

BIKINI BEACH

By Mick Orr
Applications Training Specialist

On one of my visits to California, I decided to go for a walk along Huntington Beach on my day off. It was a beautiful day; 85 degrees and sunny with a gentle breeze. It happened to be a Saturday so the beach was packed with people enjoying the water and the nice weather. I was also enjoying the day just people watching. And believe me, there were quite a few sights to be seen. Beautifully bronzed sun worshipers on their beach towels while lily-white vacationers lay baking in sun. I could only imagine the number of sunburns that evening! My mind began to wander and it got me thinking, what are some of the reasons so many people have trouble exposing their screens?

Probably the biggest problem screen makers have is being afraid to expose the screen long enough. They fear that exposing for too long will cause the small details to close in. While it is true that over exposure will cause undercutting, most of the time screen makers could easily increase their exposures. Proper exposure creates a more durable stencil while retaining the image quality needed.

By just changing from white to yellow mesh, your ability to reproduce extremely fine details will increase greatly. Dyed mesh will require longer exposure, meaning exposures need to be from fifty to one hundred percent longer. This increased exposure is needed to thoroughly expose all of the emulsion. With white mesh, you must decrease the exposure in order to attain fine lines. But, white mesh also scatters ultra violet light making it impossible to completely harden the emulsion and still hold extremely fine line detail. White mesh just isn't a good idea.

Another common problem in our industry is screens that are stored incorrectly. It's a great idea to have all the screens you need stored in the cabinet. To store correctly, coated screens should be kept in a cool, dark and dry cabinet. The colder, darker, and dryer, the better. Any heat above freezing will cause the diazo to age, and the warmer it gets the faster it ages. If the screen isn't kept in the dark, stray ultra violet light may hit it causing premature exposure. If any moisture is present, it too will affect the diazo. Obviously, it very difficult to store screens in a perfectly cool, dark and dry environment. Under normal conditions, 70° F, dark, and 50% relative humidity you can expect a screen to last a couple weeks. The best thing is to coat screens to be used the next day. An old screen will be more difficult to expose, and wash out.

The third problem is when a novice doesn't adjust the exposure time when different coatings or types of mesh are used. In order to properly expose a screen, it is imperative that any change in mesh count, color, and stencil thickness be tested using an exposure calculator to determine the proper exposure. A lot of problems could be solved if screen makers would use the exposure calculator as a tool for quality assurance.

Problem four is when screen makers use an emulsion that is too old. Emulsions ages just like we do. Old emulsions become harder to work with because the diazo is breaking down and water is evaporating from the bucket. If you can't use a gallon of emulsion in four to six weeks then, maybe, you should be purchasing a smaller container.



Looking for insight on the wonderful world of screen making? Consult the writings of Chromaline's Technical Guru, Mick Orr, Applications Training Specialist.

Mick has been in the screen printing industry since 1970 with printing experience in a wide range of applications from membrane switches, to textiles, specialty graphics to faceplates and more. His hands-on seminars have been appreciated by screen makers around the world.



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Last of all, many screen makers experience problems by not working under light safe conditions. Even having a window without a filter on it can cause major headaches. Put yellow lights in your work area. Don't worry about it being too bright. As long as yellow safelights are used, no harm will come to the screens being coated. You have a couple of hours to work in before any damage happens to the screens. But remember, once the screens are coated don't forget to put them in a dark, cool, and dry area.

It's amazing to think that all these wonderful ideas came to me while strolling along the beach. I think that I will have to do this more often.