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# Halftone Guidelines-ICC Profiles-Dot Gain

Revision: 02
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Scanning halftone images for offset printing is a challenging process that requires close attention to detail in order to achieve high-quality files. Judging the quality of a halftone scan is subjective and many factors contribute to the different effects seen from a viewer. While it is not possible to list specific scanner settings, specific halftone adjustment settings and many other variables that effect halftones, Sheridan can provide certain guidelines in order to assist you in creating the best possible halftone files for offset printing.

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## ICC (International Color Consortium) Profiles

ICC profiles contain data that determines color attributes from a device, in order to achieve more accurate color reproduction based on the file contents.

Sheridan recommends obtaining the following ICC profiles from the sites noted below as these sites continually release the latest versions available. Use the site search capabilities to search for the name of the specific profile that is needed.

Using the suggested ICC profiles below does not guarantee exact press match as there are numerous variables that contribute to the perception and reproduction of color.

- **GRACoL2006_Coated1v2.icc** available at http://www.idealliance.org
  This profile should be used on covers, dust jackets, printed case, etc., anything that will print on coated stock on our Komori or four-color Heidelberg presses. Note: This profile does not account for any type of lamination or varnish.
- **ISOcoated_v2_300_eci.icc** available at http://www.eci.org
  This profile should be used on anything that will print on coated stock on our eight-color Heidelberg press. Note: This profile does not account for any type of lamination or varnish.
- **PSO Uncoated ISO12647_eci.icc** available at http://www.eci.org
  This profile should be used on anything that will print on uncoated stock on our eight-color Heidelberg presses. Note: This profile does not account for any type of lamination or varnish.

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## Scanning Quality

A good quality scanner, such as a high-end flatbed scanner or drum scanner, should be used during the scanning process of the artwork. The resolution to scan at should be: 2 x the line screen the halftones will be printed at (example: 2 x 133 lpi = 266 dpi). Check with your Customer Service Representative for Sheridan current line screen usage.

## Highlights and Shadows

These terms are best described by the size of the halftone dot as a percentage of black/color. 100% black would be a solid and 0% black would be the color of the substrate being printed on. The values for Sheridan presses are:

| Coated Stock | Highlight Min | Shadow Max |
|---|---|---|
| Web Press | 2 | 90 |
| Sheetfed Press | 2 | 92 |

| Uncoated Stock | Highlight Min | Shadow Max |
|---|---|---|
| Web Press | 2 | 90 |
| Sheetfed Press | 2 | 90 |

## Dot Gain

Dot Gain is defined as the increase in the diameter of a halftone dot during the printing processes. There are many factors that contribute to dot gain such as paper types, press conditions, line screens, environmental factors, etc. The values for Sheridan Dot Gains are (based on a 40% patch):

| Gloss Coated Stock | Dot Gain |
|---|---|
| Web Press | 20-22% |
| Sheetfed Press | 15-18% |

| Uncoated Stock | Dot Gain |
|---|---|
| Web Press | 25-27% |
| Sheetfed Press | 22-25% |

| Matte Stock | Dot Gain |
|---|---|
| Web Press | 18-22% |
| Sheetfed Press | 17-18% |

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## D-Max

D-Max is defined as the measure of the greatest or maximum density of black ink attained by print in a given sample. The following are Sheridan D-Max readings on our presses:

| D-Max Wet | Web | Sheetfed |
|---|---|---|
| Gloss Coated Stock | 130-140 | 165-170 |
| Uncoated Stock | 120-125 | 125-130 |
| Matte Stock | 130-140 | 140-150 |

| D-Max Dry | Web | Sheetfed |
|---|---|---|
| Gloss Coated Stock | 1.32 | 1.56 |
| Uncoated Stock | 1.12 | 1.13 |
| Matte Stock | 1.20 | 1.30 |

The guidelines provided in this document are general guidelines only to a broad range of different paper stocks offered from Sheridan. By following these guidelines, Sheridan cannot guarantee a perfect-printing halftone as viewing halftones from person-to-person is a subjective process. Many factors can effect halftone quality during the manufacturing process such as temperature, humidity, blankets, fountain solutions, stock, etc. Sheridan prints to G7 standards which puts us in a position to provide high quality print.

Sheridan recommends that you receive Digital Halftone Proofs on titles containing black and white halftones that require specific reproduction requirements. These proofs are a very close match to how the halftones will produce on our offset presses. If the title has critical reproduction requirements, Sheridan suggests a press test to be ran. Press tests (for which there is a fee) are run on the actual offset press and paper stock that will be used during the production of your title. These sheets will be printed and sent to you for approval prior to the production of your job. If there is not time to perform a proper press test, Sheridan can provide a Folded & Gathered signature for an additional fee for your approval prior to the binding process.

Please contact your CSR with any questions.

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