

## Introduction:

Most commonly picking of paper is defined as the damage of the paper surface during the printing operation. At the time the printing form is lifted off the paper the ink is exerting a certain force on the paper. This force is increasing with an increase in the viscosity and tack of the ink and the printing speed. When this force exceeds a certain value, the surface of the paper will be damaged.

This damaging is tested as pick velocity and/or pick resistance in W31, W38, W65 and W75. Sometimes this qualitative pick testing method does not show differences between papers with a poor pick velocity or pick resistance, e.g. newsprint. For these types of papers it can be advised to use a quantitative testing method to test the surface strength. This test is called "linting".

This information leaflet W44 describes the method with a printing disc covered with rubber of 85 Shore A, W70 with a printing disc with rubber of 65 Shore A.

## Principle

A print is made with a test ink on the paper with an IGT printability tester. An increasing speed is used. The picking result is observed visually as the amount of fibres which has been pulled off from the surface of the paper.

## 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 ( $73.4 \pm 1.8$  °F) and  $50 \pm 2\%$  rh.
- For the operation of the AIC2-5T2000, Global Standard Tester, High Speed Inking Unit and 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 the equipment during >6 hours in the standard atmosphere.
2. Cut the paper strips (preferable 55 x 340 mm, 5 strips per sample) and mark them with top and/or bottom side, machine and/or cross direction and a code for the type of material.
3. For AIC2-5T2000 only:
  - 3.1. Adjust the printing force of the upper printing disc shaft to 625 N and pay attention for the right backlash. See W100.
  - 3.2. Adjust the desired printing speed in the increasing speed mode. (▲).
4. For GSTP/1/1W only:
  - 4.1. Select the menu "Linting" in the display.
  - 4.2. Adjust the desired end speed.
5. Check the functioning of the tester following the instructions in the chapter "Execution".
6. Fill the ink pipette with the desired ink.
7. Adjust the High Speed Inking Unit with the following settings:
  - Water bath: 23.0° C (73.4° F)
  - Top roller: 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
8. Check the functioning of the High Speed Inking Unit.

## Execution

1. Apply 0.35 cm<sup>3</sup> of ink to a segment of the inking unit and distribute the ink. NOTE: It is not advised to add some ink after a test.
2. Place the printing disc on the printing disc shaft of the inking unit and ink the printing disc.
3. Adjust the printing speed, if necessary.
4. Attach a test strip in the front clamp of the sector.

## Materials / testing conditions

1	IGT AIC2-5T2000 or IGT Global Standard Tester P or IGT Global Standard Tester 1 or IGT Global Standard Tester 1-W	710.000.000 470.000.000 410.000.000 415.000.000
2	IGT High Speed Inking Unit 4	466.000.710
3	(Top roller with 4 segments for conventional inks)	(466.003.003)
4	IGT Ink pipette	408.000.200
5	Printing disc, with coated rubber, 85 Shore A, 50 mm, ø 68 mm	402.333
6	Huber pick test ink 2, medium tack or Huber pick test ink 1, low tack or Huber pick test ink 3, high tack	404.800.002 404.800.001 404.800.003
7	Strips of paper to be tested, preferable 55 x 340 mm, 5 strips per sample	
8	Lint free rags	
9	Cleaning naphtha	
Printing force		625 N
Printing speed		Increasing, end speed at choice
Ink film thickness (volume)		8.0 µm (0.35 cm <sup>3</sup> )
► The numbers 1 thru 6 are available at IGT Testing Systems. ► The numbers 5 and 6 (Ink 2 medium tack) can be obtained as Linting Set for IGT AIC2-5T2000 and GST 2/3/3H, article number 483.000.710.044. •This leaflet contains article numbers per January 1st, 2006•.		

5. Take the printing disc from the inking unit and place it on the printing disc shaft of the tester.
6. Make a print. See W100.
7. Remove the test strip from the sector.
8. Measure the test result as explained in the chapter "Assessment" immediately after the test.
9. Take the printing disc from the shaft and clean it with rags and naphtha.
10. Repeat point 1 thru 9 for every strip. It is recommended to perform the test at least 5 times per sample.
11. After having finished the test, clean and store all parts as described in the manuals.
12. Make an accurate record of the conditions and the results of the test.

## Assessment

1. Judge the damaging (fibre lifting) in the print visually and describe it preferable in comparison to a self made scale or other papers.
2. Repeat point 1 for each test strip.
3. Calculate the average and if required the standard deviation. In some cases it may be useful to mention the highest and lowest value as well.

## Notes:

1. The test results of the AIC2-5T2000, AIC2-5 and Global Standard Testers P/1/1-W compare well with one another, on the condition that they have been carried out under the same conditions.
2. The maximum storage life of the ink in the original packing is 3 years, in an opened packing 1 year.

► In comparison to older IGT leaflets, this leaflet is valid for the AIC2-5T2000 and Global Standard Testers as mentioned

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.