

SANDBLASTING STENCILS

RapidMask! The world's unique and only dry-processing, self-adhesive photo resist film. With no washout required, no adhesive application and an effortless slip sheet and carrier sheet removal, RapidMask will provide a simple, creative and productive sandblasting experience.

RapidMask photoresist film comes in:

- **HD=2 mil / 50 micron**
- **HT=4mil / 100 micron**

Required Equipment

- Computer Generated Artwork
- UV-Exposure device
- Sandblasting cabinet and abrasive media

Contact GDS Technology for a list of recommended equipment and supplies

Safety and Handling

Refer to SDS for safety information.

Storage

Store RapidMask in a cool (21°C - 26°C), dark, low humidity (<70%), or air conditioned environment to maximize shelf life (up to 2 years). Shelf life is indefinite. Extended storage times outside of these conditions can adversely affect film performance with reduced adhesion and/ or blast resistance. As an option, film can be refrigerated to extend shelf life (DO NOT FREEZE). RapidMask should be stored in its original package when not in use. Store rolls and sheets horizontally.

Production Environment

High detail etching requires care and cleanliness to minimize dust and dirt particles, particularly during film exposure and application.

Light Sensitive Product

While RapidMask has a good while light stability (up to 2 hours working time under most indoor lighting), it is recommended to use the film in yellow safe light conditions until blasted. UV filtered yellow fluorescent lights or UV filter sleeves or white tubes are sufficient.

Artwork

High quality artwork is an essential factor for high quality results. RapidMask uses photo positives vs. photo negatives for photographs with halftones.

Note:

The clear areas of the artwork will be sandblasted.

Clear = Blast

Unexposed RapidMask protects the surface during sandblasting. Make sure to include a at least 10mm of blast border around your artwork. This will assist the removal of the carrier sheet and for masking off. Generate a positive/negative of artwork. For best results, artwork should have dense black areas, with crisp, clean line edges.

Acceptable film media includes ImageBlack Premium inkjet film, stat camera or image setter. Laser film can be used. A toner spray might be used to darken the printed areas.

For best quality, inkjet media is recommended!

Film Exposure:

When UV light passes through the clear areas of the artwork, RapidMask turns blue/dark and brittle in those areas. The unexposed film (black area of artwork) remains green and rubbery. DO NOT underexpose RapidMask. The film must have sufficient exposure energy to become brittle. Since exposure units are not alike, follow the detailed set up instructions to ensure consistent results.

1. Place the emulsion (toner side) of the artwork against the emulsion side of the film. The emulsion/slip sheet side will face up (towards light source). The slip sheet of the film has a duller and softer appearance compared to the carrier side.

2. A vacuum frame or compression frame should be used to ensure firm contact between the artwork and the film during exposure. The higher the detail level of the artwork, the more important it is to use a vacuum frame while exposing.

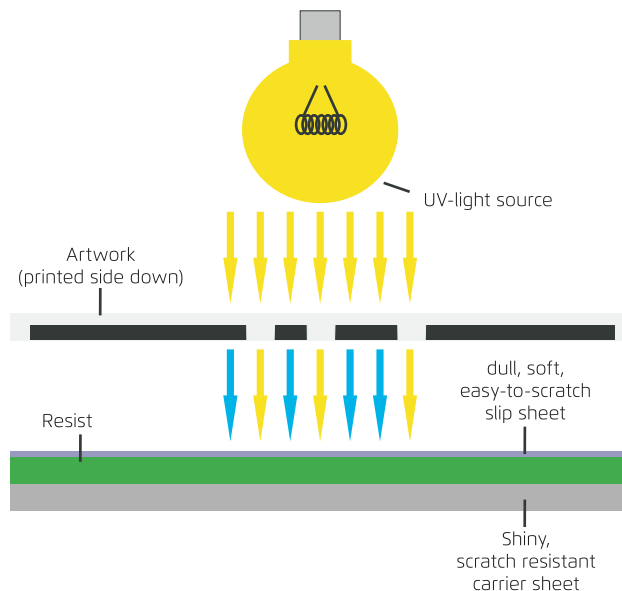
3. Be sure to have a non-reflective black backing opposite your UV-light source to avoid possible reflection causing overexposure.

4. Expose using the suggested exposure times listed.

Note:

Exposure times are suggested only as a guide. All exposure times are approximations and will vary based on type of UV light source used, age of light source and local voltage ranges. Exposure times can also vary based on quality of photopositives used.

Light Source	Exposure Times
Hellas-E UV exposure	HD: 30 seconds HT: 55 seconds
Required UV-dose:	HD: 255 mj/cm ² HT: 600 mj/cm ²
<i>*low intensity exposure units not recommended</i>	



Setting up your exposure unit

Cut several small strips of Rapidmask (approx. 2cm x 10 cm). Place one strip of film under a clear piece of artwork into your unit, so light passes through the artwork first. Begin with a 30 sec. exposure time. Remove strip of film and note that it turned blue. Now bend it in half with the slip sheet out and crease it. It should make a „snap" sound when creased. If not, more exposure time is needed. Repeat test using a new strip of film adding 10 sec. more exposure for each strip tested. Repeat this test until the film is dark blue and snaps when creased. This is the proper exposure time setting for RapidMask in your particular unit.

Note:

1. The slip sheet side can be identified as the „softer" side when scratched with a fingernail, or as the inside layer within the natural curl of a sheet of RapidMask. The carrier side can be identified as the harder, "shinny" side and cannot be scratched with a fingernail.

2. You should etch your fine detailed images within 24 to 48 hours of exposure to ensure good performance when etching. Held longer, the imaged areas can begin to deteriorate.

3. Used alone, RapidMask is not a suitable film for use with acrylic substrates. The peel after sandblasting is difficult, and becomes more difficult if the film and substrate are soaked in water. For applications excluding glass, Rapidmask may stain the substrate. the staining appears within 2 hours of film application to substrate. Testing the substrate is highly recommended.

Image Transfer:

Remove the slip sheet of the RapidMask mask. Apply the adhesive side of the film to the substrate using a roller or squeegee. Take special care to avoid wrinkles or air pockets. Air pockets may cause lack of adhesion, resulting in blow-offs during blasting. to remove air bubbles, reposition the mask or pop it with a pin and tape over the area to avoid blast through.

Note:

Trim any exposed (blue) edges prior to removal of slip sheet.

Note:

To minimize air entrapment and allow for proper positioning of RapidMask, the "wet application" method is recommended, particularly for halftones. Clean the substrate using a glass cleaner to remove dust and finger prints. Trim any exposed (blue) edges prior to application. Remove the protective slip sheet by placing a piece of tape on a corner and peel back. Spray the RapidMask (adhesive side) and substrate with a light mist of water. Place the film on the substrate and when positioned correctly, squeegee the carrier side from the center out to remove the water between the substrate and the film. Squeegee the entire surface well to ensure good adhesion. Using a piece of tape on a corner, remove the carrier sheet and carefully mask all edges. Let sit 10-15 minutes to optimize adhesion before starting to etch.

Blast

Hold the blast gun approx. 10-15cm away from the object and perpendicular to the surface. Begin blasting using a back-and-forth motion over the entire surface. Keep nozzle moving at all times. Do not concentrate on any one area. During the first few passes, you will notice the blue areas of the film will lighten and then disappear. Continue blasting until all "blue" areas of the film have disappeared and desired etched pattern / depth is achieved.

Note:

RapidMask can be blasted using a siphon or pressure-pot sandblast system. Recommended blasting pressure is between:

- Pressure-pot: HD = 1 - 2 bar / HT = 2 - 3 bar
- Siphon system: HD = 3 - 4 bar / HT = 4 - 5 bar

For most applications, Silicon Carbide 180 grit is recommended. Grit size 220 is recommended for doing halftone above 40 dpi. Always follow the safety precautions recommended by the sandblast equipment manufacturer and grit supplier.

Resolution and Depth

Minimum line resolution.

- HD = 2 mil / 50 micron

Use minimum 220 grit size and negative artwork with Dmax 3.0

- HT = 4mil / 100 micron

Use minimum 220 grit size and negative artwork with Dmax 3.0

Halftone resolution = up to 65dpi

Use minimum 180 grit for 45 dpi or 220 (or finer) for higher dpi.

Achievable Depth

- HD 0,15 mm
- HT 0,45 mm

Mask Removal:

Peel the mask from the substrate. Fine pieces of film can be removed by rolling them with your finger tips. Be careful no to scratch the substrate. Alternatively soak the object in warm water.

You can also try this product in our training centre GDS ACADEMY.



Any further questions?
We are happy to help you!