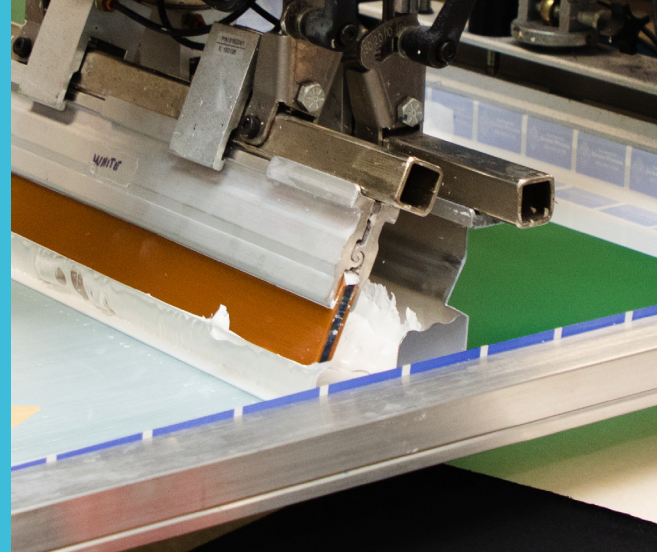


SCREEN PRINTING TEST PROCEDURES

TEST PROCEDURES FOR SCREEN PRINT SHOPS

There are many factors that can influence the success of your screen printing projects including dye migration, ghosting, and crock. However, testing your screen printing garments, ink, and equipment in advance for these issues can ensure a successful, smooth print job. Learn how these common screen printing errors can be avoided by completing the tests below.



DYE MIGRATION TEST

Dye migration, or dye bleed, occurs when plastisol inks are heated to temperatures higher than 265°F (130°C). Dye in the garment can move into the ink itself, causing discoloration of the plastisol ink. This heat-related defect can be costly to printers, especially when working with expensive performance garments. Taking steps to prevent and test for dye migration can be crucial in achieving a good-quality print.

1. Lay test fabric on transfer machine.
2. Apply a quarter-size spot of plasticizer (K2910 Viscosity Buster) or clear gel ink.
3. Lay a piece of white cloth or Pellon on top of the plasticizer.
4. Heat press at 320°F (160°C) for 30 seconds.
5. Remove from the press and check the white fabric for staining. Any staining on the white fabric indicates dye migration.

Note: All polyester colors will migrate; this test gauges the severity of migration and allows you to choose the proper low bleed ink.

6. Test several fabrics (previous production runs) and compare the stain characteristics to the test stain to determine pass/fail results.

If your prints show signs of dye migration, choose a low bleed white, poly white, or a bleed blocker as your first layer and repeat the dye migration test.

ACCELERATED HEAT AGE DYE MIGRATION TEST

To further test dye migration, we recommend also conducting an accelerated heat age test. This allows screen printers to see the potential long-term effects of dye migration in your garments.

1. Print the design on fabric that contains colored polyester.
2. Cut the design in half.
3. Expose half of the design to 122°F (50°C) for 24 hours.
4. This will simulate bleed from the garment into the ink that would typically occur in 1 to 7 days.

If your prints show signs of dye migration, choose a low bleed white, poly white, or a bleed blocker as your first layer and repeat the dye migration test.





GHOST TEST

Ghosting is a chemical reaction between a low bleed white ink and dye. Ghosting occurs when hot garments are stacked on top of each other, causing the appearance of a faint transferred image on a shirt.

1. Print on fabric with plastisol ink and cure as recommended.
2. Lay test fabric on the transfer machine and moisten the print area.
3. Fold part of the unprinted fabric over the moistened print area.
4. Heat press at 250°F (121°C) for 30 minutes.
5. Remove from the press, unfold the fabric, and check the unprinted portion of the garment for a ghost effect.

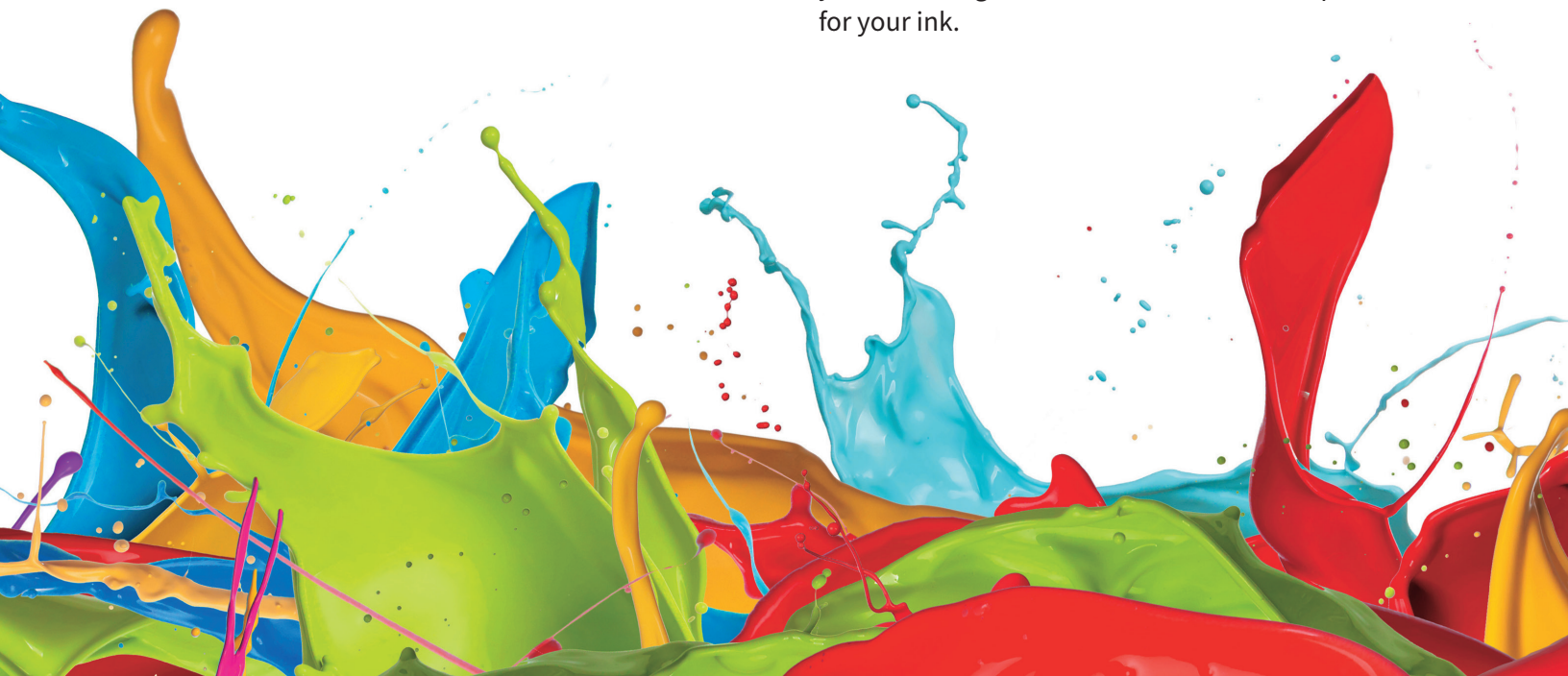
If ghosting appears, switch to a cotton white ink and avoid stacking hot garments.

CROCK TEST USING AATCC TEST METHOD 8-1989

In screen printing, crock refers to a print's potential to release color when rubbed. Naturally, deeper colors can tend to perform worse than lighter colors due to a higher pigment loading. The AATCC 8-1989 test method measures crock by determining the amount of color transferred from the surface of colored textile materials to other surfaces by rubbing. The full test method is proprietary and can be purchased from AATCC. This test requires a cooled sample print, crock cloth, crock meter, and AATCC Chromatic Transference Scale.

A result of 3.5 or above indicates passing.

If the result is less than 3.5 on the AATCC Chromatic Transference Scale, add a clear base as a coating for layers that do not pass the crock test or fully replace the color that failed the crock test. Poor crock on plastisol inks may also indicate under-cure; ensure you are hitting the recommended cure temperature for your ink.



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