

SHIP'S WINDOWS & DOORS



Square Window
Side Scuttle

Window
Wiper



Sun Screen



Clear
View
Screen



Door
Hatch



Joiner
Door



Introduction

*Kwangwoon will create a beautiful harmony creating
the future on the world's stages*

Founded in 1989, Kwangwoon has continually developed in the field of Marine Equipment Manufacturing.

We mainly produce and sale many kinds of windows and side scuttles including fire resistant window.

We not only produce windows but C.V.S, Hatch, AL door and AL equipment.

Kwangwoon provides you with products that meet the standard requirements such as ISO, JIS & BSMA.

And we can also take special orders according to client request.

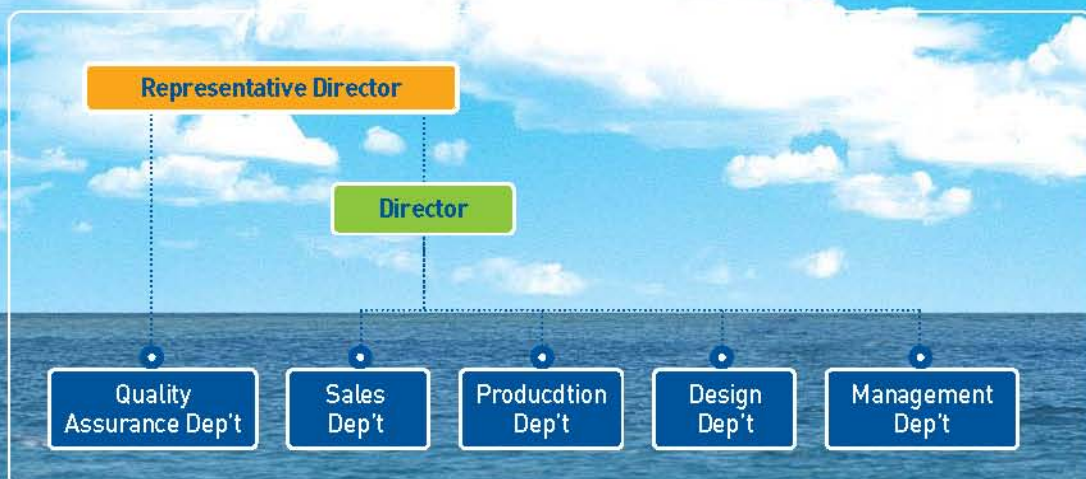
Kwangwoon are trying to extend market by improving product quality through continuous technical development and investment in plant & equipment.

We will make every possible effort to improve the product quality and enhance services to all customers.

Representative Director



Organization



History

["Since 1989, Kwangwoon"]

- 2008 Manufactured window & door for 1200ton class cruise ship.
Manufactured window & door for 999ton class cruise ship called 'Hyundai cruise ho'.
- 2007 Manufactured window & door for 999ton class cruise ship called 'Hallyeosudo ho'.
Joined in The Busan Marine Equipment Association
- 2006 Obtained Welding Procedure Specification (KR)
Manufactured the Al. house and car ramp of 1,000 ton class passenger ship called NARI .
- 2005 Obtained ISO9001 system (DNV)
- 2004 Incorporated Kwang-Woon Co., Ltd.
- 1997 Obtained Certificate for side scuttle (KR)
- 1996 First supplied DSME with windows.
- 1995 Sold windows and side scuttles in southeast Asia Market
- 1993 Succeeded to manufacture C.V.S
- 1989 Established Kwangwoon Company



"We will provide the high standards necessary to meet customer satisfaction"

Vision

*Kwangwoon will create a beautiful harmony creating
the future on the world's stages*

Best Partner



Main Product

Square Window

- Welded opening square window
- Welded non-opening square window
- Bolted opening square window
- Bolted non-opening square window
- Horizontally sliding window
- Vertically sliding window
- Electric Heated window
- Fire resistant window

Side Scuttle

- Welded opening side scuttle
- Welded non-opening side scuttle
- Bolted opening side scuttle
- Bolted non-opening side scuttle
- Fire resistant side scuttle

Clear View Screen

- Weatherproof type
- Heated type
- Gas-tight type

Door

- Joiner door
- Sliding door
- Dog type door
- Quick acting type door

Hatch

- Dog type hatch
- Butterfly type hatch
- Quick acting type hatch

Sun Screen

- Roller blind type

Window Wiper

- Pantograph type
- Straight type



SQUARE WINDOW

>> WELDED TYPE

OPENING WINDOW



DIMENSION TABLE (unit : mm)

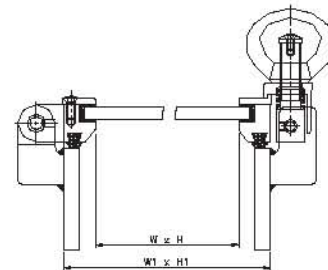
Nominal size	W1 × H1
W × H	(W + 48) × (H + 48)

Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc

S i z e According to Client request



- **Ventilation** : allowed
- **Application** : Mainly at the side of deck house.

- **Particularity** : Allowed to open in any directions.
- **Installation method** : Welding

NON - OPENING WINDOW



DIMENSION TABLE (unit : mm)

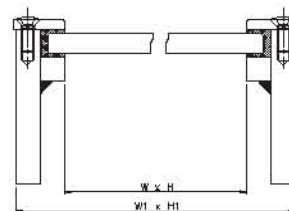
Nominal size	W1 × H1
W × H	(W + 48) × (H + 48)

Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc

S i z e According to Client request



- **Ventilation** : Not allowed
- **Application** : Mainly at the front side of deck house.
Most commonly used.

- **Particularity** : Used in case of navigation deck.
C.V.S attachment available.
- **Installation method** : Welding

BOLTED TYPE <<

OPENING WINDOW

DIMENSION TABLE (unit : mm)

Nominal size	W1 × H1
W × H	(W + 48) × (H + 48)

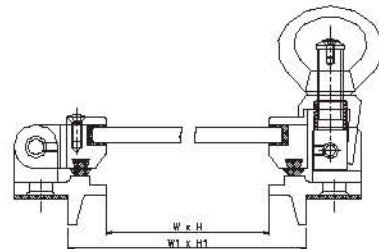


Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc

S i z e According to Client request



- **Ventilation** : allowed
- **Application** : Mainly at the side of deck house.

- **Particularity** : Allowed to open in any directions.
- **Installation method** : Bolted joint

NON - OPENING WINDOW

DIMENSION TABLE (unit : mm)

Nominal size	W1 × H1
W × H	(W + 48) × (H + 48)

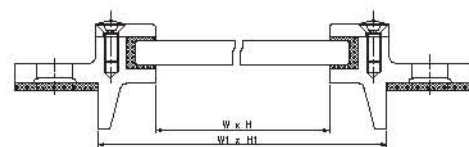


Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc

S i z e According to Client request



- **Ventilation** : Not allowed
- **Application** : Mainly at the front side of deck house.
Most commonly used.

- **Particularity** : Used in case of navigation deck. C.V.S attachment available.
- **Installation method** : Bolted joint

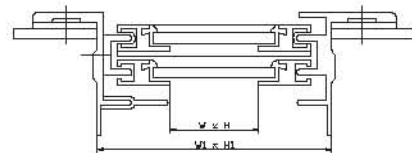
SLIDING WINDOW

>> HORIZONTAL TYPE



DIMENSION TABLE (unit : mm)	
Nominal size	W1 × H1
W × H	(W + 70) × (H + 70)

Standard	Kwang Woon
Material	Al.- alloy
G l a s s	Toughened, Double glazed, Laminated, etc
S i z e	According to Client request



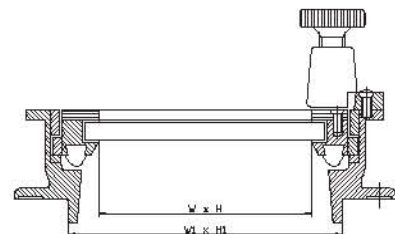
- **Ventilation** : allowed
- **Application** : Mainly at the side of deck house
- **Particularity** : Allowed to open in horizontally

>> VERTICAL TYPE



DIMENSION TABLE (unit : mm)	
Nominal size	W1 × H1
W × H	(W + 48) × (H + 48)

Standard	ISO, JIS, BSMA
Material	Al.- alloy or Brass & Steel
G l a s s	Toughened, Double glazed, Laminated, etc
S i z e	According to Client request



- **Ventilation** : allowed
- **Application** : Mainly at the side of deck house
- **Particularity** : Allowed to open in vertically

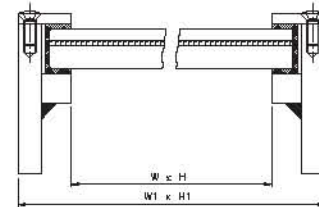
SPECIAL WINDOW

ELECTRIC HEATED WINDOW <<



DIMENSION TABLE (unit : mm)	
Nominal size	W1 × H1
W × H	(W+48) × (H+48)

Standard	ISO, JIS, BSMA
Material	Al.- alloy or Brass & Steel
G l a s s	Toughened, Double glazed, Laminated, etc
S i z e	According to Client request



- **Ventilation** : Not allowed
- **Application** : Mainly at the front side of deck house

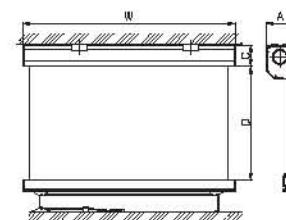
- **Particularity** : prevent window from freezing under cold temperature conditions

SUNSCREEN-ROLLER BLIND TYPE <<



DIMENSION TABLE (unit : mm)			
W(Max)	2000	2800	3500
D(Max)	2000	2250	3000
C	56	69	76
A	45	56	64

Frame Material	Al.-alloy
Screen Material	Sun reflective film
Screen Color	Gold, Silver, Grey, Bronze
S i z e	According to Client request



- **Application** : Mainly the side of decks.
- **Particularity** : Attach to windows for protection from the sun. Fix a sun screen pulling a stopper.

A60 CLASS WINDOW

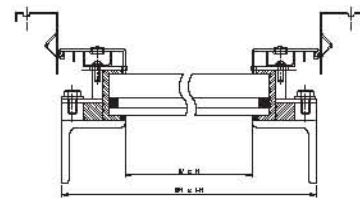
>> A60 CLASS FIRE RESISTANT WINDOW



DIMENSION TABLE (unit : mm)

Nominal size	W1 × H1
W × H	(W + 154) × (H + 154)

Standard	ISO, JIS, BSMA
Material	Al.- alloy or Brass & Steel
G l a s s	Toughened, Double glazed, Laminated, etc
S i z e	According to Client request



- **Ventilation** : allowed
- **Application** : Mainly at the side of deck house.
- **Particularity** : Allowed to open in any directions.
- **Installation method** : Welding

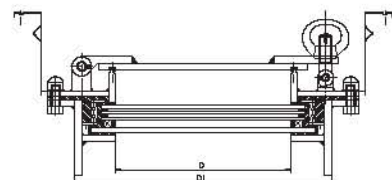
>> A60 CLASS FIRE RESISTANT SIDE SCUTTLE



DIMENSION TABLE (unit : mm)

Nominal Size-D	D1	Nominal Size-D	D1
250	394	400	544
300	444	450	594
350	494	500	644

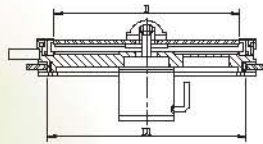
Standard	ISO, JIS, BSMA
Material	Al.- alloy or Brass & Steel
G l a s s	Toughened, Double glazed, Laminated, etc



- **Ventilation** : Not allowed
- **Application** : Mainly at the front side of deck house.
Most commonly used.
- **Particularity** : Used in case of navigation deck.
C.V.S attachment available.
- **Installation method** : Welding

CLEAR VIEW SCREEN

WEATHER-PROOF TYPE <<



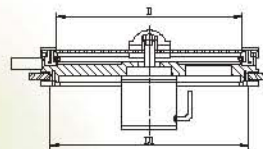
DIMENSION TABLE (unit : mm)	
Nominal Size-D	Glass Cutting Size-D1
250	276
300	326
350	382

Frame Material Al-alloy **Power** AC 110,220V / DC 12,24V

Motor Output 60W, 80W **R.P.M** 1900±200

- **Application** : Fixed windows in front of a wheel house
- **Particularity** : Secure field of vision in case of rain and snow

HEATER TYPE <<



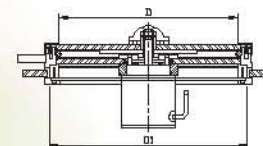
DIMENSION TABLE (unit : mm)	
Nominal Size-D	Glass Cutting Size-D1
250	276
300	326
350	382

Frame Material Al-alloy **Power** AC 110,220V / DC 12,24V

Motor Output 60W, 80W **R.P.M** 1900±200

- **Ventilation** : Not allowed
- **Uses** : LNG, OIL, CHEMICAL VESSEL

GAS-TIGHT TYPE <<



DIMENSION TABLE (unit : mm)	
Nominal Size-D	Glass Cutting Size-D1
250	276
300	326
350	382

Frame Material Al-alloy **Power** AC 110,220V / DC 12,24V

Motor Output 60W, 80W **R.P.M** 1900±200

- **Application** : at fixed windows in front of a wheel house
- **Particularity** : prevent the formation of dew, frost or fog and an inflow of gas because it is consist of a fixed glass with heater and a rotation glass

>> WELDED TYPE

OPENING SIDE SCUTTLE



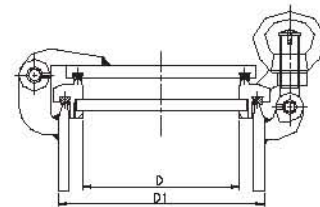
DIMENSION TABLE (unit : mm)

Nominal Size-D	D1	Nominal Size-D	D1
200	250	350	410
250	305	400	460
300	360	450	510

Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc



- **Ventilation** : allowed
- **Application** : at the low deck and at the side of deck house

- **Particularity** : endure the hydraulic pressure when the glass is broken
- **Installation method** : Welding

NON - OPENING SIDE SCUTTLE



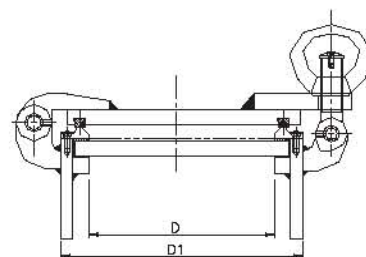
DIMENSION TABLE (unit : mm)

Nominal Size-D	D1	Nominal Size-D	D1
200	250	350	410
250	305	400	460
300	360	450	510

Standard ISO, JIS, BSMA

Material Al.- alloy or Brass & Steel

G l a s s Toughened, Double glazed, Laminated, etc



- **Ventilation** : allowed
- **Application** : at the low deck, Places to prevent an inflow of gas and water

- **Particularity** : endure the hydraulic pressure when the glass is broken
- **Installation method** : Welding

BOLTED TYPE <<

OPENING SIDE SCUTTLE



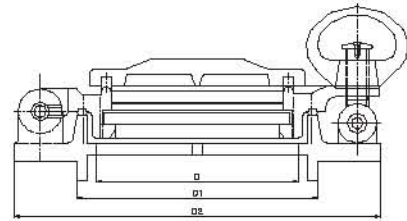
DIMENSION TABLE (unit : mm)

Nominal Size-D	D1	D2	Nominal Size-D	D1	D2
200	250	350	350	410	500
250	305	400	400	460	550
300	360	450	450	510	600

Standard ISO, JIS, BSMA

Material Al- alloy or Brass

Glass Toughened, Double glazed, Laminated, etc



- **Ventilation** : Allowed
- **Application** : at the low deck and at the side of deck house

- **Particularity** : endure the hydraulic pressure when the glass is broken
- **Installation method** : Bolted joint

NON - OPENING SIDE SCUTTLE



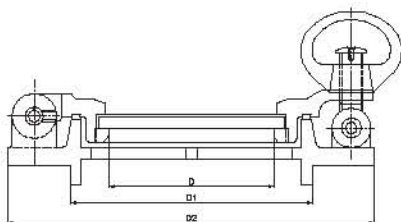
DIMENSION TABLE (unit : mm)

Nominal Size-D	D1	Nominal Size-D	D1
200	250	350	410
250	305	400	460
300	360	450	510

Standard ISO, JIS, BSMA

Material Al- alloy or Brass & Steel

Glass Toughened, Double glazed, Laminated, etc



- **Ventilation** : Not allowed
- **Application** : at the low deck , Places to prevent an inflow of gas and water

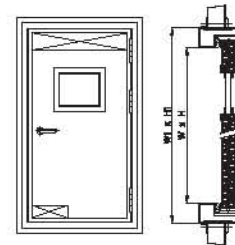
- **Particularity** : endure the hydraulic pressure when the glass is broken
- **Installation method** : Bolted Joint

>> JOINER DOOR



DIMENSION TABLE (unit : mm)	
Nominal size	W1 × H1
W × H	(W + 70) × (H + 70)

Standard	Kwangwoon
Material	Al.- alloy or Stainless steel & Steel
Type	With window / Louver
Installation method	Bolted / Welded
Size	According to Client request



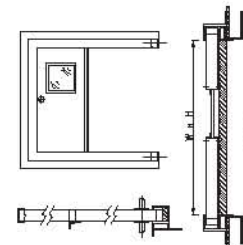
- **Application** : Mainly adhesive type. Mostly used in any position
- **Particularity** : A hinged opening and shutting door. With Window or With Louver according to uses.

>> SLIDING DOOR



DIMENSION TABLE (unit : mm)	
Nominal size	W1 × H1
W × H	(W + 100) × (H + 50)

Standard	Kwangwoon
Material	Al.- alloy or Stainless steel & Steel
Type	With window
Installation method	Bolted / Welded
Size	According to Client request



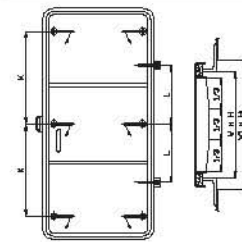
- **Application** : Insufficient places to attach doors
- **Particularity** : A sliding door

DOG TYPE DOOR <<



DIMENSION TABLE (unit : mm)	
Nominal size	W1 x H1
W x H	(W + 70) x (H + 70)

Standard	Kwangwoon
Material	Al.- alloy or Brass & Steel
Type	6Dog / 4Dog / 2Dog / 1Dog
Installation method	According to Client request
Size	According to Client request



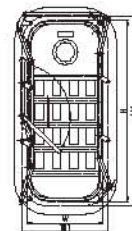
- **Application** : Mainly engine rooms used
- A dogged outdoor calibration. Usually 4 or 6 dogs attached. Lock by turning a dog clockwise a right angle and unlock by turning a dog counterclockwise a right angle.

QUICK ACTING DOOR <<



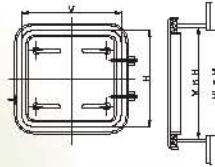
DIMENSION TABLE (unit : mm)	
Nominal size	W1 x H1
W x H	(W+100) x (H+100)

Standard	Kwangwoon
Material	Al.- alloy or Stainless steel & Steel
Type	Navy Type / Commercial Type
Installation method	Welded
Size	According to Client request



- Mainly used for naval ships
- Operate 8 clips at a time just turing 1 handle. Able to open and shut within a short time

>> DOG TYPE HATCH

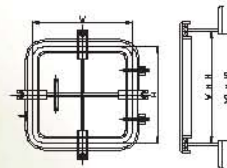


DIMENSION TABLE (unit : mm)	
Nominal size	Cutting Size
W × H	(W - 20) × (H - 20)

Standard	ISO, JIS, BSMA	Installation method	Welded / Bolted
Material	Al- alloy or Steel	Size	According to Client request

- **Application** : On the deck
- **Particularity** : Lock by turning a dog clockwise a right angle and unlock by turning a dog counterclockwise a right angle. It can be open and shut inside

>> BUTTERFLY TYPE HATCH

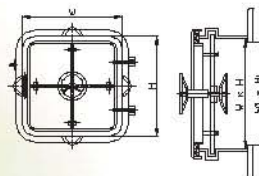


DIMENSION TABLE (unit : mm)	
Nominal size	Cutting Size
W × H	(W - 20) × (H - 20)

Standard	ISO, JIS, BSMA	Installation method	Welded / Bolted
Material	Al- alloy or Steel	Size	According to Client request

- **Application** : On the deck
- **Particularity** : Fix a hatch cover with a butterfly type nut. It can't be open and shut inside

>> QUICK ACTING TYPE HATCH



DIMENSION TABLE (unit : mm)	
Nominal size	Cutting Size
W × H	(W - 20) × (H - 20)

Standard	ISO, JIS, BSMA	Installation method	Welded / Bolted
Material	Al- alloy or Stainless steel & Steel	Size	According to Client request

- **Application** : On the deck, Mainly naval ships used
- **Particularity** : Attached a handle on top of a hatch cover. Able to open and shut by turning the handle within a short time.

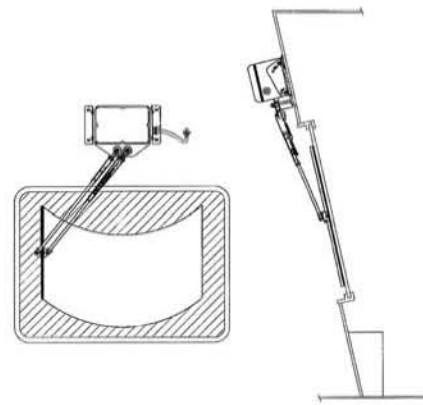
WINDOW WIPER

PANTOGRAPH TYPE <<



- **Application :**
Fixed windows in front of a wheel house
- **Particularity :**
Moving a blade in a fanwise motion to remove rainwater

Pantograph Type (Single/Twin blade)			
	Constant	2 - Speed	Variable
Stroke(max)	1800	1800	1800
Arm(max)	1000	1000	1000
Blade(max)	1000	1000	1000
Speed	35 cycle/min	Low 35 ± 5 cycle/min high 55 ± 5 cycle/min	
Voltage	AC 110V/220V, 1ø/3 ø 50Hz/60Hz		
Weight	Abt. 7kg	Abt. 7kg	Abt. 7kg

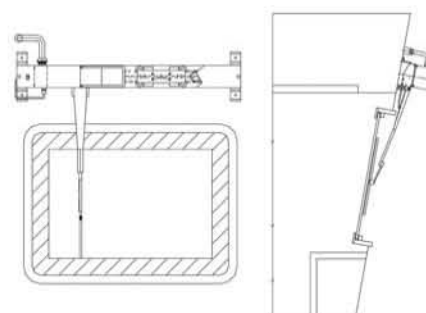


STRAIGHT TYPE <<



- **Application :**
Fixed windows in front of a wheel house
- **Particularity :**
Moving a blade in a parallel motion to remove rainwater

Straight Type (Single/Twin blade)			
	Constant	2 - Speed	Variable
Stroke(max)	1100/2100	1100/2100	1100/2100
Arm(max)	1000	1000	1000
Blade(max)	1000	1000	1000
Speed	32 cycle/min	Low 22 ± 5 cycle/min high 32 ± 5 cycle/min	16 ± 5 → 32 ± 5 cycle/min
Voltage	AC 110V/220V, 1ø/3 ø 50Hz/60Hz		
Weight	Abt. 20kg/20kg	Abt. 20kg/25kg	Abt. 20kg/ 25kg



A-60 CLASS FIRE RESISTANT WINDOW

>> OBSERVATIONS FOR TEST SPECIMEN



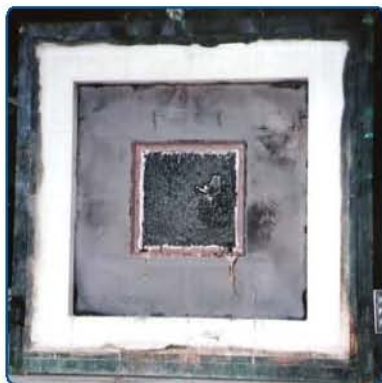
1 Ready for fire test (0min)



2 Test commenced (1min)



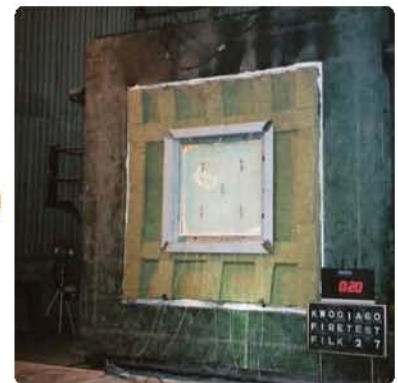
3 The pressure glass toward the furnace cracked (8 min)



6 After hose stream test



5 The test was terminated (60min)



4 The first fire resistance glass collapsed (20min)

CERTIFICATION

