

The Mottle Test

The term mottle is widely used throughout the printing trade and the paper industry to describe a printed image that is non-uniform. Sometimes mottle can be seen on white paper in the form of non-uniform gloss. But the most elusive is the type of mottle that appears during printing as spots of varying density. Since mottle on a job has various causes, we use a test that looks only at the variation in surface absorption to ink oils.

We call this our “*Mottle Test*”.

This test, by itself, cannot predict any type of print mottle. What it does show is how the paper’s surface absorbs or sets, ink. Many laboratory procedures for mottle include multiple prints on one area of the paper. The issue with this is that this type of print test often causing picking, or failure of the paper surface. There is no picking in our test on most offset sheets (although some experimental laboratory sheets may).

One thing we know is that when inks are out of tack sequence, not only do they not produce the desired color, or trap values, but they typically show non-uniform trap, or mottle as well. This is due to the fact that most papers are not completely uniform in their ability to absorb ink oils from the ink.

Our mottle test is designed after the fact that inks in the wrong tack sequence will show mottle. We use 2 inks: A low tack varnish and a high tack sheet fed cyan ink. Testing is performed on our TestPress. The varnish is printed first, and then after a short time delay, we overprint it with the high tack cyan ink. The fast setting areas on the paper surface will trap more of the cyan than the slow setting areas, and show patterns of mottle unique only to that paper.

The mottle tests can be rated visually, from “Best” to “Worst”, we use 1-5 ratings. They can also be read on the Verity IA image analyzer to place a numerical values on the non-uniformity.

The results of this test are considered with the results of the P&I Stability test, the Water Sensitivity Test, and the ink properties, to determine the type of mottle press.



Photo showing blanket ready for the mottle test. From left to right, 4 films of ink and varnish. Film thickness of each is 0.05 mil



Photo showing sheet after the varnish is printed.

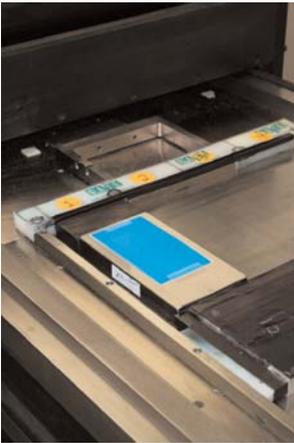


Photo showing sheet after cyan is trapped onto the varnish.

