



# TECH ADVISORY #1

## Establishing the Optimum Exposure time for SX / FX Photopolymers

To maximize the capabilities of Econo SX / FX photopolymers it is recommended the following tests be performed.

### Back Exposure Test Procedure

- 1) Cut a 3" X 24" strip of photopolymer. (A smaller size strip may be utilized for small format equipment.) Check & note gauge of material.
- 2) Divide and mark the **back** of material into equal segments (up to 10 segments) with an indelible marker or pen.
- 3) Mark each segment with a series of exposure times beginning with "0" and increasing every successive segment by 10 seconds. (See Example) Thicker gauges (.155"+) may use 20 second increments.

0	10	20	30	40	50	60	70	80	90
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Time increments

- 4) Preheat lamps for a minimum of 5 minutes.
- 5) Place test strip with the **back** towards exposure lamps. Using opaque material, cover **all** the test material except the segment marked "10 seconds". Back expose that segment for 10 seconds. When exposure is completed cover **all** the material except for the segment marked "20" seconds. Expose for 20 seconds. Continue the test by covering and exposing the remaining segments for the corresponding marked times until all segments are exposed.
- 6) Wash the test strip in the washout unit, allowing enough time to remove all the unexposed photopolymer.
- 7) Once washout is completed, place test strip in dryer for 15 –20 minutes. After the time has elapsed remove the materials and allow to cool. Measure and note the gauge of each segment. This will reveal the "floor" of the segment. The "floor", subtracted from the initial gauge will determine the "relief" or amount of polymer removed. Note: Sufficiently washed segments will exhibit a smooth surface when dried. Segments insufficiently washed out will exhibit rough, streaky or tacky surfaces.
- 8) Procedure may be repeated utilizing smaller times to establish a more precise floor.



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### **Face Exposure Test Procedures**

The face exposure test is designed to aid the operator in attaining the optimum graphic qualities utilized on the printing press. Photopolymers require light energy to hold the fine details of the negative at a pre-determined relief. The face exposure test defines the length of exposure time required to retain the necessary graphics for quality plates.

Use a stepped test negative with a minimum of four images. Most photopolymer manufacturers provide these negatives & they contain a variety of values (reverses, fine type and rules as well as screen values up to 175 lines per inch). A test negative can be obtained through your Econo representative.

- 1) Cut a piece of photopolymer to fit the test negative.
- 2) Select the proper back exposure as determined by your back exposure test and back expose the material
- 3) Remove the protective cover film from the material.
- 4) Position and prepare the test negative for face exposure. Draw the vacuum.
- 5) Expose the entire negative for 6 - 8 minutes. (8 –10 minutes for gauges .155" or greater).
- 6) Using an opaque material cover the first image and expose the balance of the negative for an additional 2-3 minutes. When exposure is completed cover the second image and expose the balance of the negative for an additional 2-3 minutes. Repeat this procedure until each image has been exposed with the additional exposure time. (Example: a 6 image negative- exposure time / image 8,10,12,14, 16, 18 min.)
- 7) Wash and dry the test plate. Examine the results represented in each of the image segments and determine which exposure exhibits the desired image detail. This test should be performed periodically to maintain plate quality.

Reminder: It's better to perform the tests to assure that platemaking conditions and quality remain constant rather than to remake the plate once on press.