

Technical Bulletin: Fabrication of the Illumination series

The Corian® Illumination Series allows you to see Corian® in a whole new light. While some colours of Corian® sheet have always been translucent, the Corian® Illumination Series allows up to 3 times more light to pass through the sheet, while still maintaining the properties you have come to count on. The Illumination Series is Class I (A) fire rated, thermoformable, repairable... and comes only from DuPont.

Fabrication/ Installation considerations for Backlit Applications

- The Corian® Illumination Series can be fabricated in the same manner as other Corian® Colours.
- When there is backlighting a few changes in fabrication are required. When a light source is placed behind the sheet there are some additional considerations. This document will help you to understand how to fabricate for best appearance.
- Refer to the Corian® Fabrication Manual for details on standard fabrication techniques referenced in this document.
- The increased translucency and use of backlighting allows the use of this material in new and unique applications requiring advanced fabrication and lighting techniques beyond the scope of this bulletin. It is important to work with your customer, test samples to help demonstrate the design and ensure your customer is satisfied with the final product.
- The new Translucent White Corian® joint adhesive has been specially formulated to work with the Corian® Illumination Series. This adhesive is more translucent and will better match the appearance of the sheet when backlit. However, results will vary depending on fabrication/installation conditions.
- It is important for backlight applications that all inspection and quality checks are done both with room lighting and with backlighting. Some fabrication defects will not be visible until the sample is backlit.

Seaming

Seam quality is critical for appearance. Seams may be more visible when backlit than with typical room lighting. A higher quality mirror-cut tight seam will minimise the visibility of the seam. Make sure no interior voids are present in the adhesive as they will be visible when the seam is backlit.

Place the seams where they are less likely to be noticed. This could include corners or locations where the light source or supports create a shadow. If a tight seam is not achieved the seam may be visible. The visible adhesive may change appearance depending on the lighting, appearing darker than the sheet if not backlit, and lighter than the sheet if backlit. **DO NOT USE EXCESSIVE PRESSURE.** Enough adhesive needs to stay in the joint to create a strong seam.

IF THE APPLICATION INVOLVES BACKLIGHTING, EXCESS ADHESIVE ON THE BACK SIDE MUST BE REMOVED OR THIS WILL CREATE A SHADOW DUE TO THE INCREASED THICKNESS.

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When removing the adhesive on the back side, the finish should be blended in with the surrounding finish as extreme differences in finish may be perceived as lighter or darker areas. After seaming it is important to examine the seam with the type of backlighting to be used in the final installation. Examine the quality of the seam and ensure that the adhesive removal did not create a visible change in appearance.

Thermoforming

The Corian® Illumination series can be formed using the same conditions and methods used for other Corian® Colours. While forming is the same, defects are more readily seen with backlighting and will appear differently when backlit.

Slight colour shifts may occur during the thermoforming heating process. The change is a function of both the time and temperature of heating. To minimise colour shift, use the minimum time and temperature necessary to achieve the desired shape. If the formed sheet needs to be seamed with uniformed sheet and colour match is an issue, the flat sheet should be heated under the same conditions.

Any transfer of mould texture from the thermoforming mould to the sheet is more visible when backlit, particularly when the show side of the part is the side in contact with the mould. This can be eliminated by making the mould with a higher quality finish or by sanding the part after moulding. It is important for backlit applications that all inspection and quality checks are done both with room lighting and backlighting. Some fabrication defects will not be visible until the sample is backlit.

Finishing

The front surface finishing requirements do not change. If the application will require backlighting the back side may require some finishing. The appearance when backlit is relatively insensitive to back side sanding quality, scratches etc but the sanding level should be uniform. Damage to the back surface may show through as a shadow. Take care not to create extremely different finishes when finishing seams as the different finishes may show up as light or dark spots when viewed with backlighting. Always check with backlighting to ensure the area around the seam matches the rest of the sheet.

Supports

In backlit applications, if the application requires seam-reinforcing strips, the strips will be visible as shadows. Any perimeter or span supports will also be seen as shadows. Placing seams in conjunction with shadows caused by the supports will help hide the seam and reinforcing strips.

6mm Vertical applications over substrate

Applications of 6mm Glacier ice sheet may appear to have shadows if there are any colour variations in the underlying wall. For best appearance the underlying surface should be uniformed in colour



and a clear adhesive should be used. Always check for shadows before beginning the installation by placing a sheet on the wall. Check for shadows from the adhesive as well.

Backlighting

Backlighting can be a key part of designs using the Corian® Illumination Series. Lighting technology, particularly LED lighting is changing rapidly and each technology has its own design considerations. The preferred type of lighting will depend on the desired effect.

Notice

- An important consideration in the overall design is the amount of heat generated from the light source. If the Corian® sheet is heated from one side, thermal expansion may cause warp. In an enclosed lighting application, the design needs to accommodate the amount of heat generated by the light source and ensure that the enclosure does not overheat.
- While Class I (A) rated for flammability, the Corian® Illumination Series aesthetics are not intended for use in applications lit with or near flames.