

The Laminated Process Instruction for Smart PDLC Glass

Switchable PDLC Film Storage:

For roll type film, put on shelves like pictures:

For sheet type, flat on table;

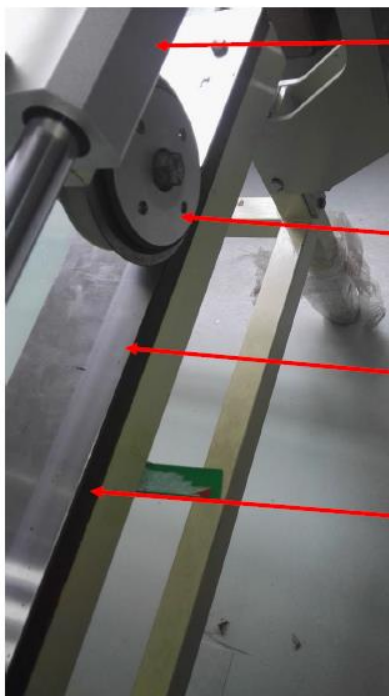
Environment: -10 – 50°C ,indoor ,dry air;



Switchable Film prepare:

Based on the project size list, cut the film, normally the film smaller about 5-6mm than glass size, for example: smart glass final size:1000*1000mm,the film suggested about 995*995mm,each side, film smaller about 2.5mm than glass;

Use the roller cutter like the following pictures, if you have no that, pls make line on film, then use scissor to cut, don't use knife;



Use the Bearing guide



Use the Rolling Cutter,maybe different size,but same structure



Use the Metal or Plastic plate to press the PDLC film when cutting process, avoid the film move



The black Metal Base Plate, must be flat and no easy deformation, let rolling cutter with this metal plate to coordinate as scissor

Make busbar on film:

see the Busbar Instruction file;

EVA Film Specification:

- 1.Low temperature, our PDLC film max temperature:120degree, EVA production meet that;
- 2.Neutral type,no acid or other corrosive, otherwise will damage the PDLC film;
- 3.Zero shrink, or lowest shrink;
- 4.High transparent, lowest haze;

Laminated Process:

1.Clean glass and prepare the PDLC film:

Pls check and clean the glass, and inspect the PDLC film with power;



2.Assemble the glass,EVA film and PDLC film together;

The smart glass structure: Glass+EVA+PDLC film+EVA+Glass,let the pdlc film in middle of EVA, leave the space same for each side;

For glass you can use the tempered glass, also you can choose low iron glass or normal clear float glass;

About EVA film, normally we use 0.76mm thickness;



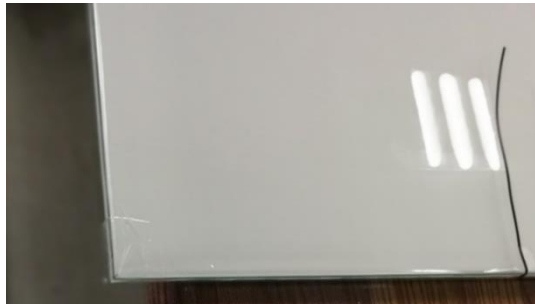
Note:

1.PDLC film don't suggest to use PVB film, some material of PVB maybe damage the PDLC film;

2.After finish the assembling the smart glass,don't need pass the Pre heating prepressing process like PVB;

3.If you use the tempered glass, the glass can't curved much, the flatness should be more than 0.3

4.Use High temperature adhesive tape to seal all side of glass:



5.Put the assembled smart glass in vacuum bag, use the wood rod to surround the glass ,it would prevent the smart glass move during the laminated process, then close the bag, keep -0.1Mpa;



6.Move into the laminated furnace or Autoclave:



Note:

1.pls check the following laminated process datasheet, you need adjust based on your current EVA film specification;

2.Our PDLC film max laminated temperature:120 °C;

3.When you use the Autoclave, In addition to the negative pressure exerted on the glass, the positive pressure applied outside can not exceed 0.25Mpa;

4.when you use Autocave,pls let the smart glass flat in autocave, don't be erect;

6.Remove the excess EVA glue from the glass edge with a blade;

7.Package:

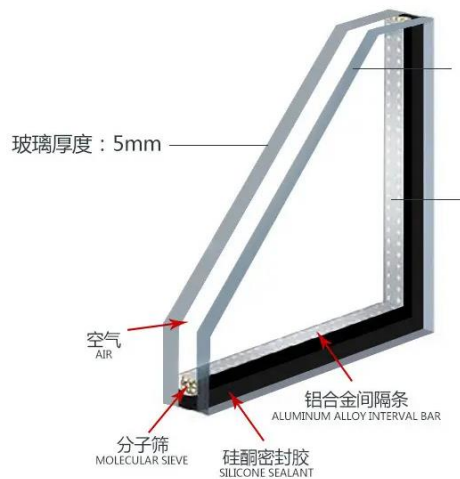
The bottom must use soft rubber material, can't use hard material, like mental, rock and so on;



Insulated Glass Production Process:

The production process is same with normal IGU glass process, just be careful for the silicone sealant:

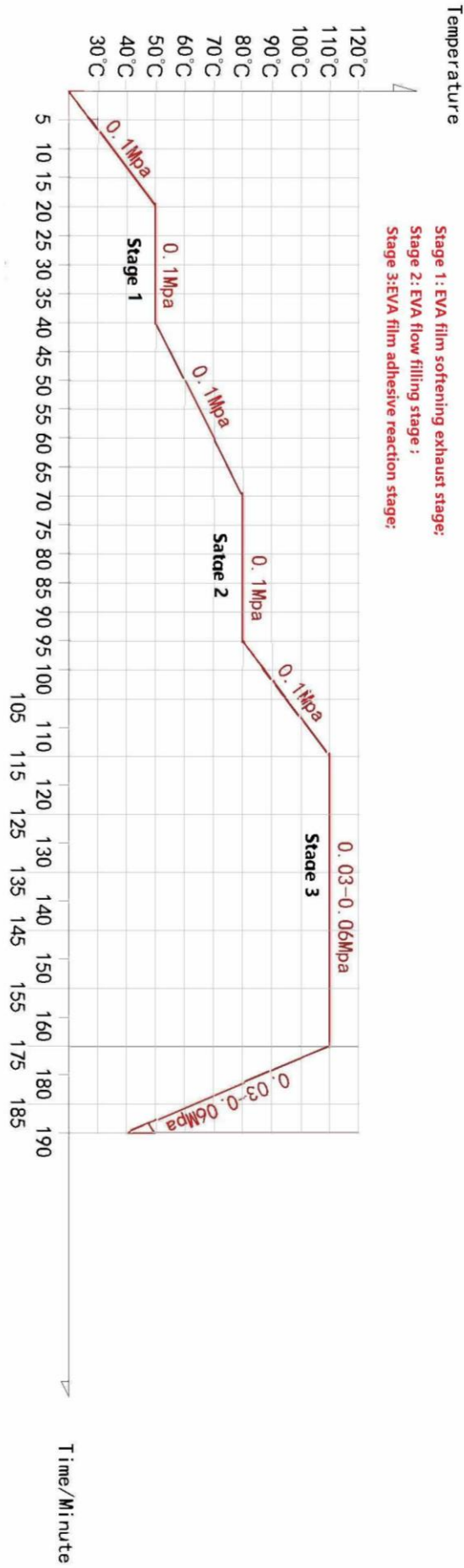
1. For the silicone sealant, must use two component silicone sealant (*suggest use Dow Corning 993N*), and increase the curing agent 20% more, let the sealant can dry soon, don't use single component silicone sealant, because the single component silicone adhesive shrink dramatically and damage the PDLC film;



2. after install the smart glass IGU glass into frame, use our special neutral silicon to seal the two side of glass, this will prevent water into and damage the smart glass;



Attached laminated process datasheet:



Note: when laminated , the outside environment keep high temperature and pressure, on the same time, do vacuum pressure on the glass from inside, the vacuum pressure 0.1Mpa;

Note 2:when you design your datasheet,you need know your EVA film three key temperature:Softening temperature,Optimum temperature of flow ,Adhesive reaction temperature ,you can adjust the datasheet based on your EVA film specification;

Note 3:when you use autoclave to lamianted PDLc film, In addition to ensuring the vacuum bag to maintain 0.1 Mpa negative pressure, autoclave positive pressure can not exceed 0.25Mpa, otherwise the positive pressure will damage the PDLc film ;

Note 4:For curved smart glass,normally the time of stage 1, stage 2 and stage 3 should be added about 15min,you can adjust based on your EVA and machine;