



### Printing Specialty Materials with the Gerber Solara ion™ & Gerber CAT | UV™.

*This document explains the process of printing on Specialty materials with the Gerber Solara ion & Gerber CAT | UV and important precautions that should be taken.*

#### Printing on specialty materials

The Gerber Solara ion & Gerber CAT | UV flatbeds can print on many materials that previously could not be printed using UV printers, such as flat light fixture covers, slate, ceiling tiles and carpet. Since many of these materials have not been tested by Gerber Scientific Products, it is important to follow the guidelines herein which pertain to trial printing on untested materials.

#### Important considerations when printing specialty materials

If a material is dimensionally stable and less than 1" (25.4 mm) thick, there is a good likelihood the Gerber Solara ion and/or Gerber CAT | UV can print on it. While the Solara ion & Gerber CAT | UV can safely apply ink to most materials, adhesion and colorfastness will vary, so make sure you test your materials and use common sense. For example, some materials, i.e. cardboard, can bow during printing and must be taped down.

*CAUTION: Do not try to print on your Gerber Solara ion or Gerber CAT | UV using bent or warped material, even if there is only minor bending at the edges. Rough material that is too uneven or any material that has a bow in the middle or is bent at the corners can cause an incorrect sensor measurement which could result in the material scraping the platen or contacting the print carriage and cause damage. Make sure to inspect the entire material and ensure that it is taped flat.*

*CAUTION: Rough materials like fixture covers and ceiling tiles must be taped flat. Materials such as carpet should also be taped down on all sides to make sure there is no bending, which can result in head strikes and damage to the printer.*

- Remember that exposure to UV lamps can change the characteristics of materials. Not all brands of the same material will react similarly to UV light. Likewise, materi-





# SPECIALTY MATERIALS

## Application Notes!

als that are not designed for printing may vary even if they are the same brand.

- Some porous materials may require double or triple-strike printing to achieve vivid color results. Consult the "Printing double strike" application note at Gerber's website, [www.gspinc.com](http://www.gspinc.com) for directions on double strike printing.
- When printing on materials such as carpet, there can be increased ink castoff during printing, so make sure that in addition to regular cleaning, you clean the print heads after each job printed using these materials.

*WARNING: Be aware that when printing on carpet which has an inconsistent height due to uneven pile, ink can cure on the print heads. Cured ink can ruin the print heads and damage the printer and will not be covered under the Gerber Solara ion & Gerber CAT | UV warranty.*

*NOTE: Mirror type materials are NOT approved for use on the Gerber Solara ion or Gerber CAT | UV. Avoid using mirrors, mirror-finished materials, and other unpainted metals which pose a risk of damage to the printer. A rule of thumb is "if you can see your reflection, it should not be used."*

### Helpful hints for printing on specialty materials

Consider the following information when choosing materials for printing:

- Make sure the material is not bent or warped and has no rolled or curled edges.
- Do not use mirror type.
- Remember that ink adhesion and color can vary on materials that were not originally designed for printing, even if they are similar products from the same manufacturer. This is especially true for materials that were not manufactured in controlled environments.
- Extruded materials can produce inconsistent ink adhesion and color, even within the same sample because of the nature of extruded materials.
- Materials such as plastic fluorescent light diffusers that have one flat side and one bumpy side should be printed on the flat side.
- With materials not originally manufactured for printing, a good rule of thumb is to avoid using old materials, as their ink absorption will be uneven.





*NOTE: To guard against damage to the printer and material, monitor the job so that you can quickly stop printing in case the material causes a carriage strike or jams in the printer.*

### Rigid substrate standards

- Maximum rigid material width is 64" (1.6m/162.6cm).
- Maximum rigid material thickness is 1" (25.4mm).

*NOTE: All materials have a tolerance on their advertised thickness, so users should physically measure each sheet to make sure it does not exceed the 1" (25.4mm) maximum thickness specification, or damage to the printer will result.*

- Maximum rigid material length with roll-to-roll option is 120" (3m/304.8cm).
- Maximum rigid material length without roll-to-roll option is 100" (2.5m/254cm).
- Minimum sheet size is 12" x 12" (30.5cm x 30.5cm). (See "Printing Small Jobs" later in this document.)
- Rigid material must be flat within 0.03" (0.76mm).

### Trial printing on untested material

1. Identify material characteristics and select the most similar material profile in your RIP software. See Application Note: "Understanding Material Profiles for the Gerber Solara ion and/or Gerber CAT I UV" for detailed information on choosing or obtaining a material profile.
2. Properly clean the substrate with 99% isopropyl alcohol and a clean, lint-free cloth according to the procedures noted in the application note "Preparing Substrates for Printing" or in the Gerber Solara ion and/or Gerber CAT I UV Owner's Guide.
3. Validate material flatness (for printability the acceptable flatness tolerance for a rigid substrate is no more than a 0.30" variation). If the material is flexible, make sure it is smooth and properly taped down, with no edges that are folded or bent.
4. Make sure rigid material complies with the Rigid Substrate Standards noted previously.
5. Load material using prescribed practices, set pinch wheels and UV shield accordingly.
6. Send test job from your RIP software to the Gerber Solara ion and/or Gerber CAT I UV.





7. Start the job and monitor the output constantly until job is completed. If any problems are apparent, stop printing immediately to avoid damage to the printer.
8. Evaluate ink cure and adhesion.

*NOTE: If ink is not fully cured after printing, please allow one to two hours for the ink to complete the curing process. It can take up to 24 hours before full cure is achieved.*

### Troubleshooting

- If color is inaccurate see the application note "Spot Color Replacement in ImageRIP."

*NOTE: Failure to manage color settings consistently throughout the entire workflow, from initial image generation through final print, will result in guesswork and unpredictable and potentially unfavorable end results.*

### Printing Small Jobs

- When printing small jobs (when the graphic width is less than 48" (122cm)), UV curing may be less than optimal when using Performance 1 bidirectional mode on the CAT I UV and 360 two-pass bidirectional mode on the ion.
- To ensure proper ink curing, create a repeat job and arrange the sign blanks across the table so that the total width is more than 48" (122cm).
- For unique printing applications, GSP recommends using Production 1 Unidirectional mode or another higher quality mode for the CAT I UV and 360 four-pass unidirectional mode or another higher quality mode for the ion. This will ensure adequate exposure to UV light which results in proper curing.
- Make sure the environmental humidity is at the low end of the specification of 20% to 60%, non-condensing.

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