

REPRODUCTION SPECIFICATIONS PREPARATION OF MATERIALS FOR PRINTING

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1. THE SCOPE OF THE SPECIFICATION

In order to assure the quality of the final product, it is necessary to prepare the content according to the specification guidelines. This document defines technical parameters as well as recommended methods of file and proof preparation that should be used to prepare materials delivered to RR Donnelley.

2. PAGE LAYOUT

All fonts and graphic elements of the page should be positioned at least within 4 mm from the book format line (after trimming); for Telephone Directories these elements should be placed within at least 5 mm from the book format line and TnT products at least 7 mm.

Minimal bleed of 3 mm is required for every page of a standard product. For Telephone Directories the minimal bleed of 5 mm is required.

Important graphic elements of the page should be placed 1 cm from the trim line. It is especially important in case of long elements, parallel to the page edges.

Thin lines (below 0,75 p.) or small graphic elements (i.e. checkers) should be prepared in one color. This also applies to fonts and objects printed with trapping (for typical fonts of 8 p. and below).

In case of perfect bound products, the final format of spreadsheets placed on the inside of the cover is diminished by the width of side gluing (3 mm for regular products and 5 mm for Telephone Directories).

Double Gutter Image (DGI): it is the file creator's responsibility to include double gutter image allowance, if required. The printer will not apply DGI. PUR binding requires minimal (or none) DGI.

Materials for jobs processed with in line gluing require additional 2 mm at the backbone.

In case of stitched jobs, the size of the outside pages diminishes proportionally to the book thickness, which has to be compensated for and requires the preparation of the so-called "push-outs". In order to minimize the push-out effect, upon Customer's request, RRD can include the necessary compensation at the imposition stage. It is done by the application of a special feature of the imposition software. Compensation values are calculated based on the paper basis weight and the number of pages in the final product. As the result of this operation pages are shifted towards the book backbone and some parts of the pages will be lost along the spine line. (the higher product page-count, the higher the compensation value and the more of the page is lost). If such a correction is needed, RRD assumes that it is included in the page design and the Customer is aware of the final result.

The signatures of press delivered jobs will contain small control elements, which are a necessary part of the printing process.

Images or pictures cannot be spread across two different types of paper, if paper fibers are perpendicular from one signature to another. This especially applies to the cover and first or last page of inner signatures.

3. COLOR SEPARATIONS AND PROOFS

Total Area Coverage should not exceed:

- 300% for web printing on coated and SC papers,
- 250% for web printing on NSI and TD papers,
- 350% for sheetfed printing on coated papers,
- 250% for sheetfed printing on uncoated paper.

In case of any doubts related to TAC, it is necessary to consult RRD.

Black solid areas should not consist of K only (TAC limit should always be maintained).

MaxK parameter should not exceed 95%.

4. PROOFING MATERIALS

Proofing materials should simulate printing executed according to International Standard ISO 12647-2:2004(E). RRD recommends using ICC methodology for proofing. In order to ensure maximum consistency of the printed product with the correctly produced color proof the printer can optimize the data necessary to characterize the printing process and the paper.

4.1. ICC PROFILES

RRD recommends the application of averaged ICC profiles for different paper classes. The profiles are available at RRD upon request:

- for WFC, MWC and LWC papers – *Donnelley_Coated.icc* or for FM screened jobs *Donnelley_Coated_Stacc.icc*,
- for SC papers – *Donnelley_SC.icc*,
- for NSI papers – *Donnelley_NSI.icc*,
- for TD papers – *Donnelley_TD.icc*.

If the paper shows characteristics that are untypical for its class (e.g. whiteness, surface finishing), the reproduction of some color areas can be limited. In such cases, it is recommended to prepare a separate ICC profile, which will describe printing characteristics for that type of paper more precisely.

It is allowed to use other available ISO profiles, however their application must be consulted with RRD.

The application of ICC profiles different than those supplied by RRD or ISO profiles, must be consulted with RRD.

4.2. PROOF VERIFICATION

The methodology of ICC profile implementation verification has been described in a separate document *Proof Verification Procedure*.

The control strip should be placed on every page. The recommended control strip is the Ugra/FOGRA MediaWedge V. 2.0.

Proofs for editorial pages and advertising materials should be printed in the same way.

Proof must be generated from the files supplied to RRD.

Providing a properly prepared proof is a condition for obtaining good matching between proof and printed sheet. Proofs, which do not meet the conditions defined in the above-mentioned document, cannot serve as reliable color guidance. For jobs for which color quality is particularly important in such case, or whenever there is no color proof, one may use as a reference a color proof prepared by the RRD at the cost of the customer.

4.3. VISUAL EVALUATION OF PROOFS

Visual comparison of proofs and printed materials ought to be conducted in standard viewing conditions according to ISO 3664:2000. Special recommendations include:

- the relative spectral distribution of the illuminant should be close to CIE illuminant D50 (corresponding color temperature of approximately 5000 K), CRI index should not be lower than 90 (recommended value < 95),
- the intensity of illumination on the viewed surface should be $2000 \text{ lx} \pm 500 \text{ lx}$,
- the surrounding area and background used for evaluation of the materials should be in neutral grey and matt.

5. FILE PREPARATION METHOD

5.1. ORIENTATION: portrait.

5.2. SCALE: 1:1 (pages can be scaled during PostScript™ code generation stage, but they must be submitted to RRD 1:1 scale).

5.3. PAGE DIMENSIONS: (paper width and height): constant for all pages, width and height of the document format should be enlarged approximately by 12,5 mm to contain bleeds, additional information, registration marks, crop marks etc. The content should be centered on the page. (Example for A4 size page).

Net Page Size - the only acceptable net page size is the size of a single trimmed page of the given publication (placed vertically). Advertising materials consisting of two pages have to be supplied as two separate pages. Advertising materials smaller than the full-page size must be positioned in the proper place on a single page.

5.4. CROP MARKS AND REGISTRATION MARKS: must be centered. Verification of the marks is the most important way to ensure that pages are set correctly on the imposition scheme. It is necessary to include 7 pt for crop marks offset. For Telephone Directories 5 mm offset must be included (all page description elements such as: separations and control patches, should also be positioned within at least 5 mm from the net format line).

IMPORTANT: all pages for the given title should be generated using the same set of parameters.

6. POSTSCRIPT GENERATION METHOD

6.1. DRIVER/PRINTER

Macintosh: recommended: LaserWriter 8.6.1

Windows: recommended: Adobe drivers (they can be downloaded from www.adobe.com web site), we do not recommend Microsoft drivers.

PPD: Prinergy Refiner (file available at RRD)

Other PPD files can be used if approved by RRD.

6.2. SEPARATED FILES

PostScript 3, legible, binary coded, all components in final resolution, fonts included.

The files should not contain MultipleMaster fonts or composite (2 Bytes) fonts. If possible, please avoid using TrueType Fonts.

It is not allowed to place CopyDot scans in the files, unless approved by RRD.

All objects in pre-separated files should be defined in DeviceGray color space.

Separations should include trapping.

The file **MUST** be in CMYK without any spot colors (unless a spot color is to be printed), RGB colors, CIE Lab colors, or Index colors.

Screening and resolution will be applied by RRD (parameters in the file are ignored unless otherwise agreed with the supplier).

6.3. COMPOSITE FILES

Use recommendations for Separated Files with the following exceptions:

In composite files, all graphic elements on the page should be defined in DeviceCMYK color space. If spot colors are to be printed, apply spot color definition and inform RRD.

Trapping should not be applied by the file supplier.

While processing composite files RRD is responsible for overprints, knockouts and trapping, according to the following rules:

- a) 100% black objects will always be overprinted,
- b) overprint for all other objects is turned off (knock-out),
- c) it is not permissible to deliver files containing trapping.

If the files do not comply with the above specification or if the files contain PostScript code generated directly or indirectly by CorelDraw application, RRD does not guarantee the proper transfer of files to plate.

In case of processing composite files for Telephone Directories (TD) jobs a and b are not applicable.

The normalization process for composite files for TD jobs is prepared individually based upon the results of file test analysis and the agreement with the Customer.

6.4. PDF FILES

PDF files generated using **Creo PDF pages** profile, guarantee compliance of the files with the CTP system used at RRD, provided that Distiller Plug-in is installed (available at RRD or on the following web page: www.primenergy.com (you need to register)).

6.5. VERSIONS

If versions are to be prepared for the job, please contact RRD to obtain information about the proper file preparation.

If every version is to be printed with a separate set of CMYK plates (standard makeready), no special guidelines are required.

7. ADDITIONAL RECOMMENDATIONS

Suggested file naming pattern: **001_xx_04_01.ps**. Fields stand for:

- 001** Page number (real page number in the issue),
- xx** Title code – specific for every title,
- 04** Issue number
- 01** Page version number (corrections, etc)

It is possible to apply different file naming patterns which have to be approved by RRD. However the file-naming pattern must include all of the above listed information.

8. DELIVERING THE MATERIALS TO RRD

8.1. CONTENT

All materials must be completed and prepared in a way allowing for their quick and easy receiving, checking and transferring for further processing. A proof page accepted by the Customer must accompany every page.

For Telephone Directories a proof accepted by the Customer must accompany every page of signatures containing 2 or more colors, info, heatset part as well as inserts.

8.2. CONTENT CARD

The Content Card, also called „Film/Files delivery and checking card” is a document accompanying customer delivered materials at every stage of the production process. It is a crucial tool used to control the compliance of the production process with the Customer’s

expectations.

The document contains (see: attached form): real page number, file name, number of separations, page content description, additional comments, color proof delivery confirmation, content description.

For inside advertising elements, precise information specifying the location of elements on the page must be delivered (this type of stripping is considered a paid, additional service).

8.3. MATERIAL DELIVERY DEADLINE

Material delivery deadline is the deadline for supplying complete materials that do not require any corrections.

8.4. DIGITAL MATERIAL DELIVERY

Please contact Customer Service Representative for detailed information.

If the supplied materials do not comply with the above specification, it may affect the final product quality, delivery schedule and increase the production cost.