

# Where does the slimy coating on fountain rollers come from?

AN EXPERT REPORTS FROM THE COAL FACE (15). Smearing kept on occurring during production on a web offset press. Although the printer kept on increasing the speed of the damping duct roller, too little damping solution was reaching the plates. Printing only became possible again once the damping unit's rollers have been cleaned — but then after roughly 3,000 to 5,000 copies the same 'smearing effect' reappeared. The metering of the damping solution, the conductance and the pH value all matched the manufacturer's specifications. The expert was called in to find the cause of this effect.

It was agreed with the printer that production would be monitored until the 'smearing effect' occurred. Prior to commencement, the damping solution was again measured in accordance with the guidelines of the fountain additive supplier.

Once again no deviations from the target values were found. The soiling of the damping solution circuit could also be classed as normal for a fast running commercial web press.

**HOW THE EFFECT ARISES.** Printing began after carefully cleaning the rollers of all the damping units. 'Smearing' — meaning that there was not enough fountain solution on the plates — began to appear after roughly 4,000 copies.

After again carefully cleaning the damping unit rollers, it was once more possible to print without problems, but then, after about 4,000 copies, the smearing effect reappeared.

Interestingly, this effect appeared first in the middle printing units and then spread to the outer ones. It was now also possible to detect 'slimy' residues on the elastomer (rubber) coverings of the fountain rollers. These residues were colourless and could easily be removed by cleaning the roller surfaces.

**ORIGIN OF THE RESIDUES.** Where do the 'slimy' residues on the roller surfaces come from? A careful investigation of the basins in the damping solution premixing station revealed nothing that would indicate



Figure 1: Culture medium carrier after 24 hours in the incubation cabinet (dot pattern).

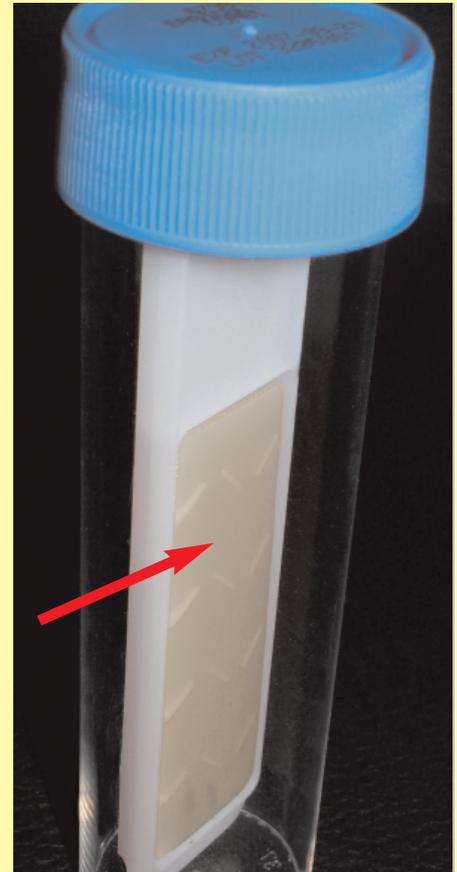


Figure 2: Test tube with culture medium carrier (red arrow) to demonstrate the presence of micro-organisms.

'slimy' or 'jelly-like' residues. However, the jelly-like residues actually on the roller surfaces had a characteristic, 'sickly sweet' odour. Using a micro-organism test kit, a swab was taken directly from the surfaces of the fountain rollers. This involved removing the culture medium carrier (figure 2, red arrow) from the test tube and placing it in contact with the jelly-like traces on the fountain roller surfaces for a minimum of at least ten seconds. The culture medium carrier was then immediately returned to the test tube and screwed tight, so ensuring that no external influence could affect the test.

**PRESENCE OF MICRO-ORGANISMS.** The test tube was then placed as quickly as possible in an incubation cabinet whose temperature was maintained at 30° C. After an incubation period of 24 to 48 hours the results can be visualized directly on the culture medium. Figure 2 shows the result

## Problems in the graphics industry

**DD Series** ■ Dr. Colin Sailer, a publicly appointed sworn expert for presses, offset and gravure printing, reports from real life. He has an engineering and expert investigation practice in Munich. (Tel.: +49 (0)89/69 38 85 94; web: [www.print-und-maschinenbau.de](http://www.print-und-maschinenbau.de)).



**Dr Colin Sailer**

- Part 13 ▶ Digital printer requires uninterrupted power DD 28  
 Part 14 ▶ Unsaleable prints due to poor maintenance DD 30  
 Part 15 ▶ Slimy coating on fountain rollers DD 32

after 24 hours in the incubation cabinet. With the aid of this test, which is very simple to carry out, it has been clearly demonstrated that the slimy residues on the fountain rollers are micro-organisms. By comparing the distribution pattern of dots on the culture medium carrier with reference patterns it was possible to classify the micro-organism infestation as moderate to heavy.

### AVOIDANCE – RECOMMENDATIONS.

How can micro-organisms be removed from and prevented from getting into the damping solution circulation?

In order to remove micro-organisms from the damping water circulation the entire circuit must be drained down and flushed for several hours with a suitable system rinsing agent. This removes the micro-organisms but the circuit must then be rinsed with damping solution to restore the acid conditions (pH of around 5.0) required for the damping solution circulation.

In order to avoid the appearance of these disruptive micro-organisms over the long term, it is important to adhere to the following measures, bearing in mind that alcohol-free offset printing favours the appearance of micro-organisms in damping solutions:

- Regular draining of the damping solution circuit and flushing for several hours with a suitable rinsing agent.
- The damping solution cooling should be set to as low a temperature as possible (8° C to 10° C).
- Metering of the damping solution concentrate.



Symposium

# Printing Ink and Paper

- Demands made of modern printing inks
- The combination of coldset and heatset – a new printing process?
- Waterless offset – economic advantages and publishing prospects
- Ghosting in sheet-fed offset
- Ghosting in web offset
- Invisible inks – hidden information and messages
- Influence of coating ink components on offset printability and the tendency of sedimentation
- Beneficial paper characteristics for the offset process
- Paper – Print[ing] interface: report about current research projects
- Hickeys, always a paper problem?
- The new ProcessStandard Offsetprinting and major research topics for continuous further development
- Drying of sheet-fed offset printing inks on uncoated paper
- Absorption processes during the printing of coated paper
- Setting of printing ink in paper – an appropriate laboratory method
- Mottling and setting – influences of different papers
- Performance of different printing inks on papers with different coating structures
- Trademark protection and special effects
- Differences in colour measurement between the printing and paper industry
- Paper: current problems regarding fluorescence, proof to print match and categorization
- Influences of process parameters in offset printing on the development of tackiness of printing inks on paper surfaces

A Fogra Graphic Technology  
 Research Association symposium  
 on 07/08 November 2007  
 in Munich/Germany

Don't miss it!

With simultaneous interpreting; for further information and your booking see [www.fogra.org](http://www.fogra.org)