frames depending on the hot and humid season, the location of the facility, the environment of the cooling equipment, etc.

\* In order to prevent the accumulation of condensed water that has fallen, please consider making the floor under the overdoor slope as far as possible toward the outside.

## Panel Side View





**OUTSIDE** INSULATED OVERDOOR

# Flex Barrier



Before  
Collision



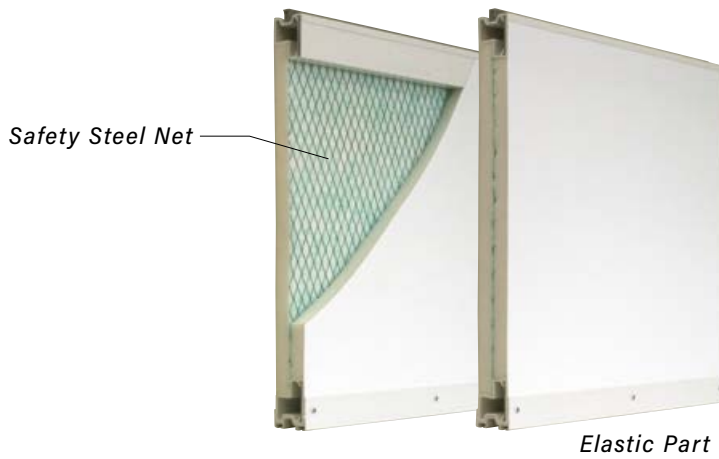
During  
Collision



Restored  
(After Collision)



*Photo is to show the door ability to restored after being hit by a forklift.*



**Sufficiently flexible and resiliente,  
along with security features in mind.  
Flex barrier reduces risk of damage and  
repair cost cause on-work accidents.**

Overdoor panel with special soft layer, double functioned for weather seal and flex barrier. It can minimize damage risk from crash and reduce maintenance cost while also protecting the safety of staff. With a maximum width of 3,5 m, it can be used for all kinds of doors, Kongo's cold storage overdoor, or even overdoor from other companies.

## Specifications

- ▶ Top & Bottom Side Formwork  
Special form of rigid PVC | White color
- ▶ Surface  
Vinyl chloride with polyester fiber  
t=0,8 mm | White Color
- ▶ Insulator  
Soft urethane with high density | t=25mm × 2 layers
- ▶ Safeguards  
Iron Nets
- ▶ Top Seal Material  
Ethafoam | 12 mm × 17 mm
- ▶ Bottom Seal Material  
Weather strip | EPDM/PVC

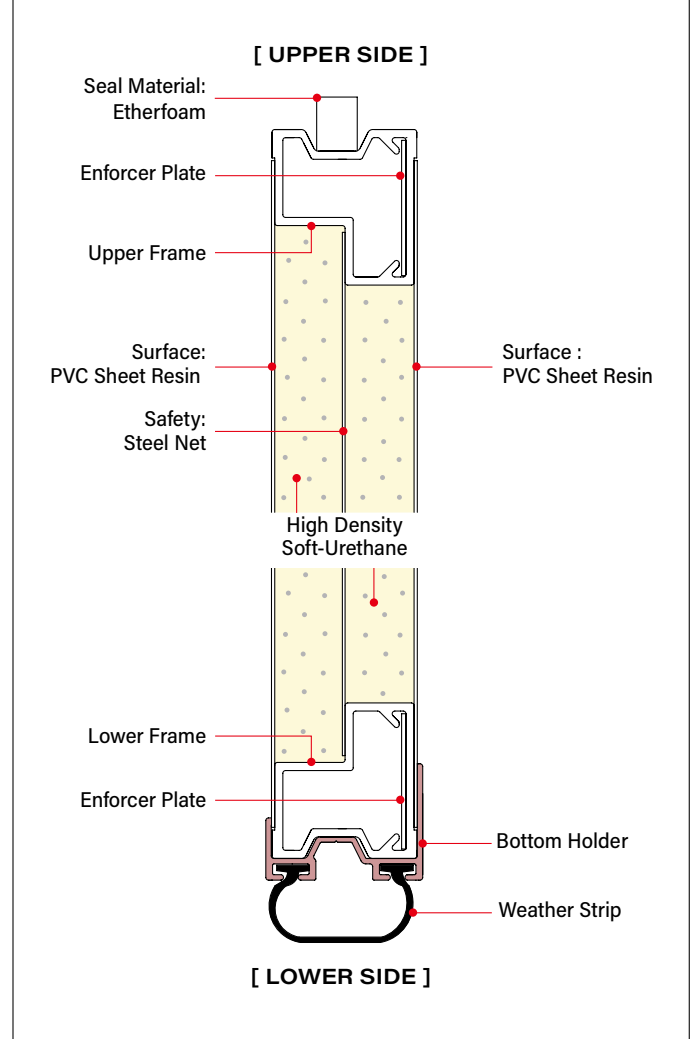
### NOTES

- If you are going to install it into other brand, please consult with us about the door maker and type.
- If the door has been installed, spring replacement might be required.
- The panel may be damaged depends on the usage.
- Condensation may occur in case of high temperature and humidity.

## Product Range

- Width (Wo) up to 3.500 mm
- Height (Ho) up to 528 mm

## Panel Side View





OUTSIDE

# Dock Shelter



**Close the gap with the soft yet strong cushion foam when the truck is docking. The sidepad absorbs the tail lamp's heat, ensuring more safety and durability.**

Urethane foam pads with high elasticity to close the gap between platform and truck body, preventing insect and keeping air-tight. KONGO have a Preventing Overheating System, effective to muffle hot stack on the door joint in direct contact with truck's rear light, helping to minimize fire risk from urethane foam gas.



## Specifications

Variation : Static / Moveable Headpad / Moveable Headpad with Roll Curtain / Moveable Sidepad / Vertical

### COVER & PLEATS

Detail	Unit	Value
Material	Polyvinyl chloride sheet with polyester fabric	
Thickness	mm	0,84
Tensile Strength	kgf	296
	kgf	278
Tear Strength	kgf	66,6
	kgf	61,2

### PAD CUSHION

Detail	Unit	Value
Material	Soft urethane foam	
Density	kg/m <sup>3</sup>	16,0 ± 1,3
Rigidity	kg	8,5 ± 2
Compressive Elastic Strain	above %	8
Cyclic Compression Residual Strain	below %	5,5
Tensile Strength	above kgf/cm <sup>2</sup>	0,7
Stretch Rate	above %	120
Tear Strength	above kg/cm	0,3
Rebound Resilience	above %	35

#### Fireproof pleat position.

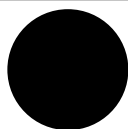
The static headpad type: on the upper sidepad and bottom respectively until the 3rd sheet.

The dynamic headpad type: when using a roll curtain, the top to near the bottom of the stroke on the head pad can be moved, and down to the 3rd sheet.

### Sheet Color Variation

Default

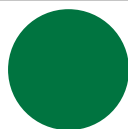
Alternative Colour



Black



Blue



Green



Gray

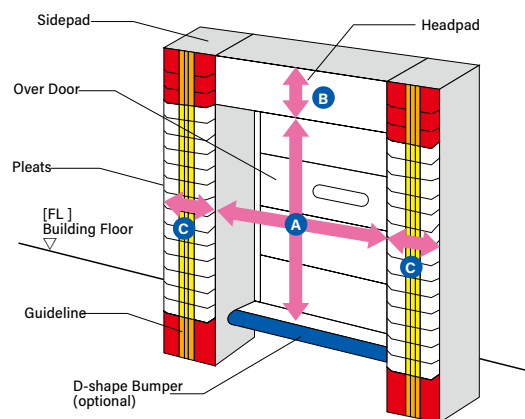
Note : Specifications can be change without prior notice.

### SIZE GUIDE (EXAMPLE)

Truck Size and Loading Case	Opening Size Wo × Ho (Weight × Height) A		Pad Size Head Side B C		Dock Shelter	
	Single Truck Use	2 ton (trolley)	1.600	1.600		300
4 ton (trolley)		1800	1.800	400	350	Static
4 ton (forklift)		2.000	2.600	300	300	Roll Curtain
8 ton (forklift)		2.000	2.600	350	350	Moveable Headpad
10 ton (forklift)		2.200	2.700	300	300	Moveable Headpad
Mix Truck Use	2-4 ton (trolley)	1.600	1.800	400	450	Moveable Headpad
	2-4 ton (forklift)	1.600	2.600	300	450	Roll Curtain
	4-10 ton (forklift)	2.000	2.700	300	350	Moveable Headpad

The size guideline above is based on the assumption that the building floor (FL) is 1,000 mm above the ground.

The height and width of the truck body are not exactly the same even though the trucks are of the same type and type. Pay close attention to the size of the fleet to be used before installing.



Dock Shelter cannot be installed in an open area that has direct contact with rain. We strongly recommend for a roof/canopy above the Dock Shelter.



OUTSIDE

# Auto Shelter



## Start a hygienic docking area with less air exposure to your products, designed for various incoming truck. Creates a quiet, energy efficient, and eco-friendly loading operations.

The process of connecting the door with the body of the truck in a closed-door state can minimize the possibility of products exposed to outside air and keep the goods hygienic.

The relatively larger stroke size, when compared to the Air Shelter allows the use of the smallest size car to the container carrier. Quiet operation and no worries of air leakage/contamination.

Equipped with seals that operate when needed and help suppress the consumption of energy. The advantages of this product will be felt over time.

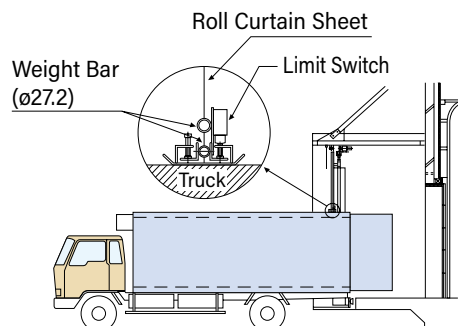


## Specifications

MAIN SHEET	
Material	Vinyl Chloride sheet containing polyester
Coating	Flourine
Thickness	0,5 mm
Weight	597 g / m <sup>2</sup>
Tensile Force	169 × 127g / 3m
Tear Strength	8,6 × 10,7 kg
ROLLER SHEET	
Motor Capacity	3 Phase, AC200V 100W 50/60Hz, Output 100w
Max Curtain displacement	2.400 mm
Speed of Opened - Closed	Approx. 40 seconds (when the pulley moves maximum)
Device Termination	- Detection switch of vehicle height - Detection switch of motor speed (motor type)
SIDE SEAL	
Motor Capacity	3 Phase, AC200V 100W 50/60Hz, Output 100w
Max Bulkhead displacement	1,050 mm/side
Speed of Opened - Closed	Approx. 30 seconds (when the pulley moves maximum)
Device Termination	Wire tensile force limit detection switch
Security Devices	Sagging wire detection switch
SAFETY EQUIPMENT	
Side Bulkhead	Pusher bulkhead system
WIND RESISTANCE STRUCTURE	
Curtain Roll	Stuck by the tension of the weight bar
Side Bulkhead	Installation of wire on internal sheet
HOW TO OPERATE	
Control Button	Using a switch for opening-closing operation

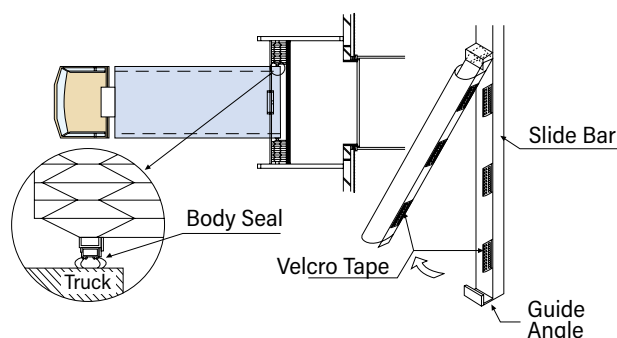
## Roll Curtain Mechanism

Using a simple mechanism that rolls up the curtain instantly. Includes a limit switch attached to the center of the base of the weight bar. The blind stops automatically according to the height of the fleet.



## Side Seal Crash System

If the truck accidentally runs without loosening the side bulkhead first, the seal at the end of the side bulkhead will detach from the slider bar. The seal head will move following the truck and reduce the risk of damage. If you want to fix it, simply re-fix the seal head.

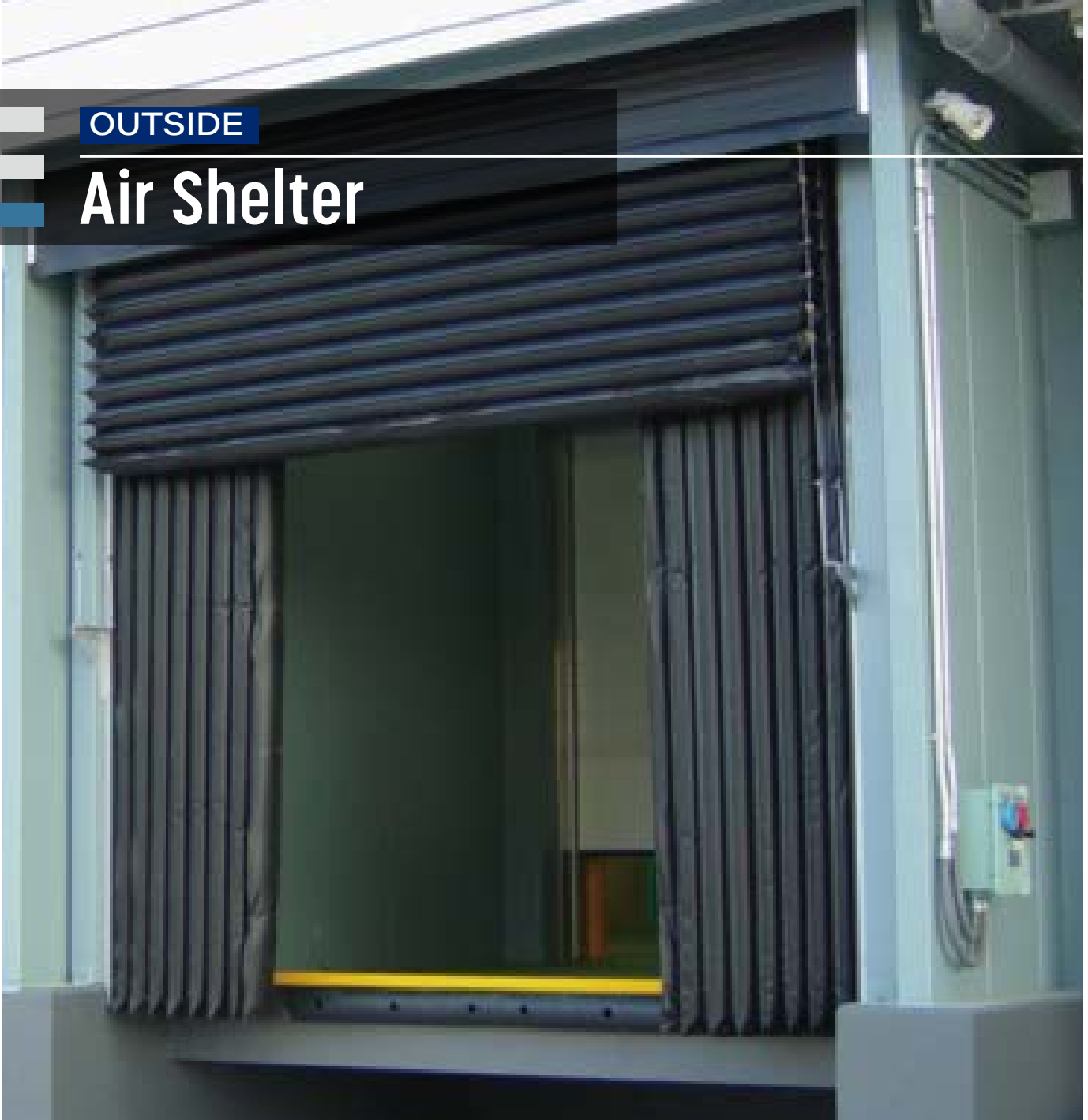


Note : Specifications can be change without prior notice.  
Dock Shelter can be installed parallel along with overdoor or other products. (Optional)



OUTSIDE

# Air Shelter



**Close the gap perfectly, flexibly and utilizing the airpower.**

**For the hygienic process of unloading goods without exposure to the outside air.**

The truck could dock with the rear-door closed to keep your product hygiene from open air. Each of the sheet is filled with air, leaving no gaps in between giving the best close area suitable for either truck small or big truck.

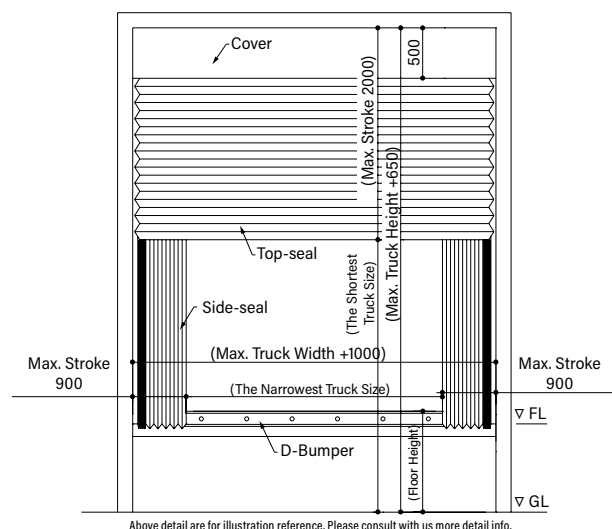
## Specifications

### [Sheet Material]

- ▶ Side Seal : Vinyl chloride sheet containing polyester
- ▶ Top Seal : Vinyl chloride sheet containing polyester

### [Power Source]

- ▶ Roll Motor : Single Phase 200V 50/60Hz Output 140W
- ▶ Blower : Three-Phase 200V 50/60Hz Output 300W



OUTSIDE

# Weather Seal



**Special sheets with high abrasion resistance effectively suppress dust and outside air intrusion. Ensures the airtightness above a certain level at a low price.**

For berths with limited vehicles, hygienic cargo handling work to open the vehicle door after a close-up vehicle and dust-proof, insect-proof, and simple sealing have been realized with simple workability and low cost. By using the upper part as an optional movable roll curtain, it is possible to correspond to vehicles of different sizes to some extent.

## Specifications

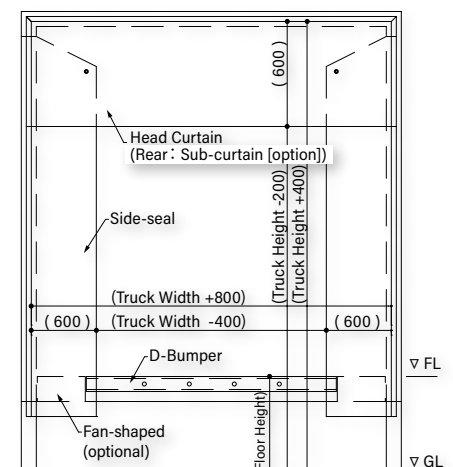
### [Sheet Material]

- ▶ Side Seal : Vinyl chloride sheet containing polyester  $t=3\text{mm}$
- ▶ Head Curtain : Vinyl chloride sheet containing polyester  $t=3\text{mm}$   
(Sub-curtain) : Neoprene sheet with fiber  $t=0.7\text{mm}$  (optional)

### [Design Type]

- ▶ Fixed / Moveable Head with Roll-Curtain / Side with Hinge / Integrated Sleeve-Wall

\* Detailed specifications will be decided by a meeting later.  
\* Sub-curtain and fan-shaped pad are optional.



Above detail are for illustration reference. Please consult with us more detail info.



# INSIDE HEAT RESISTANCE DOOR

Double-Swing / Single-Swing / Vertical

# Thermo Barrier

Electric



Double Sliding (Electric Type)

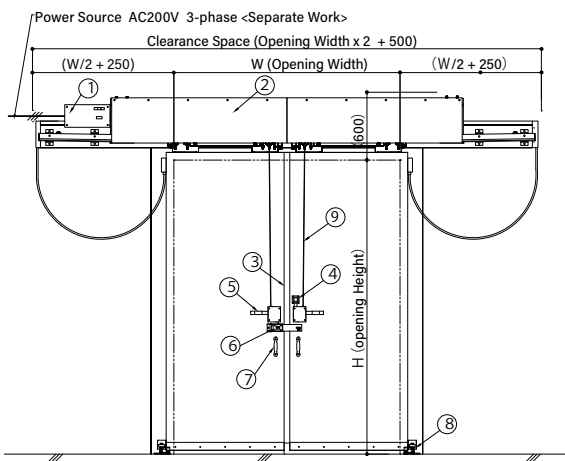
**Ideal for cold storage which demands strict temperature control and hygiene standards. Quiet and safe operation due to inverter settings.**

Using a clean structure to prevent oil or dust droplets, this is suitable to use in places that apply high hygienic standards. Space-saving design which makes it easy to install HACCP covers and suppress wall protrusions. With the "Slow start, slow stop" system set by the inverter and motor stop detection system. Strengthen the safety of your work environment.

## Specifications

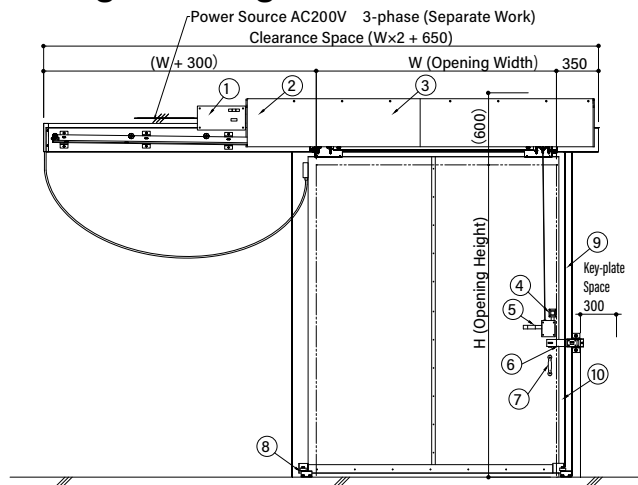
Surface	SUS304			
Insulation	Solid Poly-urethane Foam			
Frame	Processed Spruce-wood			
Insulation Thick	75mm	100mm	125mm	150mm
Temperature Range	-10°C	-20°C	-25°C	-35°C
Design Range	Two-side W3,200×H3,200mm One-side W1,800×H2,550mm			
Power Unit	AC200V 3phase (50/60Hz) 400W/750W (with Inverter)			
Operation	Pull Switch, Fire Interlocking			
Safety Equipment	Safety Switch, Motor-stop Detector, Manual-swift Handle			
Door Heater	Required if the room is below 0°C			

### Double-Sliding



1 : Control Panel	6 : Key Plate (Option)
2 : Chain Cover	7 : Door Handle
3 : Safety Switch	8 : Guide Roller
4 : Half-open button (Option)	9 : Wires
5 : Manual Mode Handle	

### Single-Sliding



1 : Control Panel	6 : Key Plate (Option)
2 : Motor	7 : Door Handle
3 : Chain Cover	8 : Guide Roller
4 : Half-open button (Option)	9 : Base Frame
5 : Manual Mode Handle	10 : Safety Switch

# Red Heat Barrier

Electric



**Achieving satisfactory safety factor and heat & fire resistance in one door. It becomes important fireproof choice for large-scale cold storage facility.**

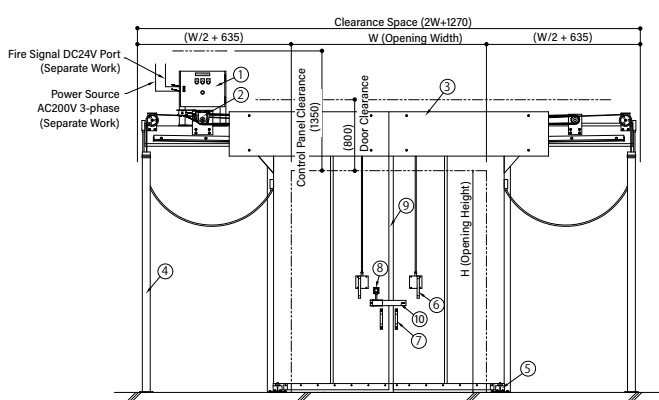
A highly-functioning heat insulator door with with double duty as fire-prevention equipment in an event of a fire. The door will automatically close when the fire is detected, ensuring fire not spreading. Recognized as one of the fire suppression tools that can protect the employees, and minimize losses in the event of unwanted things.

This is the insulation door that other will refers in the future.

## Specifications

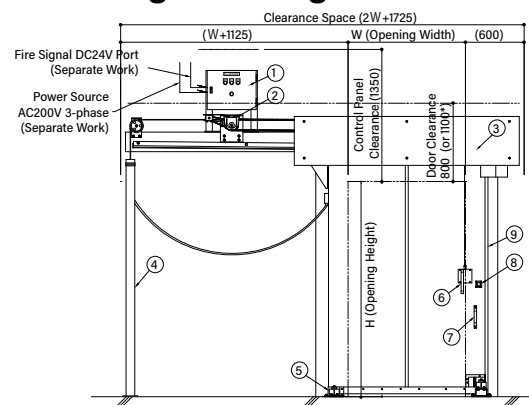
Surface	SUS304		
Insulation	Solid Poly-urethane Foam		
Fire-resistance	Aluminum hydroxide calcium oxide plate		
Frame	Processed Spruce-wood		
Thickness	125mm	150mm	175mm
Insulation Thick	75mm	100mm	125mm
Temperature Range	-10°C	-20°C	-30°C
Design Range	Two-side W3,200×H3,200mm One-side W1,800×H2,550mm		
Power Unit	AC200V 3phase (50/60Hz) 400W/750W (with Inverter)		
Operation	Pull Switch, Half-open Button (option), Fire Interlocking		
Safety Equipment	Safety Switch, Manual-shift Handle		
Door Heater	Required if the room is below 0°C		

### Double-Sliding



1 : Control Panel	5 : Manual Mode Handle
2 : Motor (AC 200V 3-phase)	6 : Door Handle
3 : Chain Cover	7 : Half-open button (Option)
4 : Weight Cover	9 : Safety Switch
5 : Guide Roller	10 : Key Switch (option)

### Single-Sliding



1 : Control Panel	5 : Manual Mode Handle
2 : Motor (AC 200V 3-phase)	6 : Door Handle
3 : Chain Cover	7 : Half-open button (Option)
4 : Weight Cover	9 : Safety Switch
5 : Guide Roller	

Depending on the opening size, the weight stroke. The general height may increase to about 1,100mm.



INSIDE HEAT RESISTANCE DOOR

New Design

# Economy Barrier

Electric Manual



Double-sliding

**For chilled rooms in food factories and distribution centers. Heat-resistant door that delivers safety, light weight, and has high airtightness with economical price.**

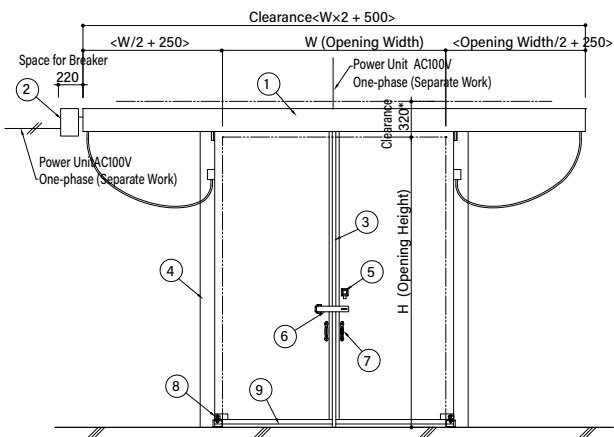
High-quality heat insulators meticulously injected without gaps, then layered with two kind of special seals, creating a perfect enclosed space at an economical cost. Place that demand high hygiene would glad for our belt for motor oil droplets, and the use of anticorrosion resin materials on the inside of the door panel. Brush-less motor will performs very well for frequent usage. The slow stop system and load detector adds more safetiness to your facility.

## Specifications

Surface	SUS304, Chrome Colored	
Insulation	Solid Urethane-foam	
Frame	Wood-based Material	
Insulation Thickness	50 mm	75 mm
Temperature	+5 °C	-5 °C
Design	Two-Side	W2,800 × H2,800mm
	One-Side	W2,200 × H2,800mm
Power Unit	AC100V 1-Phase (50/60Hz) 300W	
Operations	Pull Switch (Option : Half-open Button, Hand Sensor)	
Safety Equipment	Safety Switch,	
Door Heater	None	If room is below 0 °C. For inside/outside

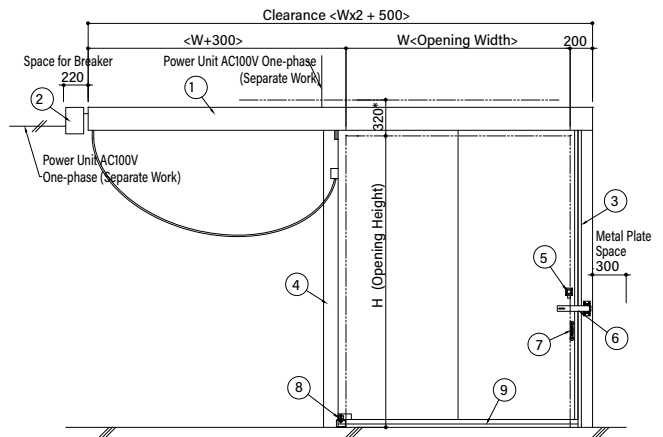
- ▶ In the case of dimensions and temperature setting other than the above, please consult with the staff.
- ▶ If either inside or outside the storage room is less than or including 0 degrees celsius, install a floor heater under the door. (Separate construction)

### Double-Sliding



1 : Drive Unit	4 : Base Frame	7 : Handle
2 : Breaker (if using Heater)	5 : Push Button (Optional)	8 : Guide Roller
3 : Tape Switch	6 : Key Plate (Optional)	9 : Rubber Seal

### Single-Sliding



**INSIDE**

INSULATED OVERDOOR

# Overlap Door

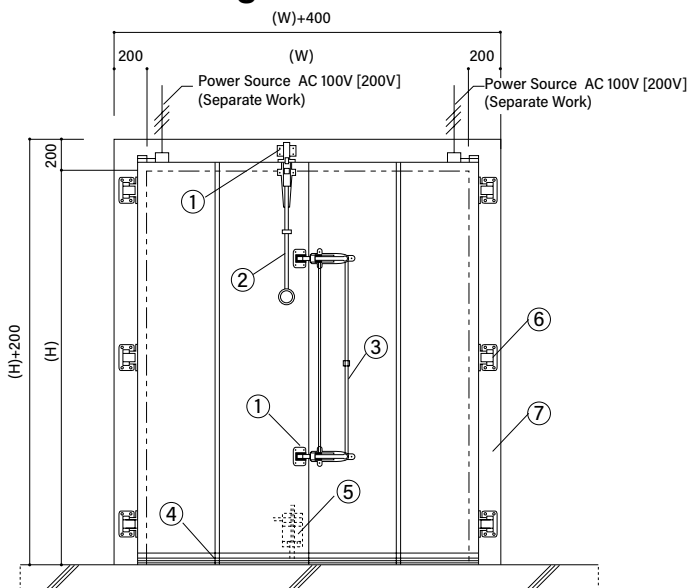
**This is the door with high heat-insulation capability, and special sealing handle that delivers a stable cooling system.**

The overlap door is designed to be the human main passage for cold storage area. We injected the insulation without leaving any gap, and use special sealed handle, allowing more stable heat-insulation performance. Also, by installing additional heater around the seal, overlap door can be use for freezer room.

## Specifications

Surface	SUS304, Chrome Colored				
Insulation	Solid Urethane-foam				
Frame Material	Wood-based				
Insulation Thickness	50 mm	75 mm	100 mm	125 mm	150 mm
Temperature Range	+5 °C	+3 °C	-10 °C	-25 °C	-35 °C
Design Range	Side-Swing W 1,200 × H 2,200mm		Double-swing W 3,000 × H 3,200mm Single-swing W 1,500 × H 3,200mm		
Operations	Manual				
Door Heater	None	If room is below 0 °C. For inside/outside			
Optional	Door Closure				

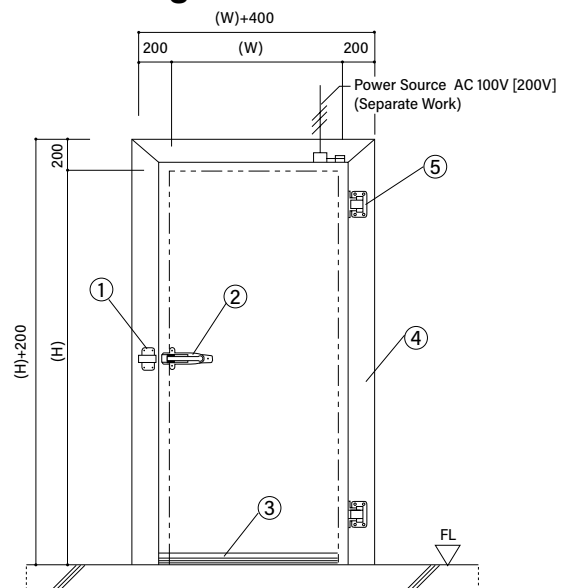
### Double-Swing



Power source needed only for model with Heater.

1 Metal Latch	5 Lower Latch
2 Top Latch Handle	6 Door Hinge
3 Parallel Handle	7 Base Frame
4 Rubber Seal	

### Side-Swing



Power source needed only for model with Heater.

1 Metal Latch	5 Door Hinge
2 Door Handle	
3 Rubber Seal	
4 Base Frame	



# OPTIONAL ITEMS

Enhance the working experience through several function and safety options.

## Windows

We provide several material for light ventilation : a layer of acrylic t.3 or mesh glass t5.8 for normal temperature door; and multi-layer glass with special rubber for insulation door.



Acrylic

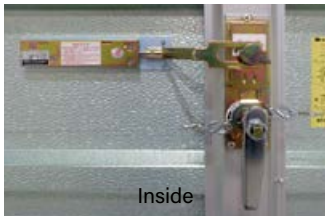


Mesh Glass

## Hydraulic Unlocking Device

### 1. Firekey (For Manual Door)

In the event of a fire, pressure of water from fire-truck hose will unlock the device. Applies to balance and chain doors



Inside



Outside

[Test by FESC Japan] No. 13-056-3, Date July 26, 2013.

### 2. Water Pressure Release (Electrical Door)

For the case of electrical door during emergency, put the fire-truck hose on the device. The water pressure will activate the emergency battery and drive up the door to open.



Both items #1 and #2 are performance grade products that have passed the test in accordance with the provisions of Article 5 of the Equipment Performance Assessment Regulations for Firefighting and Disaster Prevention by FESC, Japan.

## Safety Equipment

### ▶ Wire-out fall prevention device

When the wire being used is loosened or cut while the over door is moving or stopped in the middle, the arm part connected to the wire is activated and the blade eats into the guide rail, stopping the falling overdoor and preventing the fall accident.



### ▶ Photoelectric sensor (Electric overdoor)

It is a safety sensor that senses the optical axis of the sensor as an obstacle when a person or forklift blocks it.



### ▶ Tape switch (Electric overdoor)

Attached to the bottom of the overdoor. When detect a contact with an obstacles at the time of closure, we will ensure your safety.



When the truck is adring the platform, it mitigates the impact as a cushion material. Used to protect the body of buildings and trucks.

## D-Shaped Rubber Bumper

The cushion material when the truck is docking into a platform, help ease the impact and to protect both the building and the vehicle.



Hollow



Front  
Yellow-Strip



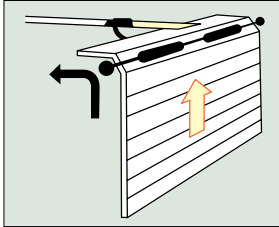
Solid



# Overdoor Moving Model

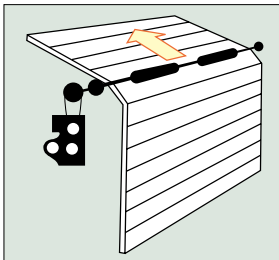
## ELECTRIC TYPE

Operates the door easily by using one button. If during closing the door hits an object, the torque limiter would turn back the motor, preventing pinch accidents. Switching to manual mode can be done instantly. There are two models of motor location, depends on the storage format.



### Trolley Type (For ST and LT)

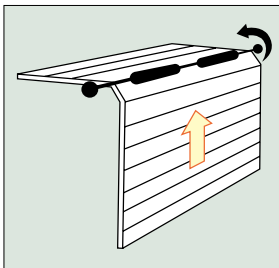
This type has the motor gear mounted on the rear-side of the rail. Then it drives the door through the trolley arms.



### Jack Shaft Type (For HT, VT, CT)

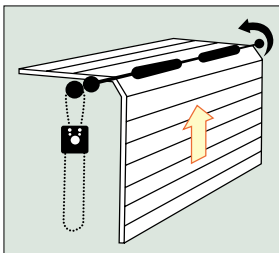
With the chain-drive mounted on the side, it help spins the torsion spring to open/close the door. The motor can be mounted on either side.

## MANUAL TYPE



### Balance Type (with Centre-lock)

Using the high-quality torsion spring which keeps the balance during door opening and closing. Gently lift the door panel, and it will quickly open. Then easily close by pulling the rope.



### Chain Type

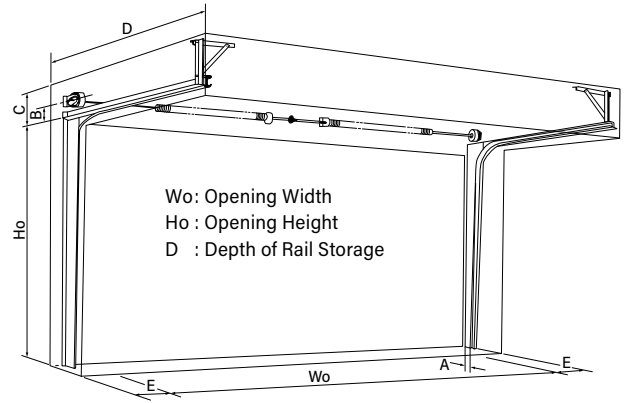
Sharing the principle of Balance type, with additional chain pulley. Easy and quick door operation is in your control despite weight or size.

### Chain Hoist

Overdoor with chain-hoist type is move together with the help of torsion spring as in balance type. Its moving lighter and faster than conventional shutter. Manage the door operation easily by hand, especially for tall opening case.



# Overdoor Storage Format



A : Rail Width  
B : Wire Drum

C : Top Clearance  
E : Side Clearance

	<b>ST (Standard Type)</b> The default and the most widely used rail type. Door goes up sliding to the ceiling, and stay horizontally.
	<b>LT (Low-head Type)</b> Suitable for room with low ceilings. Double-layer side rails are utilized. Storage depth is longer than the standard model.
	<b>HT (model Highlift)</b> Designed for room with tall ceilings, yet having limited horizontal depth/length. The door will be stored partially parallel to both wall and ceiling.
	<b>CT/HCT (model diagonal)</b> This storage model is following the building slope roof. The rail slope level can be adjusted between 5° - 26.5° range.
	<b>VT (model vertical)</b> Made for buildings with tall ceilings. The door is moving up vertically, which allows more space under ceiling.

