Introduction
The ink transfer of the rubber blanket is one of the factors that influence the final print quality. The ink transfer is influenced by the structure of the blanket. This means when there is a difference in the structure of rubber blankets, there can be a difference in the ink transfer and this can lead to a certain difference in the print quality. In this method the ink transfer is tested by printing from a rubber blanket after inking this blanket for several times.

Principle
A strip of the rubber blanket to be tested is placed on the sector of the IGT printability tester. The blanket is inked from an inked aluminium printing form for several times and after every inking the ink is transferred from the blanket to a strip of a standard paper. The density on the printed paper strips is measured. The higher the density and the quicker the maximum density has been reached, the more ink has been transferred from the blanket.

Method of operation
- It is recommended to execute the test in the standard atmosphere; to most standards it is 23,0 ± 1,0 °C and 50 ± 2% rh.
- For the operation of the AIC2-5T2000 and 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
1. Condition the papers, the ink and the equipment during >6 hours in the standard atmosphere.
2. 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.
3. Shorten the paper strips, IGT code C2846, to a length of 200 mm.
4. Take off the brush from the tester.
5. For AIC2-5T2000 only:
   5.1. Mount a strip of a rubber blanket on the sector. See W100.
   5.2. Adjust the printing force of both printing disc shafts to 625 N and pay attention for the right backlash. See W100.
   5.3. Adjust the printing speed to 0,2 m/s in the constant speed mode (□).
   5.4. Take off the rubber strip from the sector.
6. For GST 2 only:
   6.1. Select the menu "wet-on-wet 2 fields" in the display.
   6.2. Adjust the interval timer to 0 s.
7. Fill the ink pipette with the IGT Density ink.
8. For High Speed Inking Unit only:
   Adjust the unit with the following settings:
   - Water bath: 23.0 °C (73.4 °F)
   - 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
9. For inking unit AE FOUR only: see manual or W100.

Fig. 1: Ink transfer with GST2

Execution
1. Mount a strip of the rubber blanket to be tested on the sector. See W100 "rubber blanket".
2. Mount a strip of the paper with the side to accept the smeared ink facing outward, with a piece of tape at the beginning and the end of the strip on a clean printing disc.
3. Place the disc with the paper on it on the bottom printing disc shaft of the tester and turn it in such a way that the beginning of the paper is pointing upward.
4. Apply 0,10 cm³ (for 2.4 µm) or 0,20 cm³ (for 4.8 µm) of ink to every segment of the inking unit and distribute the ink during the preset or desired time.
5. Place the four printing discs on the printing disc shafts of the inking unit and ink the discs during the preset or desired time.

Materials / Testing conditions		
1	IGT AIC2-5T2000	710.000.000
	or IGT Global Standard Tester 2	412.000.000
2	IGT High Speed Inking Unit 4	466.000.710
	IGT Inking unit AE FOUR	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, aluminum, 50 mm (5x)	402.331
6	IGT Density ink	404.003.001
7	Strips of reference paper, 55 mm,[2] IGT code C2846	404.009.029
Strips of rubber blanket to be tested, preferable 55*340 mm², 3 strips per sample		
Densitometer		
Lint free rags and cleaning naphtha		
Petroleum ether		
Printing and set off force	625 N	
Printing and set off speed	Constant, 0,2 m/s	
Time between printings	60 s	
Ink film thickness (volume)	2,4 µm (0,10 cm³) and 4,8 µm (0,21 cm³)	
►The numbers 1 thru 7 are available at IGT Testing Systems.		

6. After the printing discs have been lifted from the top roller add 0,025 cm³ (for 2,4 µm) or 0,05 cm³ (for 4,8 µm) of ink to all segments of the inking unit to keep the right ink film thickness and distribute the ink.
   NOTE: it is allowed to add some ink for only one time.
7. Take the first inked printing disc from the inking unit and place it on the top printing disc shaft of the tester.
8. Make a print in which the rubber blanket strip is inked and the ink is set off to the paper strip. See W100.
9. Within the next 60 seconds:
   9.1. Quickly take the printing disc with ink from the top shaft, clean it with rags with naphtha and thereafter with rags with petroleum ether, dry it and place it back on the printing disc shaft of the inking unit and ink it again.
   WARNING: petroleum ether is very light flammable!
   9.2. Quickly take the printed paper strip from the bottom printing disc and mount a new strip of paper on it.
   9.3. Quickly take the next inked printing disc from the inking unit and place it on the top printing disc shaft of the tester.
10. After 60 s after making the print before make a print again; the rubber blanket is inked for a second time and the ink is set off to the paper strip again.
11. Repeat point 9 and 10 for the next 6 times.
    NOTE: After having made 4 prints, the 1st printing disc can be used and after that the 2nd, 3rd and 4th one. So, totally 8 prints and set offs have been made.
12. After having made the 8 prints, clean the rubber blanket with rags with cleaning naphtha and with rags with petroleum ether and allow it to dry.
    WARNING: petroleum ether is very light flammable.
13. Clean the rollers of the inking unit and the printing discs with rags with naphtha and rags with petroleum ether.
    WARNING: petroleum ether is very light flammable.
14. Repeat the points 2 thru 13 for an ink film thickness of 4,8 µm.
15. Repeat the points 1 thru 14 for every test strip of rubber blanket. It is recommended to execute the test at least three times.
16. Allow the ink of the printed paper strips to dry for 5 hours in the standard atmosphere.
17. Measure the test results as described in the chapter "Assessment".
18. After having finished 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 tests and refer to W74.

Assessment:
1. After >5 hours after making the print measure the contrast density of the printed paper strip at least 10 times per strip.
2. Repeat point 1 for every strip.
3. For every type of blanket and every testing condition calculate the average of the measured densities.
4. If desired calculate spreading and/or standard deviation. Sometimes it may be useful to not the highest and lowest values as well.

►►

W74 for IGT AIC2-5T2000, GST 2

Notes:

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

►2006: In comparison to older IGT leaflets, this leaflet is valid for the AIC2-5T2000 and Global Standard Testers as mentioned.
►2012/2017: This leaflet contains some small text corrections.

IGT Testing Systems, P.O.Box 22022, 1302 CA ALMERE, The Netherlands / Randstad 22-02, 1316 BX ALMERE, The Netherlands
T: +31 (0)20 409 9300 F: +31 (0)20 409 9339 info@igt.nl http://www.igt.nl