Adobe® Illustrator® 10

Flattening Guide

Adobe®

© 2001 Adobe Systems Incorporated. All rights reserved.

Printing and Exporting Files from Adobe® Illustrator® 10.0

If this guide is distributed with software that includes an end user agreement, this guide, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. Except as permitted by any such license, no part of this guide may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Adobe Systems Incorporated. Please note that the content in this guide is protected under copyright law even if it is not distributed with software that includes an end user license agreement.

The content of this guide is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Adobe Systems Incorporated. Adobe Systems Incorporated assumes no responsibility or liability for any errors or inaccuracies that may appear in the informational content contained in this guide.

Please remember that existing artwork or images that you may want to include in your project may be protected under copyright law. The unauthorized incorporation of such material into your new work could be a violation of the rights of the copyright owner. Please be sure to obtain any permission required from the copyright owner.

Adobe, the Adobe logo, Acrobat, Acrobat Reader, Illustrator, and InDesign are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Adobe Systems Incorporated, 345 Park Avenue, San Jose, California 95110, USA.

Notice to U.S. Government End Users. The Software and Documentation are "Commercial Items," as that term is defined at 48 C.F.R. §2.101, consisting of "Commercial Computer Software" and "Commercial Computer Software Documentation," as such terms are used in 48 C.F.R. §12.212 or 48 C.F.R. §227.7202, as applicable. Consistent with 48 C.F.R. §12.212 or 48 C.F.R. §§227.7202-1 through 227.7202-4, as applicable, the Commercial Computer Software and Commercial Computer Software Documentation are being licensed to U.S. Government end users (a) only as Commercial Items and (b) with only those rights as are granted to all other end users pursuant to the terms and conditions herein. Unpublished-rights reserved under the copyright laws of the United States. Adobe Systems Incorporated, 345 Park Avenue, San Jose, CA 95110-2704, USA. For U.S. Government End Users, Adobe agrees to comply with all applicable equal opportunity laws including, if appropriate, the provisions of Executive Order 11246, as amended, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 (38 USC 4212), and Section 503 of the Rehabilitation Act of 1973, as amended, and the regulations at 41 CFR Parts 60-1 through 60-60, 60-250, and 60-741. The affirmative action clause and regulations contained in the preceding sentence shall be incorporated by reference.

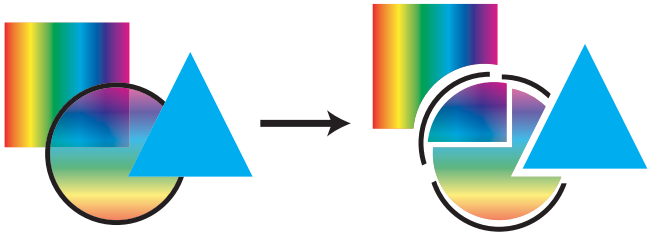
Part Number: 90033900 (10/01)

Printing and Exporting Files from Adobe Illustrator 10

This guide briefly discusses the flattening process Adobe® Illustrator® 10 uses to print and export files with transparency.

What is flattening?

Flattening removes transparency information from a file. When printing or exporting an Illustrator file to a format that does not understand Illustrator's native transparency, overlapping transparent artwork must be broken into individual pieces. These pieces may be vectors, rasters, or both depending on the complexity of the original artwork.



Why is flattening necessary?

Most print devices as well as Adobe PDF prior to 1.4 (Adobe Acrobat® 5 compatible) do not understand native transparency data, although some new Adobe Postscript devices do. When a file is flattened, transparency information is removed and the artwork is converted to a format that your printer or file format will understand.

When is artwork flattened?

A file is flattened when you do the following:

- Print a file that contains transparency.
- Save a file that contains transparency in a legacy format such as native Illustrator 8, Illustrator 8 EPS, or PDF 1.3 format (Acrobat 4 compatibility).
- Export a file that contains transparency to a vector format that does not understand transparency (PICT, EMF, WMF).
- Copy and paste transparent art from Illustrator into another application with both the AICB and the Preserve Appearance options checked (in the Files & Clipboard panel in the Preferences dialog box).
- Invoke the Flatten Transparency command in the Object menu.

When you save an Illustrator file in certain formats, the native transparency information is retained. For example, when you save a file in Illustrator 10 EPS format, the file contains both native Illustrator data and EPS data. When you reopen the file in Illustrator, the native (unflattened) data is read. When you place the file into another application, the EPS (flattened) data is read.

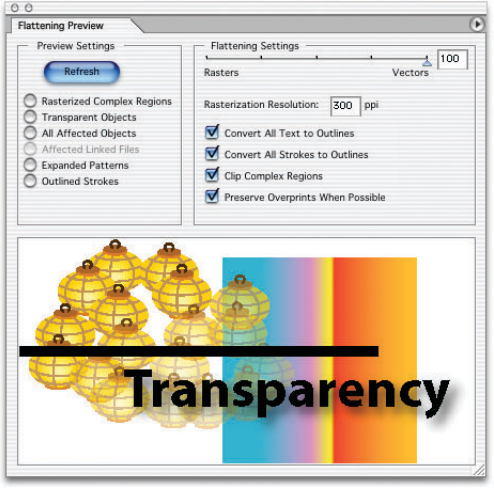
Note: *Adobe InDesign™ 2.0 can place Illustrator's native and PDF 1.4 files with transparency intact and unflattened.*

The Flattening Preview palette

The Flattening Preview palette lets you specify flattener options and preview the expected results. This feedback increases the predictability of flattening, simplifies the print workflow, and allows greater control over flattening parameters. This is an optional plug-in that ships with Adobe Illustrator 10.

Flattening options allow you to control the rasterization parameters Illustrator uses during the flattening process. In Illustrator 10, these options are found in the Document Setup dialog box (see “What is flattening?” on page 1"). With the Flattening Preview plug-in installed, these options are also found in the Flattening Preview palette. Editing the flattener settings in the Flattening Preview palette automatically updates the settings in the Document Setup dialog box (and vice versa), so you don’t have to worry about multiple settings in different places.

To install the Flattening Preview plug-in, simply drag it from the Adobe Illustrator 10/Utilities/Flattening Preview folder into the Adobe Illustrator 10/Plug-ins folder and relaunch Illustrator. The palette will be available in the Window menu.



Preview settings

Refresh Displays the current document in the preview window. The artwork appears in grayscale, and affected areas are highlighted in color. When you edit the document or the settings in the palette, press Refresh again to see the updated preview.

Rasterized Complex Regions Highlights areas that will be rasterized when the document is flattened. These areas change as you adjust the Rasters/Vectors slider.

Transparent Objects Highlights objects with transparency (transparent objects, objects with blending modes or opacity masks, and so on). If there are no such objects, the document will not be flattened, and the flattening settings are not relevant.

All Affected Objects Highlights objects affected by the flattening process: transparent objects and objects that are overlapped by (or very close to) transparent objects.

Affected Linked EPS Files Highlights placed-linked EPS files affected by transparency. These EPS files include transparent effects or interact with transparent objects that overlap them. Consider embedding these linked EPS files. Otherwise Illustrator places these images at the bottom of the art stacking order.

Expanded Patterns Highlights patterns that will be expanded because they are affected by transparency.

Outlined Strokes Highlights strokes that will be outlined because they are affected by transparency or the Convert All Strokes to Outlines option is selected.

Flattening settings

Rasters/Vectors Slider Controls the degree of rasterization in complex areas. The lower the number, the more rasterization in the document; the higher the number, the more vectors. The far right position (100) is the default and the recommended setting. When the slider is in the far left position (0), all objects, transparent or not, are rasterized.

Rasterization Resolution Is the resolution the flattener uses to rasterize complex areas. A value of 300 to 400 ppi is usually appropriate. However, if small fonts or fine objects will be rasterized, or if the output is a high quality print, higher values (600 ppi or more) may be necessary. The preview does not actually show the resolution.

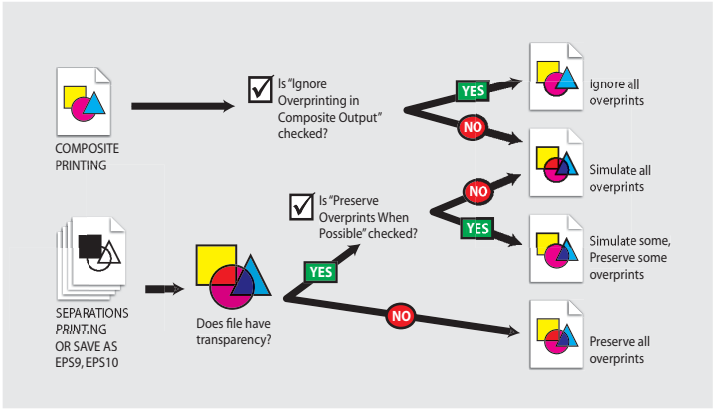
Convert All Text to Outlines Converts all text to outlines. This ensures that the width of all text in the artwork stays consistent. Selecting this option, however, causes small fonts to appear noticeably thicker (especially when printed on lower-end printing systems). In addition, it may make small fonts less readable and significantly degrade flattening performance. You may achieve better results by manually converting the affected text to outlines in Illustrator.

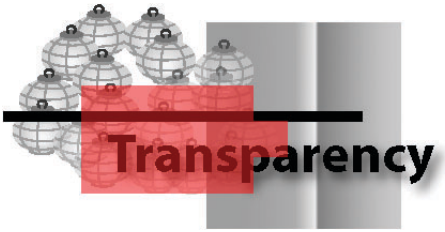
Convert All Strokes to Outlines Converts all strokes to filled objects. This ensures that the width of all strokes in the artwork stays consistent. Selecting this option, however, causes thin strokes to appear slightly thicker (especially when printed on lower-end printing systems). In addition, it changes the appearance of strokes and may significantly degrade flattening performance. You may achieve better results by manually converting the affected strokes to outlines in Illustrator.

Clip Complex Regions Applies clipping masks to rasterized portions of the artwork for a smooth transition between raster and vector objects. This option may produce complex clipping paths that take significant time to compute.

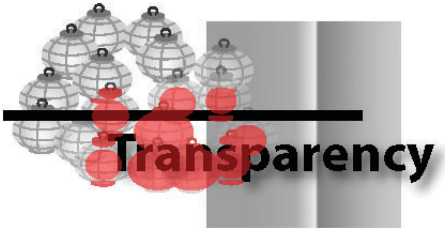
Preserve Overprints When Possible Retains overprint settings in the file that do not interact with transparent objects. (In artwork with transparency, Illustrator strips out overprinting settings when the file is flattened.

When are overprints preserved?





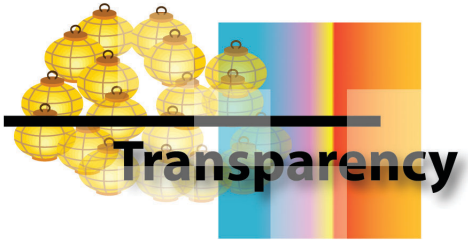
Preview with Rasterized Complex Regions selected and Clip Complex Regions unselected



Preview with Rasterized Complex Regions and Clip Complex Regions selected



Text converted to outlines.



Stitching, where rasters and vectors meet

Which file format is best?

It is always advisable to keep your file in a format in which native transparency data is stored, allowing you make edits as necessary.

File Format	Extension	Editable Transparency	Flattened Data
AI10	.ai	√	
AI10 EPS	.eps	√*	√
AI8 EPS	.eps		√°
PDF 1.4	.pdf	√†	
PDF 1.3	.pdf		√°

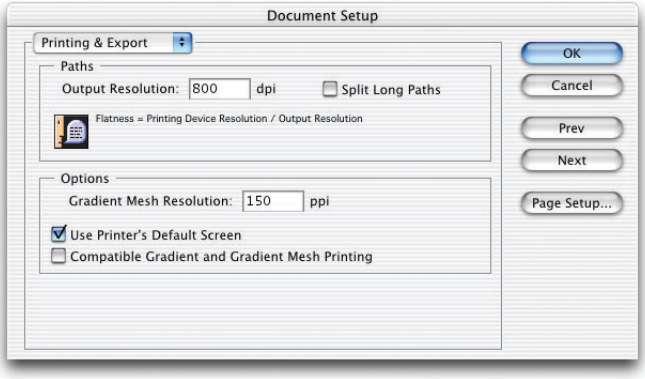
** Transparency is editable when opened in Adobe Illustrator 10 only*
° Spot colors and editable text are not preserved when the file contains transparency in it
† Saved when Preserve Illustrator Editing Capabilities is selected

Printing from Adobe Illustrator 10

Follow these three easy steps to print great-looking files from Adobe Illustrator 10.

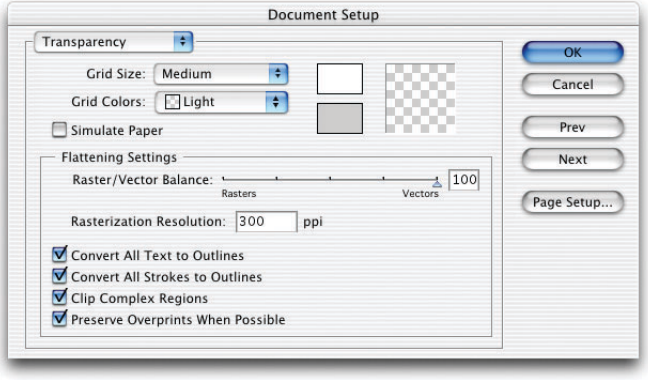
1. Check your Output and Gradient Mesh Resolution settings

Choose File > Document Setup. In the Printing & Export panel of the Document Setup dialog box, set the Output Resolution. This setting determines how smooth your curves will print. There is also a setting for Gradient Mesh Resolution. If you're printing a gradient mesh, set that resolution as well.



2. Check your Flattening settings

If your document contains transparency, open the Transparency panel of the Document Setup dialog box, and select the correct settings for the flattener. (If you use the Flattening Preview palette to choose these settings, the changes are automatically reflected in the Document Setup dialog box.)



3. Check your Document Raster Effects settings

The resolution of raster effects applied through the Effect menu (such as Drop Shadow and Gaussian Blur) is determined in the Document Raster Effects Settings dialog box (also in the Effect menu). By default, this setting is set to 72 dpi for quick screen redraw. For high-resolution printing, a setting of 300 to 400 dpi is recommended.

Note: *Modifying the values in Document Raster Effects Settings can change the appearance of objects to which raster-based effects have already been applied.*



Where can I learn more about printing and flattening?

You can find more detailed information on printing and flattening files with transparency in the following places:

- The Flattening Preview plug-in Help (ReadMe) file, included in the Adobe Illustrator 10 Utilities folder.
- The *Printing and Exporting Artwork* white paper, included on the Illustrator CD-ROM and also available for download at www.adobe.com/products/illustrator.
- The Adobe Illustrator User to User forum, a public forum which offers a wealth of tips and answers to frequently-asked questions, found at www.adobe.com/support/forums.
- The *Achieving Reliable Print Output with Transparency* white paper, available for download at www.adobe.com.

How has Adobe Illustrator 10 improved printing and flattening?

Adobe Illustrator 10 includes several enhancements in the way files are printed and flattened:

- The Raster/Vector slider lets you choose a value from 0 to 100 (Illustrator 9 has only five settings).
- The default setting for the Raster/Vector slider is set to 100 (Illustrator 9 used the middle setting, or 50, as the default).
- You can choose to preserve overprints when possible.
- The flattener in Illustrator 10 respects stacking order. So opaque objects that overlap transparent objects are not affected by flattening.
- The optional Flattening Preview plug-in helps to identify issues before they occur.