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3G Film on Glass, Opaque Mode, Power-Off

3G Film on Glass, Clear Mode, Power-On

Do It Yourself and Save A Bundle

The above pictures show switchable windows installed in a microelectronic laboratory of the University of Texas, USA. By looking at its function and effect, one can't tell whether it is laminated glass or film on glass. A traditional switchable window or smart glass is formed by laminating a liquid crystal (LC) switchable film into two pieces of glass. However, in this case, a 3G Switchable Film is directly mounted on the window using double sided tape. It becomes a new type of smart glass with additional advantage of lower cost. It is so welcomed by the market and has become a widely acceptable application mode.

Although LC switchable film was invented two decades ago, usage of switchable glass is not broad enough and not many people are familiar with it. A major reason for the limited use is its high price and relatively short life. Old generations of LC switchable film are very sensitive to moisture and not stable if directly used in air. This is the case especially for first generation NCAP films, as it is made from water soluble polymer and is absorbent of moisture at edge of the film. These old generations of films (1G, NCAP film or 2G, PDLC film) often have an edge defects caused by absorbing moisture from air. Therefore, these films MUST be protected by glass lamination for a practical use. Glass lamination is a complicated industrial process involving high temperature, high pressure and long process time requiring heavy equipments like autoclaves. The complicated process and large energy consumption results in a high cost. The cost of glass lamination can be one to three times higher than the film itself (varies in different countries). In addition, special glass handling requirements for packing, shipping and installation make the total cost even higher.

The invention of third generation, 3G Switchable Film, has changed this situation. A novel non-linear polymer system is successfully used to solve many previous problems including high moisture sensitivity. In the new polymer system, silicone and/or fluorine elements are introduced into the polymer system to improve moisture resistivity. Silicone containing polymers and fluorine containing polymers, have great water-proof characteristics, and are typically used to produce gaskets, cables and non-stick coatings for cooking ware. With these improvements, 3G Switchable Film is no longer sensitive to moisture and very durable for use without lamination protection. Therefore, 3G Film can be directly put on a window with double sided tape, regular clear tape or optical glue. Other improvements like low voltage driving, strong UV resistance, front and rear projection screen function and long life time also greatly support this new method of use. For years, 3G Switchable Film has proven its great durability in labs and fields. No single edge defect and noticeable change in optical performance have been found or reported after 6 years of intensive indoor use. It has been used in many commercial projects worldwide. Overall, users could save two third of their cost by using the new method. Besides saving money, it saves energy and is a true low-carbon green application.

Installation of 3G Film with double sided tape is as simple as putting a poster on a window, and does not require any special skill or tool. Users can easily get a satisfactory result by following a simple procedure: 1. Clean the glass with a glass cleaner like Windex. 2. Put double-sided tape around the edge of the glass. 3. Stick 3G Film on the glass. 4. Treading 3G Film like a light bulb, connect/solder a thin wire (22 gauge) to two electrodes on the film. Mounting 3G Film with double sided tape offers the highest successful rate for ordinary people and anyone can do it. A film with a self-adhesive is not easily applied by ordinary people, because electric static often cause unwanted sticky and creates many bubbles, leading a very low yield. Additionally, it is very difficult to vertically install large size film on an existing window, even for professionals. On the other hand, self-adhesives itself do not have a good transparency.

Obviously, cost efficiency is a major advantage of directly sticking 3G Film on a window. In addition, users also get many benefits from other advantages, such as freedoms of design, repost, storage, reuse, relocation, resizing as well as a freedom of changing its function from privacy to projection screen to light diffuser or to other usages. In general, the new method remains an opportunity of changing the film for any purpose. With so many benefits like superior product, low price, freedom of change, environmental friendliness and value retention, it is not surprise to see that 3G Film becomes consumer's first choice for use in offices, stores and homes. For more information, please visit Scienstry, Inc. website www.scienstry.us/products.htm.