

SN-321-2020

Over view

As staron has a light transmittance properties, it can be applied to lighting applications. Light transmittance differs depending on the color of the product and the thickness of the product. Especially, the 7 colors: Dazzling White, Sanded Mint, Sanded Ice Blue, Supreme Ocean View, Supreme Delphi, Supreme Morning Sky and Supreme Cotton White have higher light transmittance than other staron colors, so it is more effective for illumination applications. Please refer to the following characteristics of translucent colors for proper fabrication.

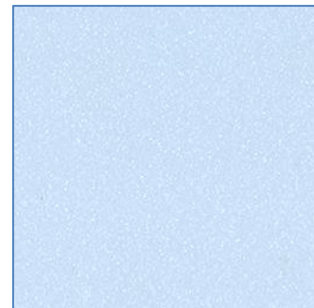
Translucent colors



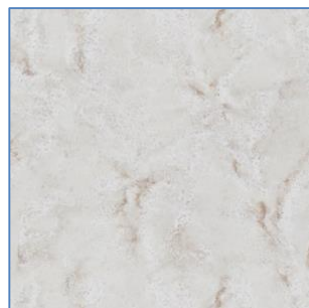
Dazzling White



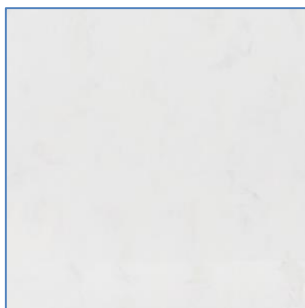
Sanded Mint



Sanded Ice Blue



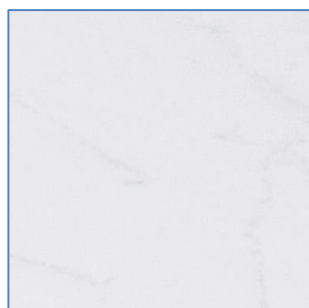
Supreme Ocean View



Supreme Delphi



Supreme Morning Sky



Supreme Cotton White

Reference

- Lighting mock-up of Supreme Cotton White and Supreme Morning Sky.
- Be note that the pattern of Supreme is vary, fabricator must check the color in lighting condition before spec in a project.



Supreme Cotton White



Supreme Morning Sky

Light transmittance value

Light transmittance differs depending on the color of the product and the thickness of the product. For better understanding, values of white colors and some translucent supreme series colors are added on below table along with translucent colors.

* The following values are reference values and may differ depending on the product LOT.

* As a reference, pictures of each color's transmittance are attached on the next page.

| Category | Colors | Transmittance Value | | | |
|--------------------|----------------|---------------------|----------------|----------------|----------------|
| | | Thickness: 12mm | Thickness: 9mm | Thickness: 6mm | Thickness: 3mm |
| Translucent Colors | Dazzling white | 8% | 13% | 21% | 34% |
| | Sanded mint | 2% | 4% | 9% | 19% |
| | Sanded Iceblue | 2% | 4% | 10% | 20% |
| White Colors | Quasar white | 0% | 0% | 1% | 4% |
| | Pure white | 0% | 0% | 1% | 6% |
| | Bright white | 1% | 3% | 6% | 11% |
| | Pearl | 2% | 3% | 8% | 17% |
| Translucent | Ocean view | 2% | 2% | 10% | 27% |
| | Delphi | 0% | 1% | 3% | 9% |
| Supreme Series | Cotton white | 3% | 7% | 12% | 22% |
| | Morning sky | 4% | 7% | 13% | 22% |

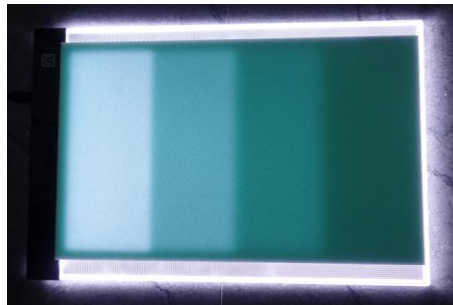
Note: Translucent value of Supreme Delphi is low because it is not translucent all through the sheet but only some part in vein pattern is translucent due to make special vein pattern in lighting application. (see the reference on the next page)

Transmittance level (Thickness of 3, 6, 9, 12 mm)

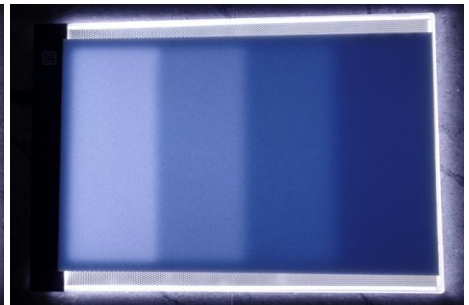
- Brightness of picture may differ from actual test. Color selection should be done after actual sample testing.
- Please note that the difference in the pattern of the Supreme products may be wide.



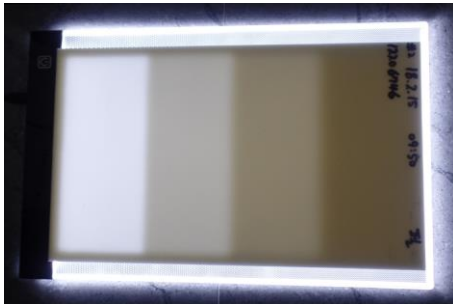
< Dazzling White >



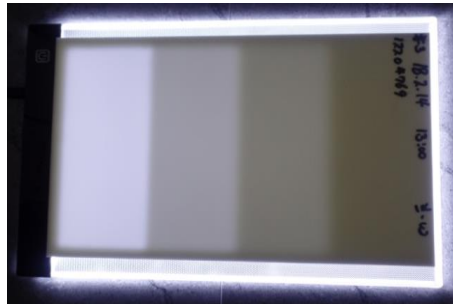
< Sanded Mint >



< Sanded Iceblue >



< Pearl >



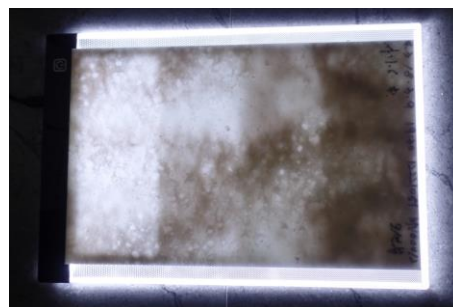
< Bright White >



< Pure White >



< Quasar White >



< Supreme Ocean view >



< Supreme Delphi >



< Supreme Morning sky >

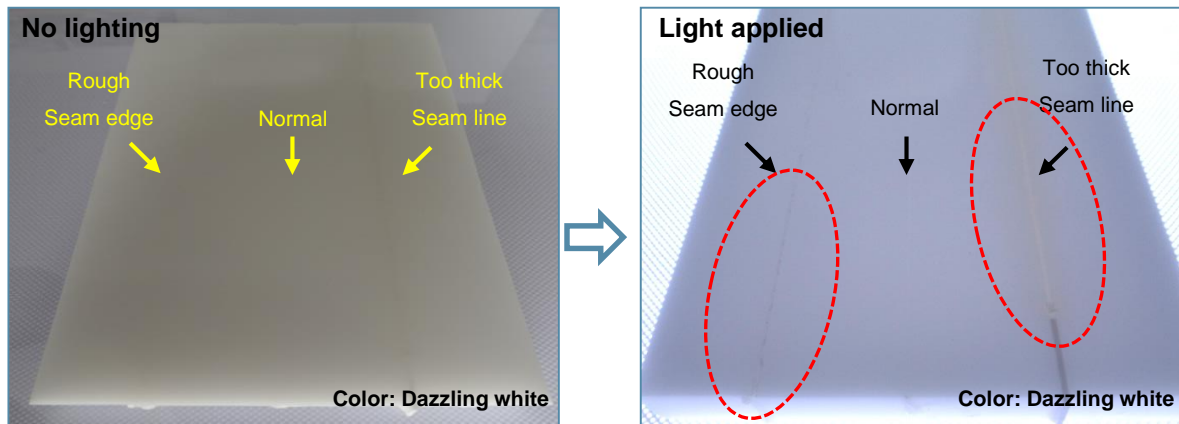


< Supreme Cotton white >

Fabrication: Seaming

In the case of staron lighting applications, the adhesive seam line may be visible when transmitting light even though seam line was not visible under no back light condition. In order to prevent the adhesive seam line, the seamed edge should be smooth before join, and the gap of the adhesive seam line should be not more than 0.1 mm.

* Note: If clamping is too tight, the adhesive will not be remained as much as to have enough bonding strength.



Fabrication: Thermoforming

Translucent colors tend to change color easily during heating. Recommended thermoforming process for translucent colors is heating for 13 minutes at 160°C and do not exceed heat up time 13 minutes. Particularly, during pressing in the mold, any transferred texture of the mold to the plate may be displayed by back lighting. Please sand uniformly on both side after thermoforming.



□ Minimum inside radius

- Translucent colors is allowed to be thermoformed as below.

| | Dazzling White | Sanded Mint | Sanded Ice Blue | Ocean View | Delphi | Morning Sky | Cotton White |
|---------------------|----------------|-------------|-----------------|------------|--------|-------------|--------------|
| Min. R value | 76 mm | 76 mm | 76 mm | 127 mm | 76 mm | 76 mm | 76 mm |

□ Color changes depending on heating time

- The heating test was carried out at 160°C. (Oven machine brand: Global)
- Please note that result may be different depending on the fabricators.
- If color change ΔE value exceeds 0.4, a slight color difference will be appeared after two sheet joined.

(unit: ΔE)

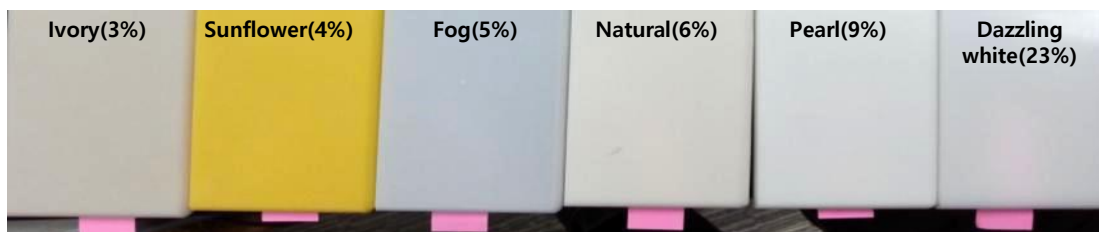
| | Dazzling white | Sanded mint | Sanded Ice blue | Bright white | Pure white | Quasar white | Pearl | Ocean View | Delphi | Morning Sky | Cotton White |
|---------------|----------------|-------------|-----------------|--------------|------------|--------------|-------|------------|--------|-------------|--------------|
| 13 min | 0.2 | 0.7 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.3 | 0.3 |
| 25 min | 1.9 | 4.6 | 2.0 | 0.5 | 0.5 | 0.3 | 2.7 | 1.2 | 4.6 | 4.1 | 2.0 |
| 40 min | 13.0 | 12.5 | 11.3 | 2.0 | 0.7 | 1.1 | 4.7 | 5.0 | 3.5 | 13.3 | 12.2 |

Notice for fabrication

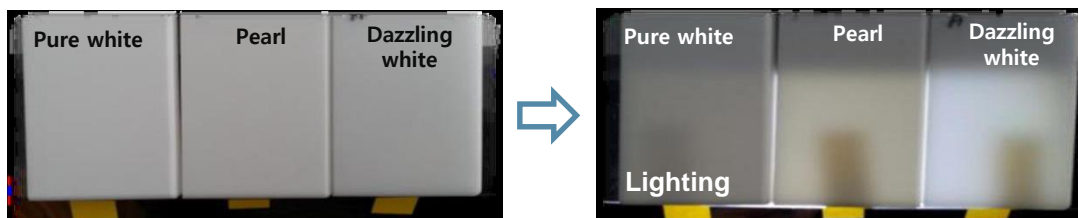
- 1) The adhesive remaining on the back side will be visible when transmitting light. Remove the adhesive on the back side.
- 2) Shadows may occur due to reinforcing material under seam line. Please make sure that there is no reinforcement material in the lighting area.
- 3) Even if it is not a lighting application, objects on the back side may be visible through thin sheet material. Especially, when using silicone for interior wall, please choose silicone of transparent or similar color with wall.
- 4) Small scratches can easily be noticeable in lighting conditions. Please check with light and polish it completely.
- 5) Please choose light source with low heat generation. If the product has been exposed to high temperature for a long time, it may cause deformation or color changes.

□ consideration: high translucent of product

- Even if there is no light on the back side, the object on the back side may be slightly visible on translucent colors. below picture is about staron colors of thickness 6 mm with transmittance % value



- By the un-expecting induced light, objects on the back may be visible.



Quality inspection before fabrication

Foreign matter or black spot inside the Staron product may not be detected during our quality inspection. When using staron for lighting purposes, fabricators must check the any defect inside of the sheet using light. If the foreign object is found in the product after fabrication, the fabrication cost will be excluded from the compensation following our warranty policy.

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CASE STUDY

- Lighting application using transmittance difference of thickness variation (Pure white, by CNC machine)



- Lighting application using high translucent of product (Dazzling white)



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