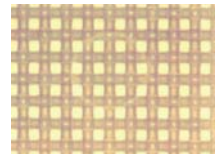


Many of our textile screen printers are responding to customer preferences for goods with a softer "hand" or feel, rather than the stereotypical "bullet-proof" plastisol layer of thick vinyl. One of the common approaches is to work with water-based textile inks. As most printers realise, screens that easily resist plastisol inks are sometimes attacked and softened by water-based inks. By following a series of simple steps, we can easily ensure that screens for water-based emulsions will perform to excellent standards on press.

Step 1. Select the Correct Mesh for the Application

Select the proper mesh count as recommended by the ink manufacturer. Ensure that screens have been properly and evenly stretched with the correct tension (normally a minimum of 14 N/cm²) to prevent stencil wear from excessive off-contact and squeegee pressure settings.



Step 2. Select the Proper Emulsion for the Application

Select an emulsion or capillary film that is fully water resistant. For genuine water-based ink, an inexpensive diazo WR emulsion can be used with excellent results. However, many "water-based" inks contain a small percentage of solvent, so a fully resistant Universal Dual Cure Emulsion is highly recommended for those inks. In general, dual cure emulsions offer the best combination of resistance, durability, print quality, and reclaimability.

Step 3. Degrease the Screen Mesh

Enhance stencil adhesion by properly degreasing the mesh. Apply a proper screen degreaser (not dishwashing liquid!) to the wet mesh. Brush degreaser into both sides, and allow it to work for one to two minutes. Rinse thoroughly.



Degrease every screen you ever make for as long as you live!

Step 4. Apply the Emulsion or Film

Apply **water-resistant direct emulsion** evenly with a scoop coating trough, using the round edge. Apply one or two coats to the print side (substrate side), and then inspect the

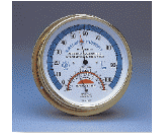


mesh from the squeegee side to ensure that there is a smooth, glossy coating of emulsion free of mesh marks. Follow with one or two coats of emulsion on the squeegee side. Additional coats to the squeegee side (wet-on-wet) will increase the stencil build. If necessary for the application, the surface smoothness of the stencil

(Rz) can be enhanced by applying a face coat or fill coat to the print side with the sharp side of the coater after the initial drying stage. Apply **water-resistant capillary film** with the wet roll-down method or the spotting gun method for best results, following the manufacturer's instructions.

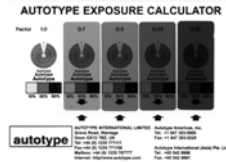
Step 5. Dry the Screen Thoroughly

Complete screen drying before exposure is essential to the production of water-resistant stencils. High moisture content in the emulsion will prevent the screen from being completely hardened during exposure. Dry direct emulsion screens with the squeegee-side up to enhance printed edge definition. Use a drying cabinet with circulating filtered, warm, dry air, or convert a room to a drying area by installing a **Dehumidifier**. A thermo-hygrometer should be used to monitor drying conditions. Optimum drying conditions are 35-45%RH (relative humidity) and 26-32°C (80-90°F) temperature, in a dust-free environment. Dust control in the screen area will reduce the number of pinholes in stencils. The screen drying area must be under yellow safelight. Drying time varies with temperature, humidity, airflow, emulsion thickness, and quantity of wet screens present in the drying area.



Step 6. Expose the Screen Thoroughly

Underexposure is the culprit in many situations when screens break down prematurely while running water-based inks. Screens must be fully exposed to ensure full water resistance on press. While many dual cure emulsions feature a wide window of exposure latitude, it is essential to achieve optimum exposure for water resistant stencils. Underexposure causes pinholes and weak stencils that cannot resist water-based inks. Use an **Exposure Calculator** and the Colour Change Method for determining the proper exposure. The Resolution Method is not reliable for water-resistant stencils.



Step 7. Block Out the Stencil and Tape the Screen

For optimum screen durability with water-based ink, block out the open areas and any pinholes with **water-resistant direct emulsion**. Dry the screen again, then re-expose to harden the block-out emulsion. Use the normal full exposure time, otherwise the block-out emulsion will not be fully resistant to the water-based ink. Tape the edges of the frame as needed.

Questions?

If you have questions or would like additional information on the preparation of Water Resistant Stencils, please contact a technical representative from your emulsion manufacturer. By following these simple steps, you will be assured of durable, water resistant screens that will be suitable for your water based ink products.

Toll Free **Customer Service** within Australia: **1300 650 504**
Toll Free **Customer Service Fax** within Australia: **1300 650 512**
Toll Free **Technical Assistance** within Australia: **1300 135 357**