

Tech Tip 120

Effects of Environmental Conditions on Polyester Substrates

The polyester film that is used as a backing sheet for most photopolymer plates is, for the most part, very stable. However, when subjected to large variations in heat and humidity, the film will grow and shrink with each change. This can cause problems during platemaking. A film that has not stabilized may not be totally flat and may not pull up evenly to the upper glass. This can cause variations in the plate caliper.

The basic rule regarding dimensional change is that with increased temperature and humidity the film grows, with decreases in temperature and humidity, it shrinks.

The film can be brought back to equilibrium with time and a normal environment. It can take between 4 and 8 hours depending on the film thickness. The following procedures will help minimize the environmental effects on the substrate material:

- Place newly received materials in controlled storage as soon as possible.
- Store substrates in the platemaking area or in an environment that is similar.
- Keep a quantity of cut and loosely rolled substrates in the platemaking area at all times so that they can equilibrate to the room environment prior to use.
- Remember to protect substrates from exposure to ultraviolet light.

Maintaining the platemaking area environment so that there are no major changes in temperature and humidity will help to maintain the integrity of the polyester film and prevent uneven plates due to the environmental effects on the polyester.