<u>UV Intensity Uniformity Test of Your UV Flexo System with UV FastCheck™ Strips</u>

Whether you are using a single or multi-lamp UV Flexo system, it is crucial that your UV lamps have a consistent UV intensity output. An uneven intensity distribution can lead to hot and cold spots in your curing, causing spoiled product.

1. You need to perform this test for each of the UV lamps in your UV curing system individually.

2. Turn on only one UV lamp at a time.

3. Set your web to a manageable rate (50 ft/min or 100 ft/min) so as to be able to retrieve the Strips after they have passed beneath the UV curing lamp.

4. Remove 3 adhesive backed UV FastCheck Strips from their carrier sheet and stick them securely onto the left, center, and right portions of the web to be passed under the first UV curing lamp. Orient the Strips to run parallel to the web in the direction of travel.

    UV lamps deteriorate from the outer ends first. If a lamp in your system is beginning to fail, the ends are typically where you will first notice the UV intensity drop off.

5. Run the press.

6. Remove the exposed Strips (either by cutting that section out or by peeling off the exposed Strips). Next to each of the 3 Strips, record what position it was in (left, center, or right) and which UV lamp it was exposed to (1st, 2nd, etc).

7. Continue this process until all of the UV lamps in your system have each been tested.

8. Examine the exposed Strips for each lamp in your UV curing system. If your system has a uniform UV intensity across the web and from lamp to lamp, all of your Strips should have the same color pattern. If color differences are noticed, determine which lamp(s) are performing differently.

NOTE: Keep your exposed Strips away from light sources (in an envelope in your desk drawer) so that ambient UV won't continue the color change.

Establish Your Own Reference UV FastCheck™ Strips for "Good" and "Bad" UV Cure

1. Set-up your UV curing system at a speed and intensity that you know it is curing properly.

2. Remove one adhesive backed UV FastCheck Strip from the carrier sheet and stick it securely onto the material that you will be passing through your UV curing system. Pass the material with the Strip through your UV curing system at the speed and intensity that matches step 1 above. This becomes the reference Strip for "good" cure.

3. Now, monitor the curing characteristics as you incrementally increase your line speed. When it is just beginning to undercure, pass another UV FastCheck Strip through your UV curing system. This becomes the reference Strip for "bad" cure.

4. You now have your reference Strips representing "good" and "bad" cure. If so desired, you can add a third, helpful reference Strip: the "minimum cure" Strip.

   A "minimum cure" Strip will represent the point at which product is still successfully curing, but it is time to perform maintenance on your UV curing system. (That may mean swapping your UV lamps and/or reflectors for new ones, or simply cleaning from them the residue that accumulates over time.) *Remember, UV FastCheck Strips only indicate UV dose received. They do not tell you what is causing the decline in measured UV dose. That is up to you to ascertain.*

5. To create a "minimum cure" Strip, gradually decrease the line speed from the setting you used to create the "bad" product. Pass UV FastCheck Strips through your system just until a noticeable color change is observed. Once a visual difference has been reached, check to ensure that you are successfully curing your product. This Strip now becomes your 3rd reference Strip: The "minimum cure" Strip.

6. *Keep your reference Strips away from light sources (in an envelope in your desk drawer) so that ambient UV won't continue the color change.*

7. You need to establish how often you are going to evaluate your UV curing system. Some send a UV FastCheck Strip through their system at the beginning of each day. Others at the start of each shift. Some every hour. Whatever you determine your needs to be, you must compare each FastCheck Strip tested to your reference Strips prior to curing this product* on this UV curing machine.*

* Each machine and each product cured on it will require its own reference set. Additional reference sets will need to be created if this product is cured on different UV curing machines.