

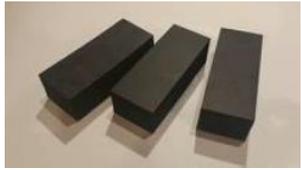
IRUV CUT COAT H-SP

# Application Manual

2021.03.01



# Preparation (Tools)



Cleaner Pad



Cleaner Buff



Masking tape with Plastic sheet



4mm Masking Tape



15mm Masking Tape



40mm Masking Tape



Scraper with blade



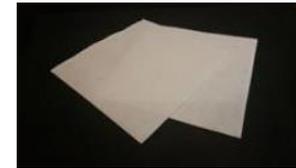
Spray Bottle



Aluminum Foil



Tray



Non-oven fabric



Glass Rod



Mixing CUP



SKETCH Roller



Roller Handle



Glass Cleaner



Primer



IRUV H-SP/ Hardner



Remover



Other  
Tools



Temperature and  
humidity meter



Electronic scale



Squeegee



Squeegee for cleaning



Kitchen Paper Towel



Bottle refill



Scale



calculator



Oil for Roller handle

Tools of consumables should be prepared on the day before the application. In addition, blue tarp and stepladder are required by the situation.

# Points before application

## ◆Container◆

- ① Refill Container for Glass Cleaner.....Anything, As long as it is not damaged by dropping.
- ② Refill Container for Primer.....Polypropylene (PP) or polyethylene (PE) Container.  
※The container is useful if you purchase a cap, such as the right photo.
- ③ Cup for mixing.....Polypropylene (PP) or polyethylene (PE) Cup.  
※Disposal Cup
- ④ Spray Bottle.....Anything, As long as it is not damaged by dropping.
- ⑤ Stirring Rod.....Glass Rod

## ◆Conditions◆

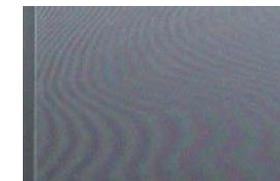
- ① Temperature hygrometer put two places, close to window and little distance from window. Please check during the application. ※If the humidity is high, adjust with air conditioning.
- ② Glass surface temperature should be from 5 °C to 35 °C. Humidity is less than 70% (Less than 60% is ideal)
- ③ Can not be applied if It comes out a condensation on the glass. However, turn on the air conditioning and dehumidifier. It is possible to apply if condensation goes away at least a whole day. ※Condensation occurs after application. The coating film contains moisture. Then it is clouded as right picture.
- ④ Wind of Air conditioning should not hit directly to the coating surface during the coating application. Please control the wind.  
※If coated surface hit the wind, then surface will dry and can not be well-leveling.
- ⑤ Working space is necessary at least 1m width from window.  
※The space depends on how you work. The bigger space demands when you use stepladder.
- ⑥ Before application, please confirm there is no distortion and no rainbow color on the glass.  
※It is difficult to confirm after application without peeling the coating.
- ⑦ Since it is a coating, some dust will adhere to the coating film, so be sure to inform the customer in advance.



cap



③ Clouded Coating



⑥ Rainbow Color

interference pattern  
stripes

# Step 1 Preparation

## ● Tools



Masking Tape



15mm Masking tape



Scraper with blade



Spray bottle



Kitchen Paper Towel

With plastic sheet

### 2) Covering



### 2) Covering the sealing



### 3) Scraper(Take off the dust)



- 1) Covering the floor for placing the tools ( with tarpaulin)
  - 2) Covering floor, bottom of window glass and surroundings ( with Masking tape with plastic sheet and 15mm Masking Tape)
    - ※Widely cover them to protect the adhesion of glass cleaner.
    - ※Avoid to drop the dirty water from Masking tape with plastic sheet.
  - 3) Apply 15mm masking tape to the caulking around the window as below picture.
    - ※Cover 2mm to the glass by Masking tape.
    - ※It is necessary to cover the caulking to avoid the adhesion of glass cleaner and come out the dirt from the sealing.
  - 4) Using the scraper to remove stain on the glass surface with spraying water.
    - ※If you do not spray water, there is a possibility that the scratched glass.
- ～• Time : 10min per 1sqm •～

# Step Preparation 1 -1 (Glass Cleaning)

## ● Tools



Cleaner Pad



Cleaner Buff



Spray Bottle



Squeegee



Kitchen Paper Towel



300ml container  
for glass cleaner

### 1) Glass Cleaner



### 2) Remove Glass Cleaner



### 3) Wipe off the paper towel



1) Put 5 ~ 10g / m<sup>2</sup> of glass cleaner to buff and polish while spraying the water to spread on the entire glass. Polish until the glass becomes hydrophilic state (do not repel the water).

※If there are the strong oil film parts, add the glass cleaner to polish.

※Edges of window require special attention (due to put silicone rubber fine particle dust or oil)

2) Wipe off the glass cleaner with squeegee.

※When the glass cleaner dry out, spray the water again and polish it.

3) Spray water Again. then Wipe off the glass cleaner.

※To confirm no remain of glass cleaner.

4) Wipe off any remaining water and glass cleaner with kitchen paper.

※ Since the kitchen paper that wipes the sash frame is likely to get dirty, use separate kitchen paper when wiping the glass surface and the sash frame.

5) Final checking whether there are no water repellent part or not.

※ Wet the kitchen paper and lightly wipe the glass surface to easily see where the oil film remains.

※\* If there is a part that is not hydrophilic, remove the oil film on that part again.

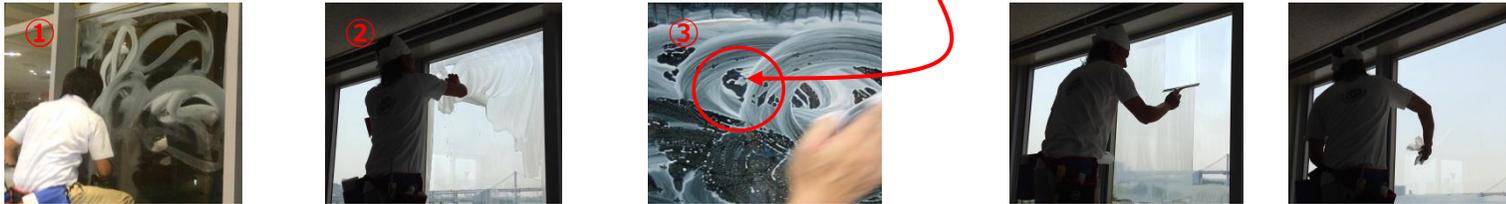
6) Remove the masking tape and wipe off the edge of windows with kitchen paper.

※this is because the masking tape may contain glass cleaner.

～・ Time : 10min per 1sqm ・～

# Step Preparation 1 -2 (Glass Cleaning)

## ●Points for the glass cleaning



①Put the glass cleaner to entire the glass. Picture 1.

②Spread the glass cleaner with spraying water with little pressure. Picture 2.

③See the picture 3. There is a remaining of oil film. Oil film such as red circle point. Polish with strong pressure.

※Please make sure to remove all oil film spots.

④If the glass cleaner dries out especially in the summer, use the pad with spraying water instead of using the squeegee.

Note : When it is a big glass, please divide the polishing process.

The remaining of oil film is completely removed.



When there are many parts of oil film, it is better to use the polisher machine to polish the glass.

※Only the corners of window glass needs to polish by hands.

# Step 2 - 1 Covering around the sash frame by Masking tape

## ● Tools



Masking tape with  
Plastic sheeting



4mm Masking Tape  
(selling only by Sketch)



40mm Masking  
Tape

- ※You can use 24mm or 30mm if these can cover window frame.
- ※We recommend to use 3M Products for masking tape.

1) 4mm Masking Tape

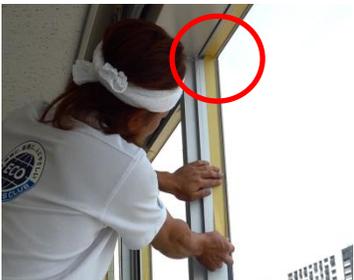


2) 4mm +30~40 mm  
Masking Tape



- 1) Cover the silicone part with 4mm Masking tape.
  - ※In order to suppress the oil coming out from silicone part.
  - ※When you remove IRUV, 4mm protects the any damage from remover.
- 2) Cover the window frame with 40mm Masking tape.
  - ※ Put a 40mm masking tape on the 4mm masking tape that has already been applied, overlapping about 2mm.
- 3) Apply the circle part ○ in the lower left photo at a right angle so that the corners are not rounded.( See the left picture, Circle part ○)
  - ※You can apply close to the edge.

3) Masking to the corner



4) Masking membrane



- 4) Cover the bottom with Masking tape with plastic sheeting

～ Time: 5min per 1sqm ～

# Step 2 - 2 Applying Masking Tape (Around the key)

## ● Tools



Thin Blade of scraper

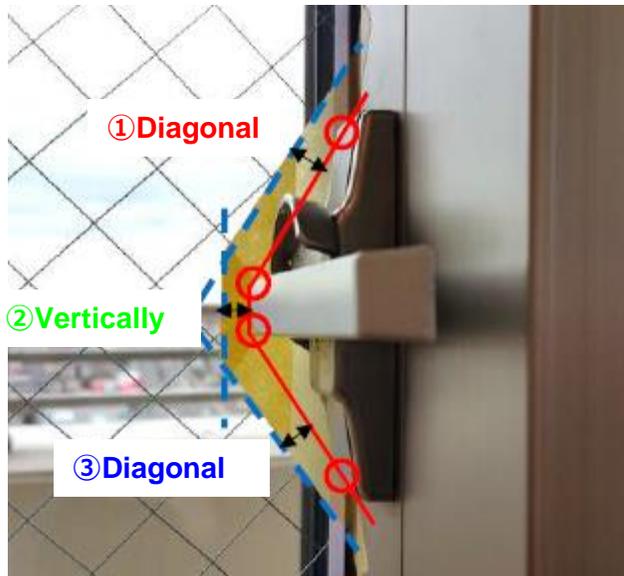


15mm Masking tape

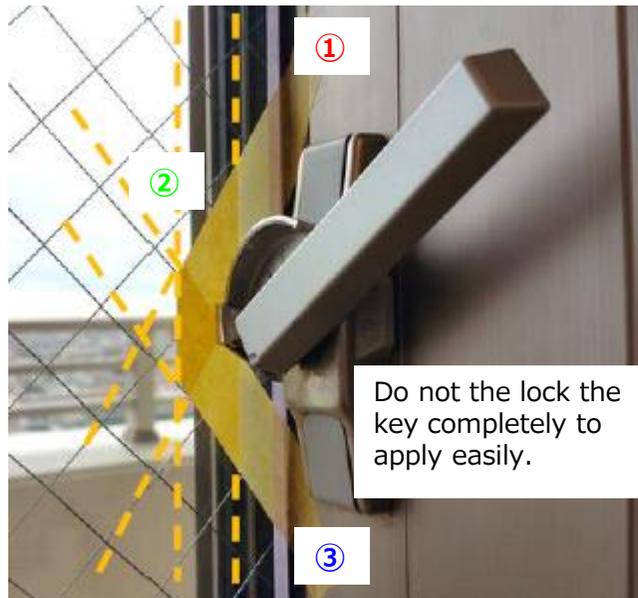


40mm Masking tape

- ※You can use 24mm or 30mm if these can cover key frame.
- ※Please use 3M Masking tape.



- 1) Apply to the masking tape around the key. Put 15mm Masking tape within 6mm from the red line – which makes the line of 4 red circle points ○.  
※Apply ①Diagonal (Up) ⇒ ②Vertically ⇒ ③Diagonal(Down).  
Please apply in order to take off the tape easily.
- 2) Cut off the over lined masking tape. ( The part of - - - )
- 3) Cover the whole key by 40mm Masking Tape.



Do not the lock the key completely to apply easily.



# Step 3 Primer

## ● Tools



Cleaner cotton



300ml container  
for primer liquid

### 1) Apply primer



### 2) lengthwise and crosswise



### 3) The edge of window



- 1) Put Primer to Cleaner cotton and apply to the whole window glass.  
※ Apply the primer (5 ~ 10ml / m<sup>2</sup>) evenly so that there is no uncoated area.

※ When you apply and appear the white part because the amount of liquid is large. It will be disappear when you apply IRUV Cut Coat.

※ If you see marks on the glass surface that look like the primer has been repelled after applying the primer, reapply the primer so that there are no areas where the primer is repelled.

- 2) Apply vertically and horizontally

※ Checking whether there is uncoated area or not.

- 3) Carefully apply it especially for around the sash frame because there is a possibility to has been stucked fine glue dust of Masking tape on the glass surface .

※ If there is glue on the masking tape or fingerprint marks on the surface of the window glass, wipe it off with a primer.

～ Time: 2min per 1sqm ～

- 4) Please Apply IRUV CUT COAT within two hours after the application of Primer. ※ Because it can avoid the adhesion of dust.

# Step 4 Blending (IRUV H-SP/HARDNER)

~· The guideline for mixing and removing dust from the medium hair roller is about 5 minutes. ~·

## ● Tools



IRUV H-SP/Hardener



Cup



SKETCH Roller



Roller Handle



Glass Rods



Electronic scale



Aluminum Foil



Tray



40mm Masking Tape



Scraper



Oil for Roller handle

Coating solution (90%)



Hardener (10%)



Removing dust



Soaking amount  
30g

- 1) Calculate glass coating 25g per 1 sqm and first roller soaking amount 30g per a new roller.
- 2) Formulation ratio/ IRUV Cut Coat coating agent 90%: Hardener 10%  
 ※ \* Please keep the compounding ratio in units of 1g of electronic scales.
- 3) Pour IRUV Cut Coat liquid to cup, then Pour Hardener into Main liquid.  
 Stir the mixed liquid for 20 seconds with glass rod.

※Example) 4pieces of 1.05sqm glasses. Main liquid 25g per x 1.05sqm×4 = 105g + Roller soak retention 30g=135g For the calculation, make 140g.  
 Main liquid 126g(90%) + Hardener 14g(10%) = 140g

- 4) Apply a small amount of lubricating oil to the roller handle (photograph of the tool photo ○ part) and wipe it gently with kitchen paper.  
 ※Rotation of the roller is improved.
- 5) Roller should be cleaned dust 3times by reverse side of masking tape.  
 ※If the roller hair is popping out, remove it with your hand.
- 6) Cover the tray with two layers of aluminum foil and weigh 30g of water retention by electronic weighing.

※Use up the liquid within 2 hours after preparation. (I can't put it back, but it's OK to add it)

# Step 4 -1 Applying IRUV Cut Coat H-SP (within 3minutes)

## Step1; Undercoating

- ① Roll the roller diagonally
- ② Apply some liquid to the window glass with vertical coating
- ③ Apply one round trip along the sash frames at the four corners.



① Put the required amount of liquid (25 g / m<sup>2</sup>) in the tray and let it suck into the special roller.

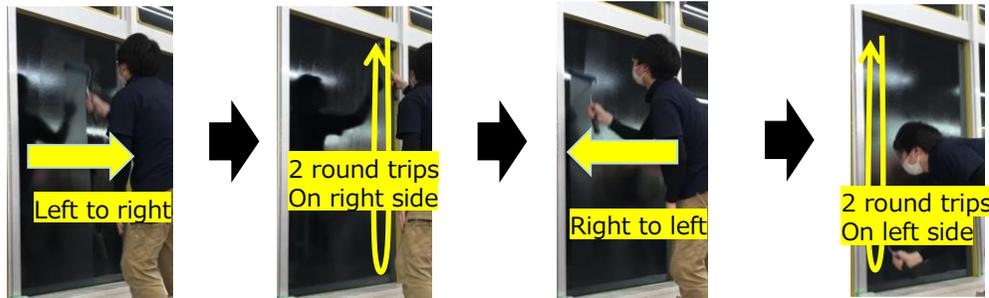
\* The amount (MAX) that the dedicated roller can absorb at one time is about 50g (2m<sup>2</sup>).

## Step 1 Undercoating

- ① Roll the roller diagonally  
\* Apply force and roll so that the line comes out (100% pressure).
- ② Roll the rollers in the vertical direction (50% pressure against ①) and apply some in a zigzag pattern.
- ③ Make one round trip each along the sash frames at the four corners. (50% pressure against ①)

## Step2; Vertical application (one round at least)

- ④ Go vertically from left to right.
- ⑤ When you come to the right sash frame, apply the sash frame vertically for at least 2 round trips.
- ⑥ Go back from right to left and erase the vertical lines on the rollers.
- ⑦ When you come to the left sash frame, apply the sash frame vertically for at least 2 round trips.



## Step 2 vertical coating (at least one round )

- ④ Apply vertically from left to right. ( 100% pressure )  
※ Apply so that there are no unapplied or faded points.
- ⑤ When you come to the right sash frame, apply the sash frame vertically for at least 2 round trips. (70% pressure)  
※ Apply so that there are no unapplied or faded points.
- ⑥ Go back from right to left and erase the vertical lines on the rollers. (70% pressure)  
※ Apply so that there are no unapplied or faded areas.
- ⑦ When you come to the left sash frame, apply the sash frame vertically for at least 2 round trips. (70% pressure)  
※ Apply so that there are no unapplied or faded areas.

Note) If the vertical line does not disappear after one round trip, apply it again.  
Please make a total of one and a half round trips.

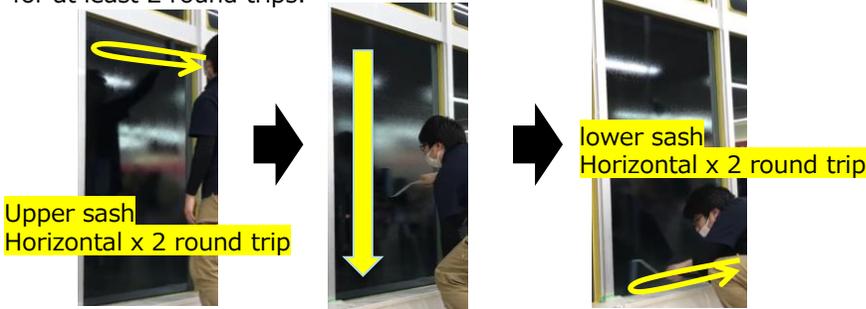
# Step 4 -2 Applying IRUV Cut Coat H-SP (within 3minutes)

## Step 3 Horizontal application (from up to down)

⑧Apply the upper sash frame horizontally for at least 2 round trips.

⑨Go from up to down

⑩Apply the lower sash frame horizontally for at least 2 round trips.



## Step 4 Final vertical application (from down to up)

⑪Apply the upper sash frame from left to right.

⑫Apply vertically from bottom to top. Pull it out just before it hits the sash

⑬ Check the finish after application is complete



## Step 5 Correction immediately after application (if there is a problem with the finish)



## Step3 Horizontal application (From up to down)

⑧Apply the upper sash frame horizontally for at least 2 round trips. (50% pressure) ※ Apply so that there are no unapplied or fainted points.  
\* Be sure to check by aligning the upper sash and the line of sight in parallel.

⑨Apply horizontally from top to bottom. (30% pressure)

※ Overcoating so as to no gap.

※The left and right sashes are already coated, so don't touch them

※Be careful not to add horizontal lines by increasing the pressure too much.

⑩ Make at least two round trips to the lower sash frame. (50% pressure)

※ Apply so that there are no unapplied or fainted points.

※ Be sure to check by aligning the lower sash and the line of sight in parallel.

## Step 4 final coating (Goes from down to up vertically)

⑪ Apply the upper sash frame from left to right. (0% pressure)

⑫ Apply vertically from bottom to top. (0% pressure)

Pull out the roller just before it hits the upper sash.

※ When it hits the upper sash, the roller is squeezed and the liquid drips, so pull it out before it hits.

⑬ Check the finish after application is complete

※Is the coating agent firmly attached to the sashes at the four corners? Isn't it faint?

※ Is there any blurring, repelling points due to remain oil film or silicone dust on the entire window glass?

## Step 5 Correction immediately after application

Note) Immediately after application, the following corrections can be made if the application is basically completed within 3 minutes, within 3 minutes in summer, and within 5 minutes in winter. If you overlook the problem, or if you can't fix it, you'll have to peel it all off and re-apply.

① Silicone repellent; With a scraper, peel off the coating film that is still wet and the silicon residue together, then apply a primer, and apply IRUV Cut Coat immediately.

②Remain Oil film; Apply a primer to the repelling points, then apply IRUV Cut Coat immediately.

③Faint point ; Roll the roller only at that point to eliminate the faint.

# Step 5 Finishing



One hour after the application, touch the masking tape and confirm the liquid did not remain your fingers. Take off the masking tape carefully with both hands.

(Time to tack free : Summer 30min ~60min / Winter 60min~90min)

※If the masking tape touches the coating surface, it will remain the mark. Please carefully take off the masking tape.

## ∞ Summary ∞

Before the actual site, please apply at least 40sqm at your office or home for your practice.

# Peel off for re-apply

## ● Tools



Any kind of Roller



Remover



Roller Handle



Tray

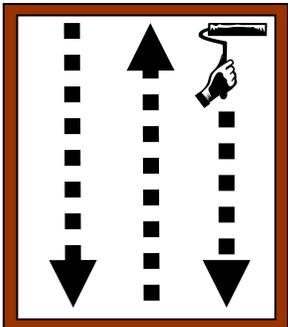


Kitchen Paper Towel



Scraper with blade

(Use Polypropylene "PP" or polyethylene "PE")



❖When the coating surface is not dried (immediately after the application, within 10 minutes)

①Wipe off the wet coating film with paper towel ,then remove by scraper with blade.

※Make sure not to cut the fingers by blade.

※The coating liquid will adhere to the cutting edge of the scraper, so be sure to wipe it off with kitchen paper towel.

② After peeling, use a glass cleaner to remove the oil film. The white liquid of the glass cleaner makes it easier to see the coating film left behind. At this time, the part that still has peeling residue is peeled off again with a scraper.

❖When the coating surface is harden.(More than 1 hour after application.)

①Use the roller handle and sponge for peeling, apply Remover to the entire coating.

※Apply only from top to down same as IRUV Cut Coat application process.

②After applying remover about one minute, peel off the film with the scraper blade.

※When the coating is still hard, apply remover again. Peel off with the scraper after one minute.(Repeat) Exchange blade of a scraper frequently. Otherwise, the cracked blade might be damaged to the glass.

③ After peeling, use a glass cleaner to remove the oil film. The white liquid of the glass cleaner makes it easier to see the coating film left behind. At this time, the part that still has peeling residue is peeled off again with a scraper.

●You don't have to measure the Remover. But it is about 20g per 1 sqm.

# Application of a big window (Vertical glass)

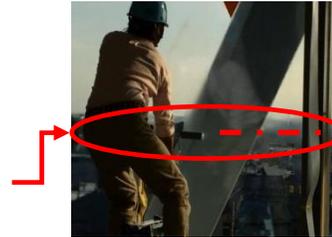


Ex) h3800mm\*w1200mm ※Divide the applied area if the glass is over h2500mm.  
One applicator is enough if there is no direct sun light. ( Divide three blocks)  
One applicator is enough if there is direct sun light. (Divide four blocks)  
For the beginner, two applicator can apply at the same time.  
(Divide two blocks. Below applicator apply the joint part)  
※All applicator should have the same technique level.  
※YouTube  
<https://youtu.be/iqOeLBqJGJo>

## ● Divided to two coated area



Apply to upper half area.  
※Mark the joint line.



Then apply to lower half vertically.  
※Apply over the joint line.  
※Make sure to erase the vertically lines.



Finish the application before the joint part get dry out.  
※Finish application from 40cm below the joint line to upper the joint line.



Apply over the joint line in parallel with little pressure.(40%)  
※When you erase the joint line, then keep applying to lower part in parallel for 40cm.



Apply vertically from the top on both sides to the center with little pressure. Do not stop the application on the center. Gradually apply lightly.  
Final Application. Apply from bottom to top in vertically.

# Application of a big window (Horizontally long glass)



Ex) h2100mm\*w6400mm

Divide the applied area if the glass is over w2000mm

※YouTube

<https://youtu.be/ulpZLp2Qbe0>

- Divided to three coated area. (Three applicators)



Follow the manual.  
Apply vertically, then parallel.



Then Apply to the joint part vertically with little pressure. (40%)  
Two applicators who are on both sides erase the joint line. ○



Apply vertically from the top on both sides to the center with little pressure. (30%)  
Do not stop the application on the center.  
Gradually apply lightly.  
Final Application. Apply from bottom to top in vertically.

- Vertical short horizontally long glass



Ex) h1200mm\*w3200mm

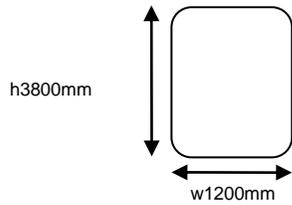
※Divide the applied area if the glass is over w2500mm.

One applicator is enough if there is no direct sun light.

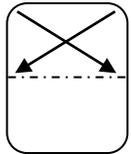
Two applicators are necessary if there is direct sun light. Divide two blocks)

Basically it is easy to erase the joint line of Vertical short horizontally long glass.

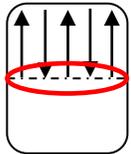
# Application of a big window (Illustrated)



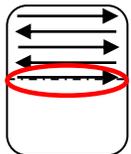
Ex) h3800mm\*w1200mm glass  
 Area : 4.56sqm  
 Amount of coating liquid : 25g/sqm  
 Total amount of coating liquid : 4.56sqm\*25g=114g  
 ※Not included water retention capacity of roller (30g)  
 Manual for the divided applied area.  
 ※Two divided area. Apply by one person.



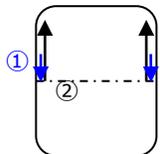
- ①Apply upper area(2.28sqm) first
- ②Apply X-sharped diagonally.(57g)  
 ※If you press harder (80%), the liquid will flow to the floor.  
 ※Press the roller with 70% of power.



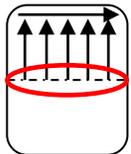
- ①Apply vertically with little pressure. (70% power)  
 ※Basically apply to erase the vertical line back and forth 1.5 to 2 times.  
 If you press the roller (70%), the line would not erase. Gradually apply lightly. (40 to 50%)
- ②Make the sample line of joint part.  
 ※When the joint line is straight, it is easy to erase it.
- ③Do not apply 3cm from the top.  
 ※Because the rollers is squeezed when it hits the top.



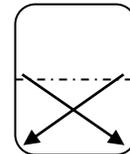
- ①Apply to the top part with little pressure (70%) where you did not apply. Back and forth 6 times.  
 ※When the roller of the horizontal line is visible, paint lightly. Back and forth.
- ② Then apply in parallel to the red ○ lightly. (30%)  
 ※Make sure not to touch the both sides. It will remain the mark.



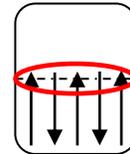
- ①Apply to the both sides which you did not apply yet.
- ②Apply from (①) to the line of (②). Lightly apply to reduce the remain lines. (30%)



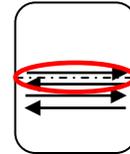
- ①Make one horizontal line to the top.
- ②Then apply from the red circle ○ to the top vertically.  
 ※Lightly apply such as just attached the roller. (10%)
- ③Apply from ○ until 10cm below the top.  
 ※Soft touch application. Do not touch the top. When the roller sponge touches the top edge, the liquid might come out from the sponge.



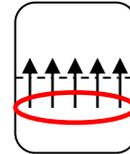
- ①Apply lower half area(2.28sqm).
- ②Apply X-sharped diagonally.(57g)  
 ※If you press harder, the liquid will flow to the floor.  
 ※Apply with little pressure.(70%)



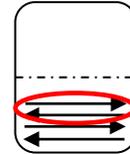
- ①Apply vertically with little pressure. (70%)  
 ※Basically apply to erase the vertical lines. Back and forth 2 times.  
 If you press the roller (70%), the line would not erase. Gradually apply lightly. (40 to 50%)  
 Apply little overwrapped to erase the vertical line.
- ②Make sure to apply 3cm from bottom to the red circle.  
 ※Make sure the line of the red circle.



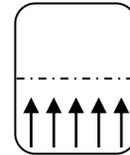
- ①After apply in vertically, then apply to the joint line in the red circle.  
 ※Apply back and forth. 4 times. (40%)  
 ※When you erase the joint line, then keep applying to lower part in parallel about 40cm. (30%)  
 ※Make sure not to touch the both sides. It will remain the mark.



- ①Application from 40cm below the joint line to upper the joint line.  
 ※Because the joint area will dry quickly.  
 ※Lightly apply.(10%)



- ①Apply the red circle ○ back and forth two times to erase the lines. then move to the bottom vertically. (30%)
- ②Apply with little pressure (70%) 3cm from the bottom. Apply back and forth 4 times.  
 ※ When the lines are obvious, please reduce the power.(30%)

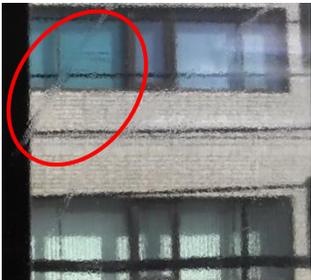


- ①Apply from the bottom to the red circle as above picture softly. (10%)  
 ※Rightly apply such as just attached the roller.  
 If you apply over the joint line where already starts to dry the surface, it might appear the distortion.

Note : In the summer time, the coating surface will dry quickly.

In this case, it might appear the distortion. You need to apply quickly compare than winter time. Or divided to smaller applied area. On the other hand, it will take time to dry when the weather is cold. One person might be enough for the application. Application depends on the weather and circumstance. So we require to train your applicators. At least the application of 2sqm glass.

# Failure cases

	<p>Case</p>	<p>The coating liquid could not adhere the glass because the preparation step is not perfect.</p>		<p>Case</p>	<p>The amount of coating liquid is not enough because you did not press the roller with enough power.</p>
	<p>Check</p>	<p>Make sure to the preparation step.</p>		<p>Check</p>	<p>Make sure to apply evenly. Press the roller with pressure ,especially the beginning of application. You can confirm the evenness during the application.</p>
	<p>Case</p>	<p>The coating repelled because the preparation step was not enough. Or you took the sealing ( Silicone) when you apply.</p>		<p>Case</p>	<p>Roll the sponge for a long time and there is the distortion on the coating surface.</p>
	<p>Check</p>	<p>Put the masking tape before the preparation step. Make sure not to remain oil film.</p>		<p>Check</p>	<p>Ideally, you complete the application within 3min for 1 sqm. ( it depends on the situation.)</p>
	<p>Case</p>	<p>The coating surface made whiten because of condensation during the night time.</p>	<p><b>Results</b></p> <p>All cases are necessary to re-apply.</p> <p>The key of successful application is preparation and circumstance.</p> <p>Also we recommend to apply with two people for the beginner applicators.</p> <p>※One person apply and another could check the coating states.</p>		
	<p>Check</p>	<p>Take 2 days for the application. On the first day, complete the preparation. On the second day, apply Primer and IRUV. Complete the application until noon and take the time for dryness.</p>			

# Points for the application

## ◆After the application◆

- ①Do not touch the window glass for one day after the application.
- ②Please notice the clients not to clean up the window glass for a month after the application.

※After one month, clean up with soft cloth with water or diluted neutral detergent.

Notice the cleaning method to the cleaning company. (Also notice not to touch the metal part of squeegee)

- ③Please notice the clients not to put the tape, sticker or poster on the coating surface.

## ◆Notes for the wired glass◆ Breakage of the glass can not be guaranteed due to the thermal cracking

- ①It could be broken or cracked by the thermal effect to the wired glass.

It does not matter whether coated or non coated. ※Since the metal and glass of the expansion rate is different.

## ◆Notes for the application on the window film◆

- ①When you apply on the window film, please change the roller every 5 to 7 sqm application.

※The coating surface might be cloudy gradually when the resin of film melt and continue to accumulate to the roller.

There might be the part of repellent the coating because the underlying process is only by alcohol.

## ◆Notes for the storage◆

- ①The coating agent does not remain open container lid since the curing reacts with moisture in the air. In addition, the coating agent, be stored in a cool and dark place.

※Do not storage on car trunk or in the refrigerator (there is a risk of deterioration.)

## ◆How to measure the glass size◆

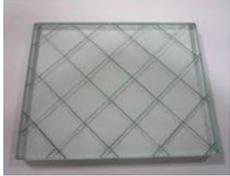
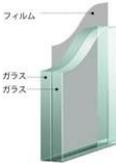
- ①Area is calculated to two decimal places (rounded to two decimal places)

Ex1)  $1360\text{mm} \times 1200\text{mm} = 1.632\text{m}^2$ , so it's  $1.63\text{m}^2$  / Ex2)  $1360\text{mm} \times 1210\text{mm} = 1.6456\text{m}^2$  so it's  $1.65\text{m}^2$ .

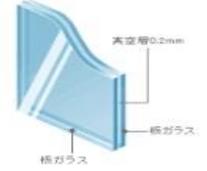
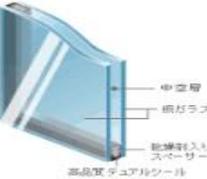
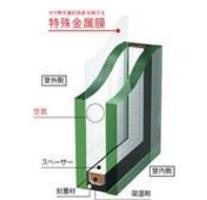
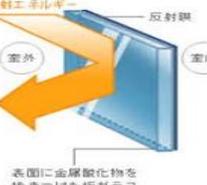
- ②The amount shall be to the nearest 1 (rounded to the first decimal place less)

Ex1)  $1.63\text{m}^2 \times 25\text{g} = 40.75\text{g}$  so it's 41g. / EX2)  $1.65\text{m}^2 \times 25\text{g} = 41.25\text{g}$  so it's 41g.

# Notes by Glass Type①

Type of glass		Features	Points to remember
Float Glass		<p>—Common transparent plate glass.</p> <p>Various sizes and thickness.</p> <p>It is used in a variety of locations.</p>	It is possible to apply from inside and outside.
Figured Glass		<p>One side of the glass is uneven, opaque glass.</p> <p>Such as a bathroom and washroom, are suitable to cut-off the sight from the outside.</p>	<p>It can be applied to the uneven surface.</p> <p>However, it can not be peeled off after the application.</p>
Wired Glass		<p>Metal mesh or metal wire is enclosed into a glass.</p> <p>Fire protection and shatterproof purpose.</p> <p>There is a transparent or opaque glass, the shape of the mesh are several kinds.</p>	<p>There is a possibility to occur the heat cracking after the application. Mainly winter dawn (east side). The heat cracking occurs when the tension exceeds the allowance because the temperature difference between the areas which enter the direct sunlight and not is increased.</p>
Paired Glass		<p>Sandwiching the film between two sheets of plate glass, it was bonded by applying heat and pressure glass.</p> <p>Not scattered even when the crack. When the object is impacted to the glass, it is less penetration than the float glass of the same thickness.</p>	Because of the film in the glass, there is a possibility to occur the heat cracking.
Heat absorbing glass		<p>It is added slightly the metal component which makes the colored glass.</p> <p>By absorbing solar heat, reduce the amount of transmitted heat.</p>	It is possible to apply from inside and outside.

# Notes by Glass Type②

Type of glass		Features	Points to remember
Vacuum Glass	 <p>真空層0.2mm 板ガラス 板ガラス</p>	<p>Vacuum is to make a vacuum layer between two sheets of glass from a scientific principle that does not conduct heat, it exhibits high thermal insulation performance about 4 times of a single and 2 times of the multi-layer glass.</p>	<p>It is possible to apply from inside and outside.</p>
Double-pane Glass	 <p>中空層 板ガラス 板ガラス 高品質デュアルレイヤー スペーサー</p>	<p>Enclosed dry air between two glass sheets. This increases the heat insulating effect. Characterized by high thermal insulation and prevention of condensation</p>	<p>It is possible to apply from inside and outside.</p>
Low-E Glass	 <p>特殊金属膜 ガラス ガラス スペーサー 密封材 密封材</p>	<p>Low-E glass, which was coated by a special metal film on one side glass surface of the multi-layer glass.</p>	<p>Apply to the glass which is not coated by special metal film. Irregularly reflection such as color differences or stripe lines occurs by the light of fluorescent lamps at night time. Inform your customer before the application.(P3)</p>
Heat reflecting glass	 <p>反射膜 室外 室内 表面に金属酸化物を 焼きつけた板ガラス</p>	<p>A metal oxide is adhered on the surface of the glass, to reflect solar radiation. However, the reflected solar remains in the ground, there is also a problem of causing heat island phenomenon.</p>	<p>Apply to the glass which is not coated by special metal oxide. Note that the metal film can be taken easily by oil film up! Irregularly reflection such as color differences or stripe lines occurs by the light of fluorescent lamps at night time. Inform your customer before the application.(P3)</p>
Toughened Glass		<p>It is rapidly cooled after heating the float glass at about 700 °. Compared to same thickness of float glass, there is three times of the resistance to wind pressure strength. If you break it, broken pieces are granular.</p>	<p>It is possible to apply from inside and outside. Irregularly reflection such as color differences or stripe lines occurs by the light of fluorescent lamps at night time. Inform your customer before the application.(P3)</p>