

Introduction

Scumming of the lithographic plate in offset printing may be caused by the printed paper. During offset printing paper is moistened by the rubber blanket. Depending on the number of times the moistening takes place (multi colour offset printing) and the resistance of the coating against water, certain components of the coating will be dissolved and deposited on the blanket, from which they are transferred to the plate. This may lead to discolouration in the non-image areas of the print. This phenomena may be of dual nature: tinting and scumming. Tinting occurs when the paper components are decreasing the interfacial tension between ink and water in such a way that an ink/water emulsion is formed. The scumming is the result of a decrease in the water sensitivity of the offset plate, so that non-image areas accept ink and is the more serious as it may be ruining the plate during the press run. The scumming test is a rapid and simple method to access the tendency of offset papers to scumming. The practical conditions are approximated as much as possible in this laboratory test.

Principle

Moistened offset paper is brought into close contact with a strip of aluminum offset plate during a certain time. Subsequently the moistened strip of offset plate is printed. Papers with a tendency to scumming cause ink to be deposited on the strip of aluminum.

Method of operation

- It is recommended to execute the test in the standard atmosphere; to most standards it is $23,0 \pm 1,0$ °C and $50 \pm 2\%$ rh.
- For the operation of the AIC2-5T2000, Global Standard Tester, Inking Unit and ink pipette follow the instructions of the manuals, IGT information leaflet W100 and the displays accurately.
- Handle the samples carefully.

Preparation

- Condition the papers, the ink and equipment during > 6 hours in the standard atmosphere.
- Cut the paper strips and mark them with top and/or bottom side, machine and/or cross direction and a code for the type of paper.
- Remove the brush from the tester.
- For AIC2-5T2000 only:
 - Adjust the printing force of the top printing disc shaft to 450 N and pay attention for the right backlash. See W100.
 - Adjust the printing speed to 0,2 m/s in the constant speed mode (□).
- For GST2/3H only:
 - Select the menu "Scumming" in the display.
- Fill the ink pipette with the offset ink.
- For High Speed Inking Unit 4 only:
 Adjust the unit with the following settings:
 - Water bath: 23,0 °C
 - Top roller: 4-segmented, rubber for conventional inks
 - Mode: 2
 - Startup time: 10 s
 - Distribution time: 20 s
 - Distribution speed: 0,5 m/s
 - Inking time printing discs: 15 s
- For inking unit AE FOUR only: see manual or W100.

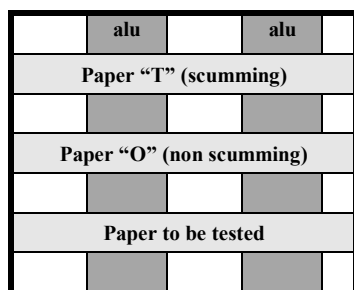


Fig.1 Strips of aluminum and paper

Materials / Testing conditions

1	IGT AIC2-5T2000 or IGT Global Standard Tester 2 or IGT Global Standard Tester 3H	710.000.000 412.000.000 467.000.000
2	IGT High Speed Inking Unit 4 or IGT inking unit AE FOUR	466.000.710 465.000.710
3	Top roller with 4 segments for conventional inks	466.003.003
4	IGT ink pipette	408.000.200
5	Printing disc, rubber, 65 Shore A, 35 mm	402.681
6	Strips of aluminum offset plate, 50 mm	404.009.014
7	Strips of paper "T" (scumming), 22 mm	404.002.015
8	Strips of paper "O" (non-scumming), 22 mm	404.002.012
9	Stop out solution	404.008
10	IGT offset ink	404.003.003
Strips of paper to be tested (25*270 mm ² , 3 strips per type of paper) Sheet of glass (about 300*400 mm ²) Blotting paper (about 300*400 mm ²) Plastic foil (about 300*400 mm ²) Tap water or fountain solution Lint free rags and cleaning naphtha		
Printing force		450 N
Printing speed		Constant, 0,2 m/s
Ink film thickness (volume)		4,8 µm (0,19 cm ³)
► The numbers 1 thru 10 are available at IGT Testing Systems..		

Execution

- Prepare the contact of the strips of offset plate with the strips of paper:
 - Remove the light sensitive layer from three strips of aluminum offset plate by rubbing them with cotton wool soaked in stop-out solution.
 - Rinse the strips thoroughly with water and keep them drenched in water or fountain solution.
 - Put the wet strips of plate with 15 mm distance side by side on the sheet of glass with the cleaned side up. Keep the strips flooded with water or fountain solution.
 - Put strips of the paper to be tested, paper strips "T" (scumming) and paper strips "O" (non-scumming) with 15 mm distance across the plate strips. NOTE: Do not use 40 mm from the top and bottom of the plate strips in connection with possible fingerprints.
 - Record the sequence of the paper strips.
 - Cover the strips with a sheet of blotting paper soaked in tap water or fountain solution and pour tap water or fountain solution on the blotting paper.
NOTE: The blotting paper and the plastic foil (see point 1.7) should not cause scumming. Before using these materials in a test they have to be examined following the method described in this Information Leaflet.
 - Cover this combination (glass, strips and blotting paper) over with plastic foil (see note in point 1.6).
 - Leave for about 3 hours.
- Apply 0,19 cm³ of IGT offset ink to a segment of the inking unit and distribute the ink during the preset or desired time.
NOTE: It is not advised to add some ink after a test.
- Place the printing disc on the printing disc shaft of the inking unit and ink the disc during the preset or desired time.
- Take a wet plate strip from the sheet of glass and mount it on the sector by attaching the beginning of the test strip into the front clamp and if desired, fixing the end of the test strip on the sector with a piece of tape.
- Remove the printing disc from the inking unit and place it on the top printing disc shaft of the tester.
- Make a print. See W100.
- Observe if ink has been transferred to the location of the strip, which had contact with the paper "T":
 - If no ink no ink has transferred, make new prints on the test strip until the ink has transferred at the location of the strip, which had contact with paper "T".
 - If ink has transferred, continue with point 8.
- Remove the plate strip from the sector.
- Check on which parts of the strip ink has been deposited as pointed out in the chapter "Assessment".
- Remove the printing disc from the tester and clean it with the rags and cleaning naphtha and let it dry.



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11. Use the next segment for the following test or clean the rollers of the inking unit.
12. Repeat the points 1 thru 11 for each strip of plate. It is recommended to perform the test at least three times per sample.
13. After finishing the tests clean and store all parts as described in the manuals.
14. Make an accurate record of the conditions and the results of the test and refer to W21.

Assessment

1. Examine the plate strip visually which parts have accepted ink (see figure 2):
 - ☐ Paper "T": the plate accepted ink.
 - ☐ Paper "O": the plate did not accept ink
 - ☐ Paper to be tested:
 - The plate accepted ink, so the paper is causing scumming
 - or
 - The plate did not accept ink, so the paper does not cause scumming.
2. Repeat point 1 for each test strip.

Notes:

1. The maximum storage life of the offset ink in the original, closed packing is 1 year; in an opened packing 3 months.

	Offset plate
No contact with paper ►	
Contact with paper "T" ►	Scumming
No contact with paper ►	
Contact with test paper ►	Scumming or non scumming
No contact with paper ►	
Contact with paper "O" ►	Non scum- ming
No contact with paper ►	

Fig.2 Aluminum strip with result of scumming test

► 2006: In comparison to older IGT leaflets, the time of contact between the papers and offset plate is longer now: 3 hours and this leaflet is valid for the AIC2-5T2000 and Global Standard Testers.

► 2012: This leaflet is valid for the AMSTERDAM and AE FOUR as well and contains some small text corrections.

► 2017: This leaflet is valid for the AIC2-5T2000 and GST2/3H only and contains some small text corrections.