



ZIMMER CUSTOM-MADE PACKAGING®

ART PREPARATION
STYLE GUIDE 2002

INTRODUCTION

Flexographic printing offers some unique challenges for a graphic designer. Today's flexo presses utilize a range of cylinder sizes and anilox roll screens, selected to target each project's requirements. This enables printers to offer their customers a range of options, some of which may not be available from offset printers. These include the use of more print stations, as well as specific colors and various types of ink, flexibility of sizes and repeats of jobs, and some unique substrate materials. An understanding of some basic parameters of flexo printing will ensure that your design work is successful, and that your packaging looks great.

Zimmer Custom-Made Packaging consists of two flexographic printing plants; one located in Indianapolis, Indiana and the other located in Sacramento, California. Between both plants, we have several Central Impression (CI) printing presses, In-line presses and several Stack presses. We have 4, 6 and 8 color presses capable of printing from 21 1/2" to 56" wide material including different types of paper, films and foil.

ZCMP offers our customers design assistance from concept to final reproduction. The following section outlines some general ideas and helpful hints for graphics preparation for flexographic printing.

GENERAL GUIDELINES

1. No matter what software platform you choose to utilize, always include all the support files used to make up the final documents. When using Photoshop files, please provide the original RGB format whenever possible. Please leave layers intact, don't flatten the image. We prefer Macintosh based files.
2. Supply some sort of visual showing the final file, preferably in color. This is a most important quality control check to ensure accurate file translation. Furthermore, this visual should be at 100% size if possible.
3. Find out what substrate the design will be printed on. This is very important to consider, as a design created for white paper or white film will not look the same on silver metallized paper and film or clear film. If printing on silver or clear, white ink is usually printed behind the UPC and various elements for definition. White is considered a color in this case.
4. Our stack presses have a registration tolerance of approximately $\pm 1/32"$. We use these presses for simple line art and designs without tight registration. Our CI and In-line presses are our process printing presses, and have a tighter registration tolerance of $\pm 1/64"$.

TYPE & DESIGN ELEMENTS

1. Always supply a copy of the screen and printer fonts used in documents. Remember to include fonts that have been used in placed graphics (i.e. EPS files). Missing fonts are most possibly the biggest cause of delay in translation of files to printing plates. It is also helpful to eliminate any extraneous fonts that may have been opened in your computer while working on a job, before saving the file for export. This saves time that may be wasted looking for a font not actually used in the job. If your company has a policy that does not allow fonts to be copied, we ask that you outline all type. However, if the font is a specialized type that is not available from the prepress house, purchase of the font may be required, if text needs to be edited.
2. Type sizes: Minimum recommended for positive print in flexography – 5 point type. Minimum recommended for reverse print – 6pt bold thickness –preferably 7 to 8 pt. If bold thickness is not used, or if a stroke is added, or a very condensed typestyle is used, reverse type can close up when printed. Thin-serif positive type should also be avoided at smaller sizes because the serifs may not hold on the plate.
3. Process color type – All type must use the fewest possible colors when using a process color build. In no case should type be made up of more than 3 colors. Solid type and heavy solid areas usually need to be separated out onto a separate printing deck from halftone printing, in order to target the anilox volume separately.
4. A holding line should be used when type is reversed out of more than one color. If it is not on the design, we may have to add it, in order to correctly show the stroke of the type style. If a holding line is not used, the background color should be limited to one color.
5. Rules – Minimum recommended size for positive print is $\frac{3}{4}$ point. Minimum recommended size for reverse print is 1 point. Minimum recommended for a channel or rule separating two color areas is $1\frac{1}{2}$ points. For rules overprinting areas where two or more colors meet, use a solid darker color to trap the colors under it.
6. Register and trademark symbols – These are best created as black overprint in Helvetica Bold font. Minimum size should be 5 point, with 8 point being more desirable. The marks can be reversed out of a solid background, or can be a relief “r” in a reverse dot. Avoid reversals out of process or multi-toned backgrounds if at all possible to avoid registration problems.
7. Drop Shadows – Because of the registration tolerances in flexography, drop shadows on type, especially small type, are difficult to print, especially when trapping with a different color background (with type reversing out). If used on large type or other graphic elements, verify that the thickness of the shadow stays above our minimum line or rule width. Double that stroke, if trapping with a background color.
8. Avoid True Type fonts.

COLOR AND DESIGN

1. Gradients – This is a very popular art technique in today’s design/computer world, and some consideration of the capabilities of flexo printing will improve the printed appearance. Some highlight areas may be too small to be produced on the plates. Plan to maintain a minimum of 5-10% for any pantone color or for any color in a process build gradient, unless the gradient meets some sort of solid line or border or edge. This will prevent the possibility of breakout in the print that appears as a rough line. Also, if a color used in a gradient when converted to CMYK (cyan, magenta, yellow, black) is less than 5%, try previewing the design with that color removed. If it does not change the design in any meaningful way, it would be better to remove that color from the gradient completely. The nature of flexo printing is that there will be some dot gain, particularly visible in the highlight end of gradients. We will provide you with proofs demonstrating the achievable colors on each job. Vignettes that shift from one hue have limited effectiveness, depending on the end point of the darker color. For instance, a fade from red or orange to yellow may show a distinct line at the highlight edge of the magenta, or the yellow will not be pure, if we continue the magenta highlight to avoid breakout. The same condition occurs with blue to yellow vignettes.
2. Keep in mind that two colors next to each other must be “trapped”, typically allowing the lighter color to be spread under the darker color, allowing for register variation. Our image trap tolerances are between .012”-.015” for our CI and In-line presses and .020” for our stack presses. We will create those traps before going to plates, but when designing, remember to think about where these traps will have to be created and allow room for them.
3. Use only the number of colors in document that will be printing on the press. Before submitting the art disk, double check the file for extra colors. Often black appears as process black and spot black. You may use clip art or a placed image and not realize that the black is different than the other black used in your file, for example. Upon separating the file, two blacks will appear. It is always a good idea to communicate with our prepress department regarding the number of colors to be used in a job before finishing the file. Convert “RGB” files to “CMYK” before saving the document, so that you see what the conversion does to the image but please include the RGB version on the disk. (The separator may need to use different CMYK conversion methods for the flexo process.) Numerical Pantone spot colors are preferred on line art and CMYK plus up to 4 spot colors for process art. Keep in mind, that the more colors you use in your design, the more expensive it will be for your client to have printed. Also, many products require OPV (varnish) that must be applied in an ink deck, and is considered a “color” (see partial list of products below).
4. Please use the masking tools. Avoid covering unwanted graphics with white-filled objects. Remove hidden elements (i.e. templates, old artwork, etc.).
5. Along with the proofs for approval, we usually submit a Pantone color chip of any PMS color used. A sample of the ink colors drawn down onto the substrate ordered can also be requested. This is a service available through our ink supplier and allows our customer to see the color at 100% (no screen values) directly on the film or paper that it will be printed on.

6. Screens: We commonly use 85-line screen when printing line and halftone designs. For process printing, we use 100 or 120 line screens. The DPI range for packaging is 200 DPI minimum to 400 DPI. Most often, the DPI utilized by flexible packaging art shops is res 300 DPI. This lends itself to quality reproduction without unwieldy file sizes.

It is important to note that the DPI number requested here is the resolution of the image when sized in the final placement of the work, not the resolution of the image when creating the layered art prior to placement. Enlarging the image for placement in the job will decrease the DPI. Reducing the image for placement will increase the DPI. It is advisable not to enlarge or reduce an image more than 20%.

7. AVOID NESTING – Whenever possible, complete the artwork in one software application. Images placed into another document are nested. An image imported into another document is nested two layers deep. By importing the combined image into yet another document, nesting becomes three layers deep. During processing, the RIP will take time to follow the links to find each of these nested elements. Beyond two layers deep, the RIP may never find them. Be sure and include all images used on the art disk.

EXAMPLES OF ZMCP PRODUCTS

CONE SLEEVES – Web width – 6 7/8", template available, printed on clay-coated, uncoated and metallized paper. Cone sleeves are varnished with OPV (overprint varnish) that is printed in an ink station. Designs can use up to 7 colors, plus the varnish (8 total).

TUBES – Web width – 3 1/16", template available, printed on coated and uncoated paper. Tubes are varnished with OPV (overprint varnish); which is printed in an ink station. Designs can use up to 7 colors, plus the varnish (8 total).

NOVELTY AND SANDWICH WRAPS – Various web widths, templates available, printed on coated and uncoated paper, opaque and clear film. Designs can use up to 7 colors, plus the varnish (8 total).

Software: Adobe Illustrator version 8, 9, or 10; Adobe PhotoShop 5, 5.5, or 6; Freehand 9 Or 10; QuarkXpress 4.1; Adobe Acrobat 4 or 5, Barco GRS files.

Minimum Copy Sizes: Positive Type: six point, .008". Reverse Type: eight point, .015". (All reverse copy finer than 12 point should be set to the heaviest possible face.

Media: Files can be accepted on any of the following media: CD, CDR, DVD RAM, DVD ROM, Floppy Disk, Superdisk, Zip 250, Jaz 1 Gig, or Mac Optical Drives. Make sure you send a copy, not your only original disk.

UPC Symbols: Symbols smaller than nominal (100%), that lack contrast to background, that are truncated or are zero-suppressed, or that require printing cross web direction, may not scan reliably, and should be avoided. Contact your graphics support person at Zimmer should exceptions be required. Supplied codes need only be FPO, as they will be regenerated to compensate for print gain.

Varnish or die-cut templates: Please indicate if the varnish is an overall solid, or if there are unvarnished areas of the file, please indicate them as a separate layer. This will be dependent on the sealing process of the package. Please indicate die cuts with a solid line, and scores or folds with a dotted line on die-cut drawings.

FLEXIBLE WRAP – There are many sizes and substrates for flexible wrap, and the end user must specify the size and substrate information to the designer. Our Graphics Coordinators can assist you in providing a “template” for your design. We also would be happy to provide you with printed samples of other items on the selected substrate, to help you visualize the final printed design. Different substrates carry ink slightly differently. For instance, uncoated paper will absorb ink, whereas ink on white film will stay on the surface, which can make a difference when selecting fine type or rules.

As a general rule, if you are unsure about an idea’s practical translation onto the printed sheet when thinking about a package design, call us first. In Indianapolis, call Beverly Golden at (317) 636-3333 Ext. 2128, or email at bgolden@zcmp.com or in Sacramento, call Michele Curtis at (916) 423-2022 ext. 3109, or email at mcurtis@zcmp.com. We can usually help to lead you in the proper direction for optimal printability, and therefore save you time and money. Please feel free to email a pdf (portable format document) of your design at any time for review and commentary. When you are in Indianapolis, we welcome you to visit our prepress and plate-maker for a personal plant tour, and a discussion of design strategies.

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