

**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 aluminium 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 aluminium

**Method of operation:**

- It is recommended to execute the test in the standard atmosphere; to most standards it is 23.0 ± 1.0 °C (73.4 ± 1.8 °F) and 50 ± 2% rh.
- For the operation of the AIC2-5, the High Speed Inking Unit 4 and the ink pipette follow the instructions of the manuals, IGT information leaflet W100 and the displays accurately.
- Handle the samples carefully.

**Preparation**

1. Condition the papers, the ink and equipment during > 6 hours in the standard atmosphere.
2. Cut the paper strips (preferable 25 x 270 mm, 2strips per sample) and mark them with top and/or bottom side, machine and/or cross direction and a code for the type of paper.
3. Remove the light sensitive layer from three strips of aluminum offset plate by rubbing them with cotton wool soaked in stop-out solution.
4. Rinse the strips thoroughly with water and keep them drenched in water or fountain solution.
5. 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.
6. 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. Do not use 40 mm from the top and bottom of the plate strips in connection with possible fingerprints.

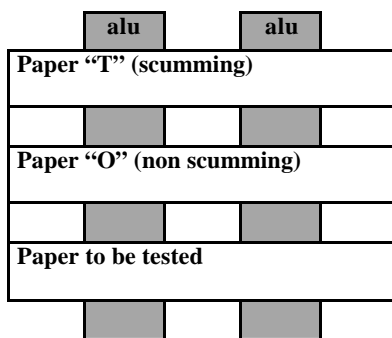


Fig.1 Strips of aluminium and paper

Materials / testing conditions		
1	IGT AIC2-5 from type AA	414
2	IGT High Speed Inking Unit 4 (with 4 segmented toproller for conventional inks)	466.410.100 (466.003.003)
3	IGT ink pipette	408.200
4	Printing disc with coated rubber, 65 Shore A, 35 mm	402.081
5	Strips of aluminium offset plate, 50 mm	404.009.014
6	Strips of paper "T" (scumming), 22 mm	404.002.015
7	Strips of paper "O" (non-scumming), 22 mm	404.002.012
8	Stop out solution	409.008
9	IGT offset ink	404.003.003
10	Strips of paper to be tested (25 x 270 mm, 2 strips per type of paper)	
11	Sheet of glass (about 300 x 400 mm)	
12	Blotting paper (about 300 x 400 mm)	
13	Tap water or fountain solution	
14	Lint free rags	
15	Cleaning naphtha	
Printing force		450 N
Printing speed		constant speed, 0.2 m/s
Ink film thickness		4.8 µm
The numbers 1 thru 9 are available at IGT Testing Systems. The numbers 4 thru 9 can be obtained as Scumming Test Set for AIC2-5 from type AA, article number .....		

7. Record the sequence of the paper strips.
8. Cover the strips with a sheet of blotting paper soaked in tap water of fountain solution and pour tap water or fountain solution on the blotting paper (see note 4).
9. Cover this combination (glass, strips and blotting paper) over with plastic foil (see note 4).
10. Leave for about one hour.
11. Adjust the printing force of the upper printing disc shaft to 450 N and pay attention for the right backlash. See W100.
12. Adjust the printing speed to constant speed (□), 0.2 m/s.
13. Check and if needed, move the slide in front of the sector into the constant speed mode (□).
14. Take off the brush from the tester.
15. Check the functioning of the AIC2-5 following the instructions in the chapter "Execution".
16. Fill the ink pipette with the offset ink.
17. Adjust the High Speed Inking Unit with the settings mentioned in note 2.
18. Check the functioning of the High Speed Inking Unit.

**Execution**

1. Apply 4.8 µm of ink to the inking unit and distribute the ink. See note 3 or the manual of the inking unit.
2. Place the printing disc on the printing disc shaft of the inking unit and ink the disc during the preset time.
3. Take a wet plate strip from the sheet of glass and mount it on the sector.
4. Remove the printing disc from the inking unit and place it on the (top) shaft of the tester.
5. Turn the sector into the starting position.
6. Press one of the side buttons to start the motor.
7. Move the printing disc into printing position against the plate strip.
8. Press the other button as well to make a print.
9. After the sector has stopped, release the side buttons.

## W21 for IGT AIC2-5 from type AA

10. Move the printing disc out of printing position.
11. Observe if ink has been transferred to the location of the strip, which had contact with the paper "T".
12. If no ink has transferred, repeat the points 5 thru 11 until the ink has transferred at the location of the strip, which had contact with paper "T".
13. Take off the plate strip from the sector.
14. Check on which parts of the strip ink has been deposited as pointed out in the chapter "Assessment".
15. Remove the printing disc from the tester and clean it with the rags and naphtha.
16. Clean the rollers of the inking unit or use the next segment for the following test.
17. Repeat the points 1 thru 16 for each strip of plate. It is recommended to perform the test at least three times
18. After finishing the tests clean and store all parts as described in the manuals.
19. Make an accurate record of the conditions and the results of the test.

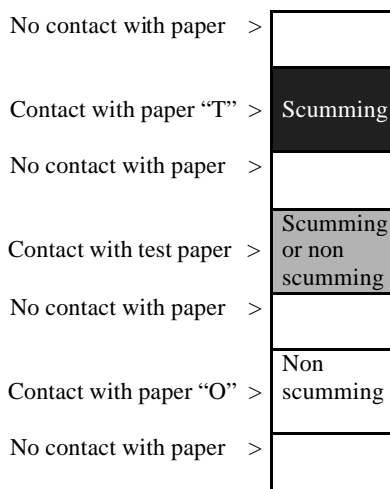


Fig. 2: aluminium strip  
with result of scumming test

### Assessment

1. Examine the plate strip visually on 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 test results of the AIC2-5 and the Global Standard Testers 2, 3 and 3H compare well with another on the condition that the tests have been carried out under the same testing conditions.
2. It is advised to use the following settings for the High Speed Inking Unit 4:
 

Water bath	: 23.0° C (73.4° F)
Toproller:	4-segmented, rubber for conventional inks
Mode	: 2
Starting time	: 5 s
Distribution time	: 10 s
Distribution speed	: 1.2 m/s
Inking time printing discs	: 5 s

3. To reach an ink film thickness of 4.8 µm on the High Speed Inking Unit 4 with a 4-segmented toproller a quantity of 0.192 cm<sup>3</sup> has to be applied. It is not advised to add some ink after a test.
4. The blotting paper and the plastic foil should not cause scumming. Before using these materials in a test they have to be examined following the method described in this Information Leaflet.
5. The maximum storage life of the offset ink in the original, closed packing is 1 year; in an opened packing 3 months.

This information leaflet has been compiled with the utmost care. However, may you find any inadequacies or if there are any comments, we kindly request you to send these to IGT Testing systems, Sales Department