

Glass in buildings : Design and Application
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Lecture - 37
Interior Glazing Program

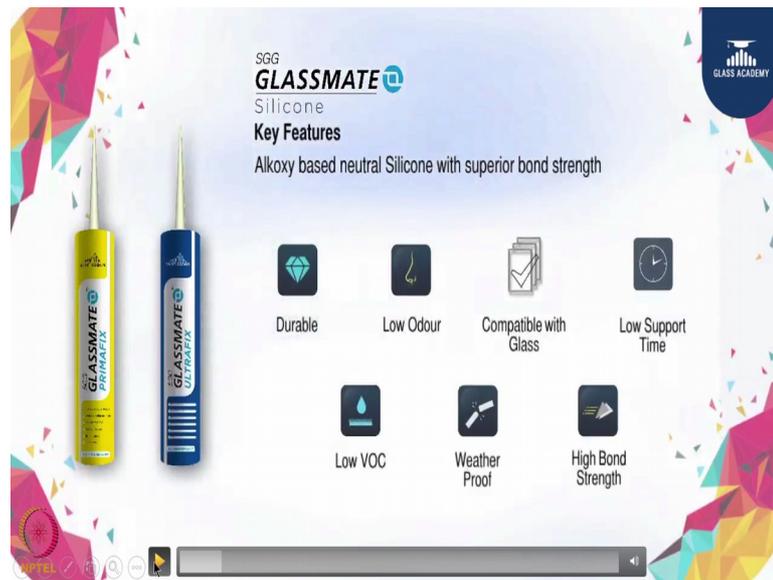
So, we will go through the application procedure for application procedure. I will take you through a video which will explain in detail that how to go ahead with the application part.

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The slide, titled "Application Procedure", features a blue background with a white wave pattern. In the top left corner, there is a logo for "GLASS ACADEMY" and an NPTEL logo in the bottom left. The main content consists of three bullet points, each accompanied by a small diagram of a glass panel with silicone beads. The first bullet point states: "• For 4 mm glass, apply silicones beads maintaining a 250 mm length between each row." The second bullet point states: "• For 6 mm glass, apply silicone beads maintaining a 160 mm length between each row." The third bullet point states: "• For 8 mm glass, apply silicone beads maintaining a 125 mm length between each row." The diagrams show a grid of glass panels with red lines indicating the placement of silicone beads.

As you can see here there are different standard for different thickness of classes as like; you can see in 4 mm of class if you are going to fix it with the help of silicone there must be a gap of 250 mm in between two silicones beading; if the classes of 6 mm, then the gap in between two beadings must be of 160 mm. If glasses of 8 mm then the gap in between these two beading should be of 125 mm means, higher the thickness lower the gap. So, if thickness is higher we will decrease the gap in between silicone beading to hold the glass in a better way. So, we will go through the video where we will see how this application is being done with the help of silicone.

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So, you can see here the silicone which is going to be use here, which we are going to use here the first thing it is low odour, compatible with glass, low support time, then higher bond strength and low VOC component.

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So, all the critical element which it is which we have discussed so, far is being covered in this silicone category.

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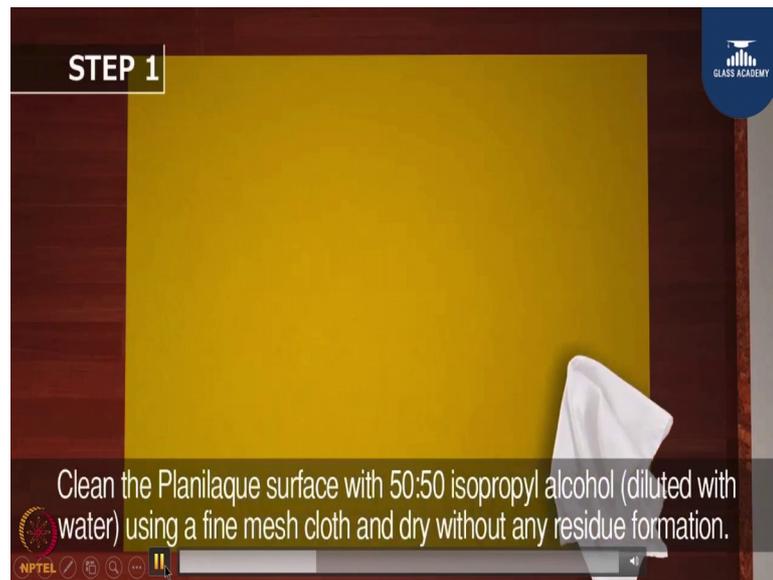
And it must be compatible with all type of glasses as we discussed.

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So, here we are taking 6 mm thickness of a back painted glass.

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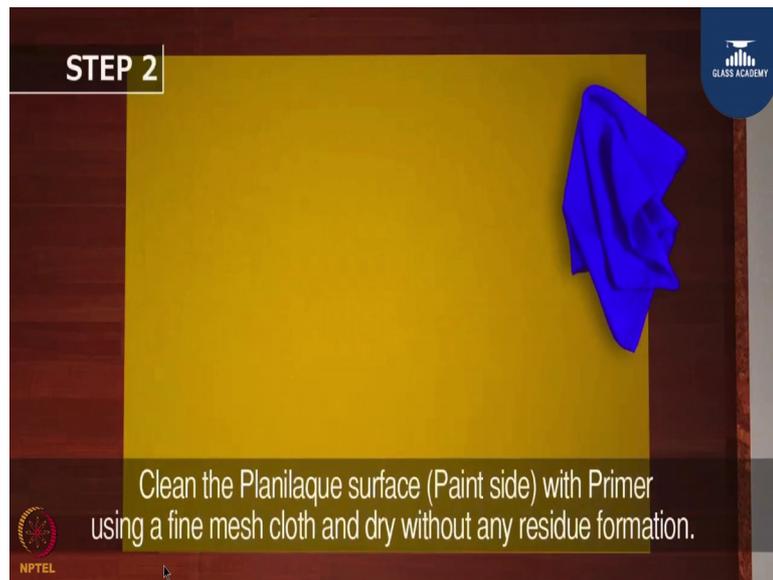


So, it is a painted side, placed on table, first we need to clean the surface with the normal dry and clean cloth.

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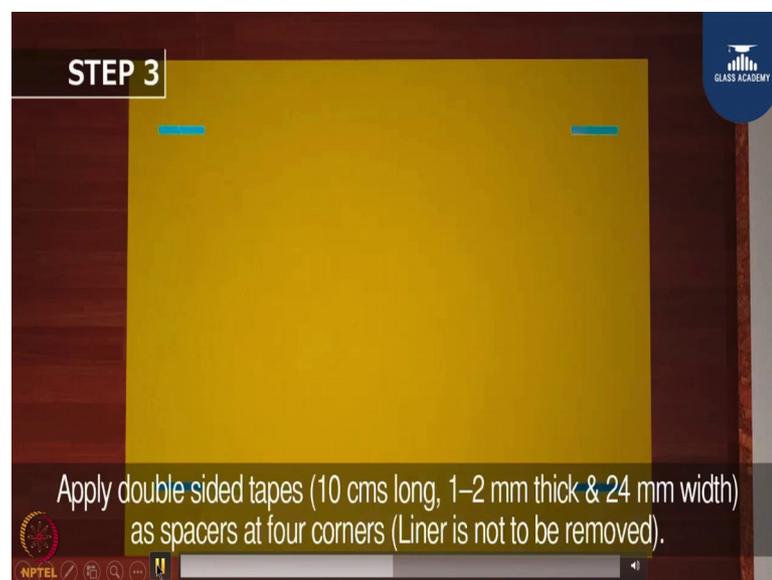


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Then there are some cleaning agents available with the help of which we will clean the surface completely, no dust and no dirt accumulated on surface. Then we will start fixing a double sided tape.

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So, as we saw firstly, that there are silicones there are double sided tape, there are masking tape and clear partition tape. So, this is the second product which is being used for glass fixing. So, you see here we have pasted almost 10 cm of a strip around 1-2 mm

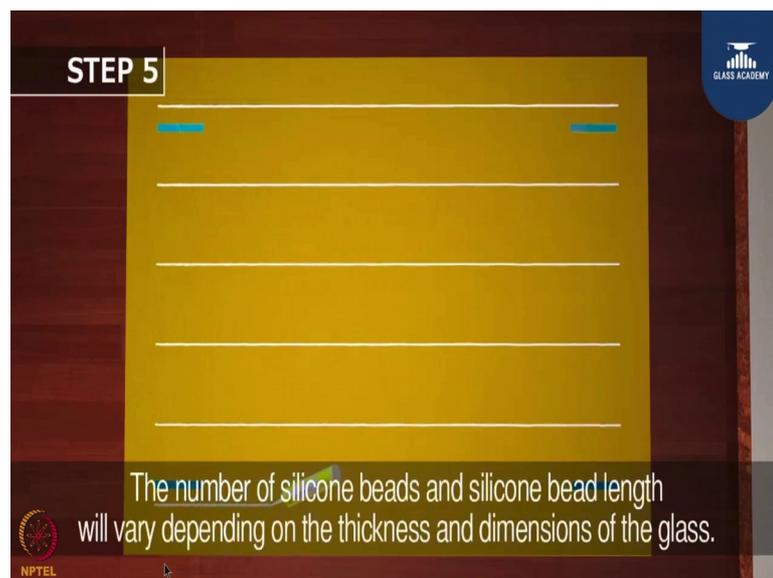
of thickness on the four sides of glass to hold the glass from corners. Now how we will put silicone we will see, here substrate is plywood.

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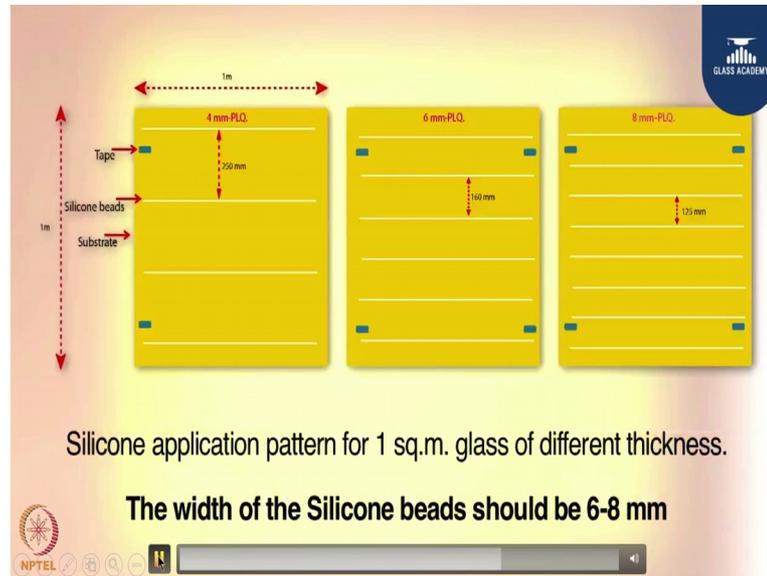
So, as I said the silicone which is going to be used must be compatible with all kind of substrate like plywood, MDF board or fiber cement also. So, here you can see the substrate is plywood. So, it is we can use silicone with plywood also.

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So firstly, we will clean plywood in the same way with the help of that cleaning agent and this is how we will fix silicone to it in an horizontal way, linear position beading and though it is a 6 mm glass gap in between these horizontal beadings will be 160 mm.

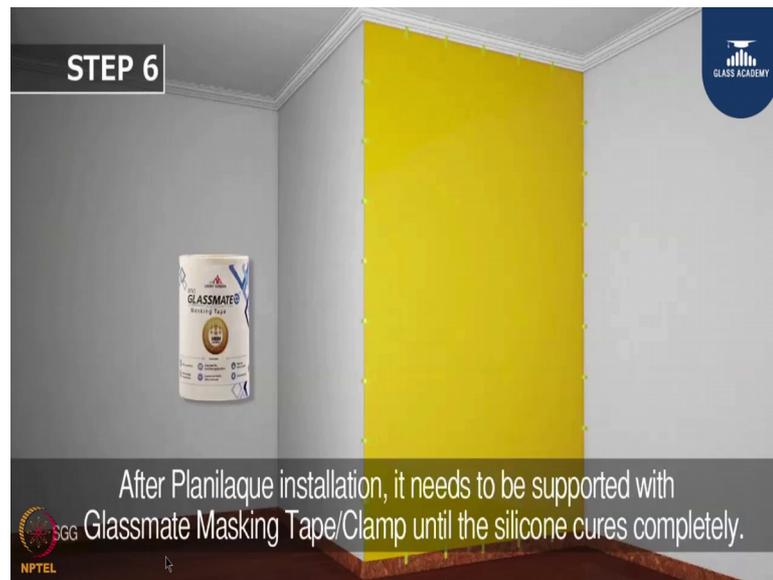
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So, here is a chart for your consideration you see, if glasses of 4 mm you can see in first picture the gap in between two horizontal lines of silicone is 250 mm. If the glass is of 6 mm the gap in between two horizontal lines of silicone is 160 mm.

If the glasses of 8 mm you can see the gap in between two horizontal beading silicone beading is a 125 mm. So, this is how it varies from glass thickness to have in different thickness to different. Now this is how we will paste the class on the substrate which is already cleaned with the help of cleaning agent.

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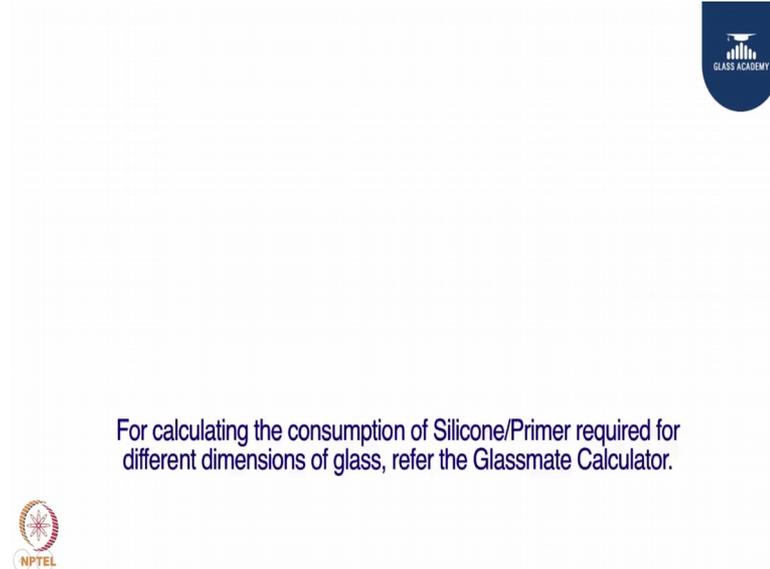


Once we place the glass, now we need to fix masking tape. As I said masking tape is a supporting element which is being used for holding the glass to the substrate.

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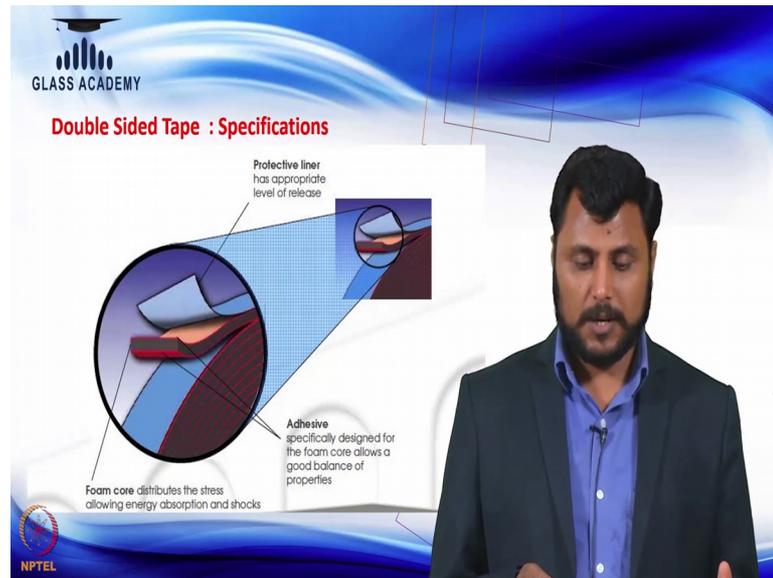
So, this is how the installation of glass is being done with the help of silicones.

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So, now we will see the installation with the help of double sided tape. There is a basic difference in between double sided tape installation and a silicone installation and that is basically the time. When we are going to fix the glass with the help of silicone of course, it will take more than 8-9 hours whereas, if we are going to fix the same glass with the help of double mounted tape it is just a job of 10 minutes. So, that is the big difference in between a glass fixing with the help of silicone and glass fixing with the help of double mounting tape, that is why people are preferring double mounting tape most of the times.

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So, we will see how this installation is going to happen before that we will have a look on double sided tape. When we say double sided tape there is one thing which is very very critical is the base of that foam because, if foam base is not that good that sticky adhesive properties would not come in that way.

So, mostly the people who are using foam it is basically polyurethane foam. So, polyurethane foam is basically the strongest material the strengthen foam which is being used in this category. And you can see the way it is peeling off that, peeling off properties also the foam distress the strength, I mean distress the impact of force coming to that foam. So, that double sided tape foam is a critical element of this product.

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GLASS ACADEMY

Application Guidelines – Double Sided Tape

Step 1: Identify the paint side of Mirror/Lacquered glass and clean it with a smooth clean cloth.
** Important to remove all dust, oil/grease or any foreign contamination before applying tape to Mirror/Lacquered glass.

Step 2: Mix Water and IPA in the ratio of 50:50 and use that mixture to wipe the cleaned surface. After this, use a smooth clean cloth to wipe the surface dry.

Step 3: Apply primer at the paint side area where tape is to be applied.

Step 4: Apply Tape with the red liner facing up, after applying primer, on Mirror/Lacquered Glass and provide gentle pressure on the red liner to initiate the bond on paint side.

Indicative drawing for 6mm Glass

1000 mm

800 mm

1000 mm

800 mm

200 mm

200 mm

400 mm

200 mm

200 mm

800 mm

1000 mm

NPTEL

While coming to the application you can see, considering the thickness of glass we can paste double sided tape in this way.

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GLASS ACADEMY

Application Guidelines – Double Sided Tape

Step 5: Clean and apply primer on the backing substrate (surface where Mirror/Lacquered glass will be pasted using tape) similar to Mirror/Lacquered glass. Remove the red liner and place the Mirror/Lacquered glass on the substrate. Align well and make the bond.

Step 6: Apply gentle hand pressure all over the Mirror/Lacquered Glass and hold for 10 minutes to initiate the Bond with the substrate. While pasting on a painted substrate (like smooth wall), ensure the paint on the substrate has a good adhesion. If paint peels off then tape should not be used.

Indicative drawing for 6mm Glass

1000 mm

800 mm

1000 mm

800 mm

200 mm

200 mm

400 mm

200 mm

200 mm

800 mm

1000 mm

NPTEL

Thumb rule – 9 sq. inch for 1 kg of glass

Better I will take you through this video that how to fix up a glass with the help of double sided tape.

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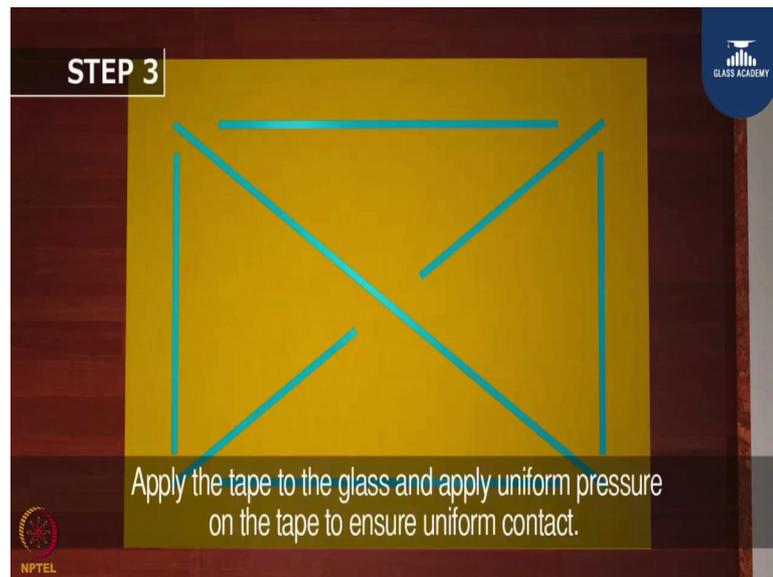
So, here also you can see the key features of this product, the first thing it is instant fixing, high durability, because of that load bearing capacity again equivalent to silicone almost then it is a UV resistant product, green product, then higher bonding strength.

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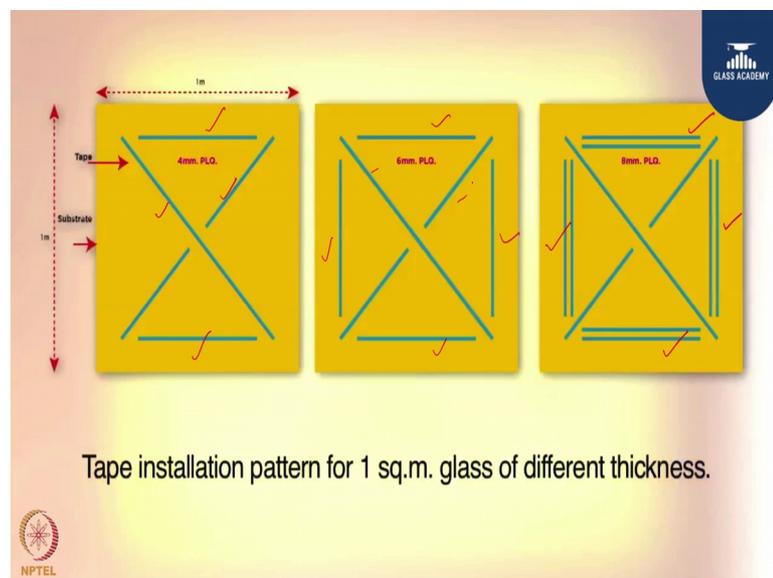
Can be used with any kind of glasses and mirror available in market, same thing here also we are going to take a 6 mm thickness of glass side, the painted side, here the pattern of fixing a tape will be different. Firstly, we will clean the glass with the dry cloth applying primer just to clean the dust and dirt accumulated on a glass in a better way.

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Here the tape comes in now you see the pattern which we followed earlier it was only on the corners now we are going to fix a complete line of tape and that too in a zigzag way.

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Now, you see the first piece of glasses of 4 mm. Now it is a 4 mm glass you can see there are only 1 2 3 4 6 line. And that too whether substrate of 1 square meter. When it comes to 6 mm you can see all the sides are pasted with a tape. When it is comes to 8 mm, we have strengthened the number of lines enforced in this tape category like in borders you

can see there are 2 lines like here 2 lines on this side also 2 lines, this side also 2 lines and this side also 2 line. So, if it is 4 there is only top bottom and axis y axis.

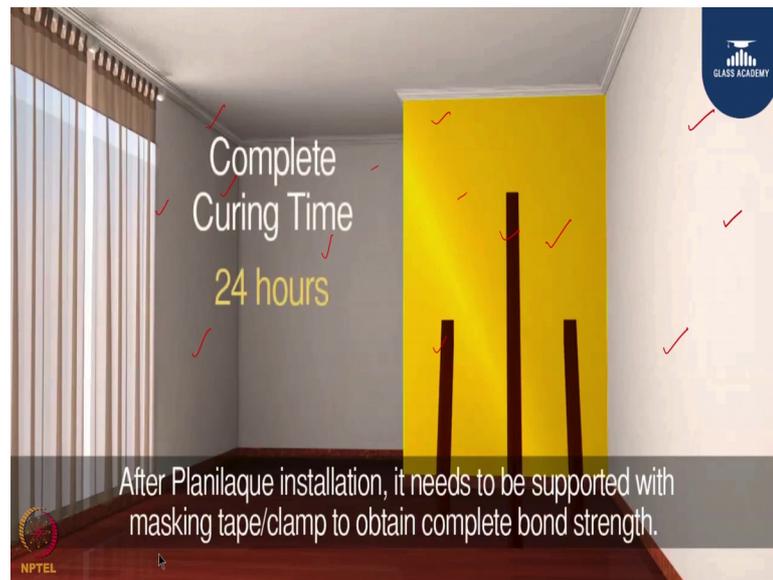
If it is 6 mm top, bottom, left and right, as well as x and y axis. So, this is how they differentiate in between thickness. If it is of 4 mm we will do like this, if it is 6 mm we will do like this, if 8 mm we will do in a doubling way. Why it is like that? Because thickness the moment thickness varies the glass load will vary. So, to control the load of the glass we need to fix tape in this way. The most differentiating key factor is the time consumed in installation, you can see it is a fast and instant installation compare to silicone. Here also the substrate is basically plywood need to clean with a normal cloth.

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Then applying the primer, fixing tape, 4mm 6 mm glass fixing on the substrate putting support that is all so, the installation is happening in almost 10-30 minutes, curing time is complete 24 hours the installation will be done.

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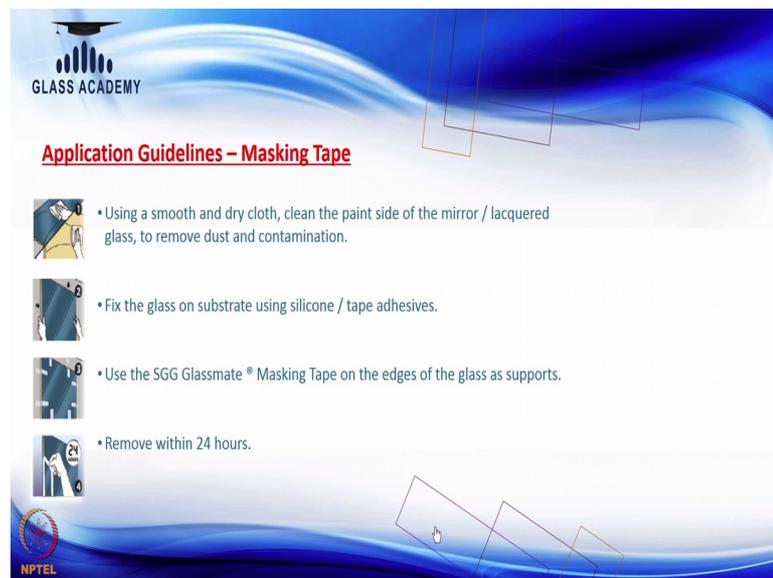


So, the fastest solution to fix a lacquered glass with the help of double sided tape, the next product comes in this category is masking tape. So, as I said masking tape is basically used for a support, support to glass fixing accessories, other than the support element masking tape is basically used for glass designing; you might have seen some different kind of designing etching on glasses. So, there are basically masking tape is used to chip that area I mean to block that area apart from that area that etching will happen on this glass.

So, masking tape is being used for that. So, whenever we are pasting masking tape in that category the first property comes in that it should be stain free, while removing that tape out of that space it should be stain free. So, that is the first property which a masking tape must qualify, then high load bearing capacity as I said it is being used for holding the glass from I mean two substrate. Where with the help of silicone or with the help of mounting tape when we fix the glass we need to hold it out.

So, for holding it must carry some load bearing capacity so it must be a good capacity. Then it should work on high pressure condition because the pressure will be high, when we are putting a glass on to the substrate. So, it should be withstand to that high pressure of working conditions.

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So, application of masking tape is same it is very easy you can place mirror mounting tape at the back of the glass. Then you can fix it with the substrate, then you can hold it with the help of masking tape as like we do it in our domestic appliances, half of the tape will be on the border, half of the tape will be in the glass.

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GLASS ACADEMY

Clear Partition Tape

- Used for Glass to Glass Jointing.
- Fast and Instant fixing solutions.
- Brilliant acoustic properties.

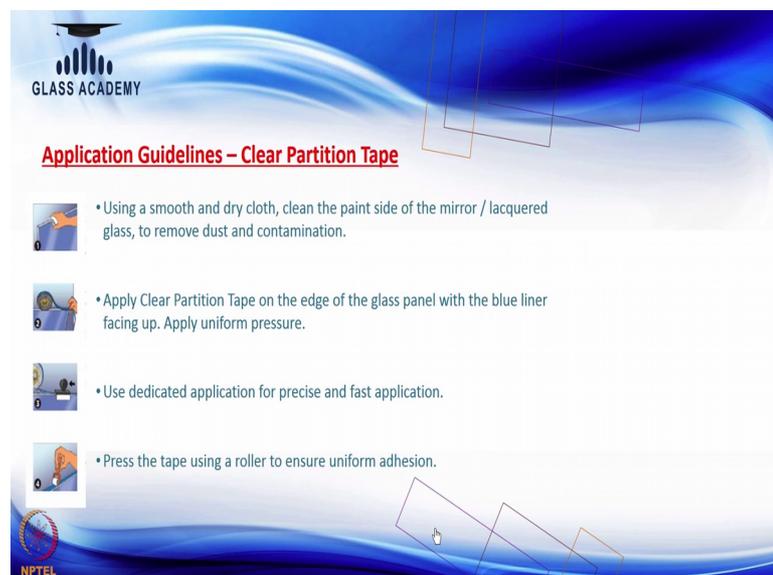


NPTEL

And you can remove it in within 24 hours; there should not be any stain in the class. So, that is basically mostly used for this etching properties, I mean the etching industries and the fixing part. Next product comes in this category is clear partition tape, that is a very good product which is being used for partition again it is a fastest fixing solution.

As well as I said that it is being used in office partition, it provides an acoustic properties also, I mean this sound dampening. Once we make a cabin with the help of this clean clear partition tape, there would not be that much of sound transfer to another room.

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GLASS ACADEMY

Application Guidelines – Clear Partition Tape

-  • Using a smooth and dry cloth, clean the paint side of the mirror / lacquered glass, to remove dust and contamination.
-  • Apply Clear Partition Tape on the edge of the glass panel with the blue liner facing up. Apply uniform pressure.
-  • Use dedicated application for precise and fast application.
-  • Press the tape using a roller to ensure uniform adhesion.

NPTEL

We will see how this is being fixed and how it is being done with the help of video again where will be clear to all of us.

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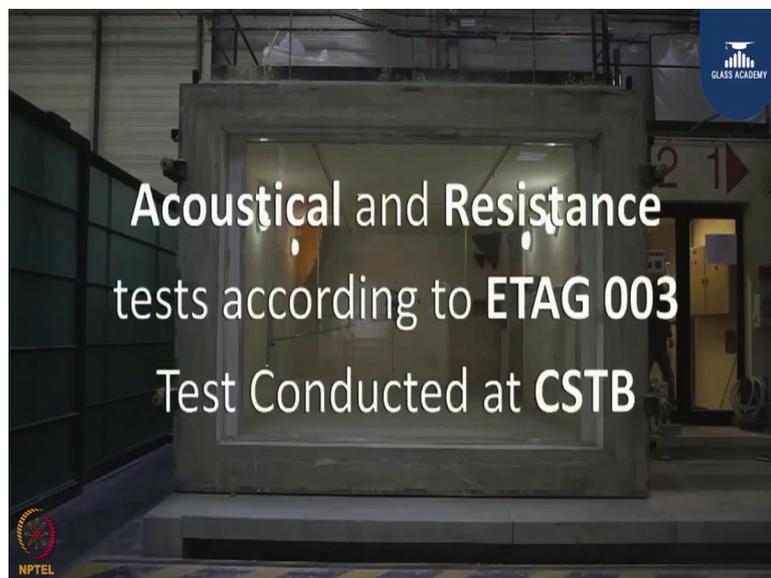
So, it is a clear acrylic tape, immediate and clean bonding, easy installation. Now we will see how the application is being done glass fixed. Firstly, we will clean the edges of the glass; because it is going to be fixed on the glass edges you can see here. Then applying the partition tape on the edges with the help of application tool, pasting it properly on the edges, so, that there would not be any air gap in between tape and edge.

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Then peeling of the layer, this how we will peel off the layer. Then fixing the two glass here it goes completely closed and now, the glass is being fixed with the help of partition tape, no other solvent, no other adhesive, no any other support required in this category.

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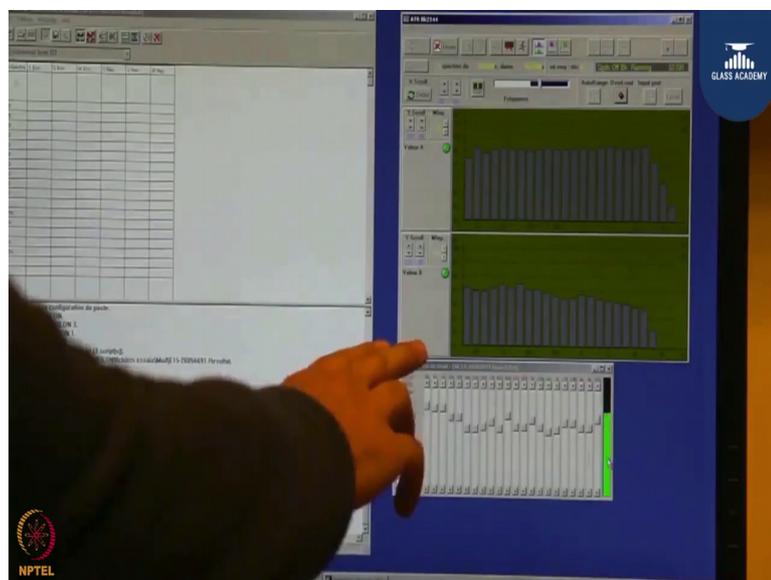
So, you can see how it is easy fast for fixing a clear partition is this need support on the sides.

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There is no support need in between centre. So, it is giving you best aesthetic appeal, as well as the load bearing strength.

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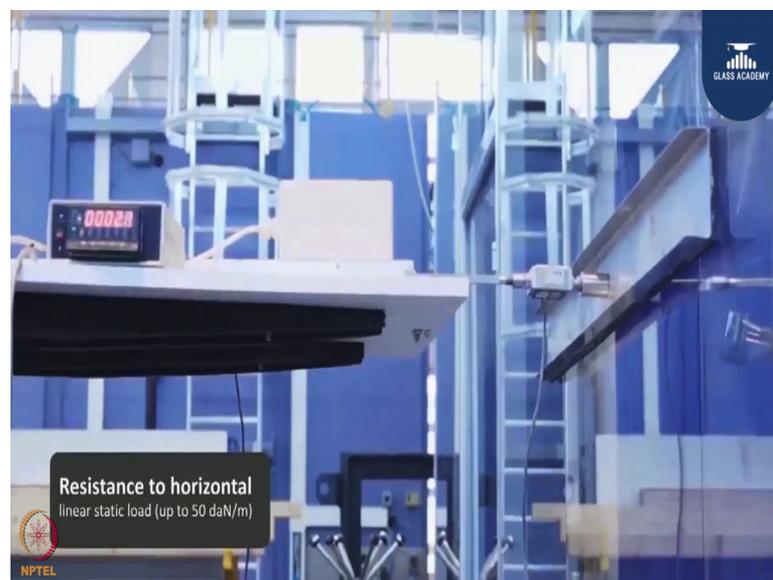


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Now, we will see we will test here the strength of that partition glass also that how much weight it can resist to.

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So, the resistance to horizontal load because, vertically the glass is being hold on the surfaces, I mean the top ceiling or may be the in floor ceiling.

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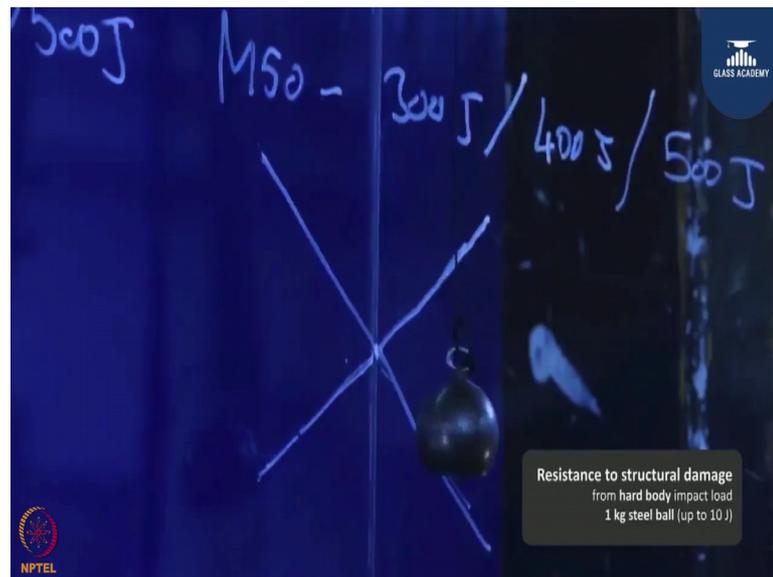
So, impact soft body of 50 kg, you see how it is going to fantastic. So, there is no impact, there is no breakage in glass right.

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So, the best way of fixing partition glass with the help of clear partition tape.

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So, these are the standard and perfect way of glass fixing or I would call glass installation.

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So, let us understand what are the benefit of a perfect glass installation. When I say perfect glass installation it must compliment to our end user, as well as the person who is going to do the installation. So, we will see what are the major benefits which both of these categories are going to get out of this installation.

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The first benefit which comes in picture is saves time, perfect installations saves time in what ways? The first thing if you have selected the right product let us say if talk about silicone we will take less time to cure it. When we say less time to cure it means it will give more productivity to the person who is going to install it.

Secondly, the person who is going to use it will be able to use that product in a faster way; let say today if we put up the glass tomorrow that customer will be able to use it. If that silicone is not of good category it will take 2-3 days, if we started using before that 2-3 days curing time, it will get some moisture glass will get down and some breakage will happen.

So, to avoid those kind of defect, first we need to understand the right product which has got very less curing time. And secondly, the right way of installation as we saw in that video, that there must be gap of 160 225 or 250 mm in between the silicone beading depending on the thickness of the glass. So, that is one the ultimate benefit is saving time of installation team as well as the customer.

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GLASS ACADEMY

Perfect glass Installation that...

Saves cost

Right method of application of Silicone will cover a larger area of surface which ultimately lead to a huge cost savings.

NPTEL

Second things comes in saves cost, how a perfect installation is going to save the cost of product or the cost of installation? The first thing if you are selected the right product and we are applying it a right way, the wastage will be very very less wastage is ultimately the cost saving. Second thing if you are using a good quality of silicone it will be required lesser than the normal silicone, because the adhesive property of the silicone will be higher than the other normal product.

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GLASS ACADEMY

Perfect glass Installation that...

Looks great

Silicones compatible with all kind of surfaces will give the best aesthetic appeal instead of imposing patch on glass after installation.

NPTEL

So, it is going to save cost, then looking great a perfect installation results in a great aesthetic appeal. As you I mostly this product or this product category belongs to paint. If any back painted glass or any mirror is not compatible with the silicone or I would say silicone is not compatible with the paint what will happen? It will create some kind of paint peeling off some kind of patches at the back of the paint.

So, what will happen that aesthetic appeal will vanish off. So, to avoid that kind of things we must use the right product we are having better compatibility with all kind of painted surfaces which gives you a better aesthetic appeal.

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And then related to our health, it must be safe. Whenever we are going to select any of the interior product in this interior glazing category, we need not we must look into the VOC complaints.

If that product is not VOC compliant means of course, certainly it is going to hamper the interior air quality. So, that is the most critical element when we are going to select glass as well as the glass fixing solution we must look into the VOC complaints, because most of the silicones available in market or not voc compliant. They are basically what aesthetic based which we call acetoxy, which will emit some VOC compounds hampering the interior air equality. So, that should not be done, we must look into this.

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And then of course, installation must be very very easy for a layman. So, all the installation must be taken care of in such a way that anyone can do it in a easy way. As we saw in video while fixing the silicone it must be pasted in that way in an horizontal way that it should withstand the load capacity I mean the load strength of the class.

So, it should not get down in a lesser period of time whereas, it should withstand till the type of glass. So, ultimately what is the benefit of using a right product in a right way is your peace of mind. If you are going to select the right product, if you are going to do the right installation, the way we discuss, the way we saw in this video.

Of course, the installation will be very very easy and fantastic in terms of the aesthetic appeal, in terms of the life of that product. So, whenever we are going to look up for any of the interior glass product category we must strict to these standards while selecting these products.

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Summary:

By the end of this video, you have learnt about the:

- Application procedure and specifications of various components
- Important standards
- Advantages of double-sided tape
- Benefits of choosing the right components
- Advantages of a perfect installation

Thank you so much wish you all the best.