

A Designer's Guide to Transparency for Print Output Using Adobe® Creative Suite Software

- 1** About This Guide
- 2** Chapter 1: Introduction to Transparency
- 6** Chapter 2: Creating and Viewing Transparency
- 15** Chapter 3: Importing Files That Contain Transparency
- 18** Chapter 4: Building Pages with Transparency
- 23** Chapter 5: Saving and Exporting Files with Transparency
- 27** Chapter 6: Printing Files with Transparency
- 31** Chapter 7: Delivering Files with Transparency to Your Print Service Provider



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Tools for the New Work™

Who It's For

A Designer's Guide to Transparency for Print Output is for designers who use Adobe Photoshop® CS, Adobe Illustrator® CS, Adobe InDesign® CS, and Adobe Acrobat® 6 Professional software.

Why It Was Created

This guide is an educational resource for Adobe Creative Suite users who create transparency effects when designing for print output. Its purpose is:

1. To identify and explain the transparency-related features in Illustrator CS and InDesign CS, including how to create, display, import, export, and print transparency effects.
2. To teach designers how to build pages with transparency effects that print correctly and produce the intended results.
3. To provide information about known issues and solutions relating to transparency.
4. To provide information about the implications of transparency on file formats and how to exchange files with transparency among Adobe Creative Suite applications.



How It's Organized

A Designer's Guide to Transparency for Print Output contains seven chapters, which are described below. Several chapters begin with an introduction and then present information about Illustrator CS followed by information about InDesign CS. While this guide focuses on Illustrator CS and InDesign CS, it also includes information about transparency issues related to Adobe Photoshop CS, Adobe Acrobat 6 Professional, and Adobe Portable Document Format (PDF) files.

Chapter 1: Introduction to Transparency explains the transparency-related capabilities in Adobe Creative Suite applications. It also includes an explanation of several key terms and concepts related to transparency and printing.

Chapter 2: Creating and Viewing Transparency lists and explains the transparency-creation and transparency-display features in Illustrator CS and InDesign CS.

Chapter 3: Importing Files That Contain Transparency lists importable file formats that can contain live transparency and explains the capabilities of each file type.

Chapter 4: Building Pages with Transparency explains how to build pages with transparency effects so that they display and print correctly and produce the intended results.

Chapter 5: Saving and Exporting Files with Transparency lists the file formats you can save/export using Illustrator CS and InDesign CS and explains the transparency capabilities of the various formats and their suitability for print output.

Chapter 6: Printing Files with Transparency explains how to prepare files for low-resolution proof printing and high-resolution output.

Chapter 7: Delivering Files with Transparency to Your Print Service Provider explains how to prepare files for handoff to your print service provider.

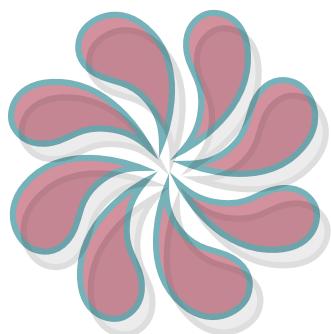
CHAPTER 1

Introduction to Transparency

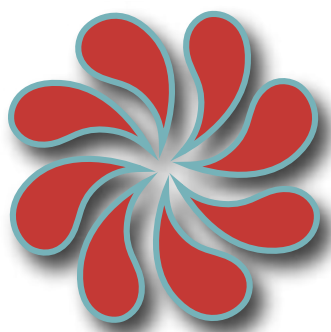
Real-World Transparency vs. Digital Transparency

The real world is made up of objects that are either transparent, such as clear glass, semi-opaque (tinted glass), or opaque (not see-through, like granite). Things are similar in the digital world. Designers who use Adobe Photoshop CS, Adobe Illustrator CS, and Adobe InDesign CS can create objects that are transparent, semi-opaque, or opaque, but they also have options that aren't possible in the real world. For example, digital designers can use Photoshop CS, Illustrator CS, and InDesign CS to specify the opacity of virtually any object from totally opaque to totally transparent and change the appearance of objects by applying transparency effects such as blending, soft drop shadows, and feathered edges that fade smoothly into whatever lies behind.

In the context of this guide, the term “transparency” refers to a collection of features and capabilities in Photoshop, Illustrator, and InDesign that lets you modify the appearance of objects, particularly the way objects affect the appearance of underlying objects.



Create transparent overlays. The Multiply blending mode is applied to the top object; an opacity value of 30% is applied to the bottom object.



Add soft drop shadows.

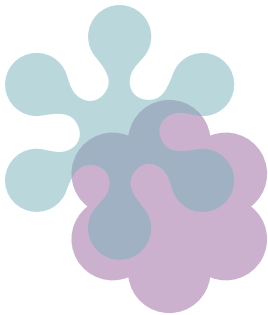
Opaque Beginnings

For many designers, creating see-through (that is, transparent) objects is not a new option. Transparency has been available in Photoshop for several years. However, in the early days of desktop publishing, illustration and page layout programs let users create only opaque objects. Special effects, such as transparent overlays and soft drop shadows, required either a dedicated image-editing program like Adobe Photoshop, which at the time required page layout artists to flatten Photoshop layers and transparency and export files to non-native formats (EPS and TIFF) or manual prepress work that incurred added expense. Today, Photoshop, Illustrator, InDesign, and Acrobat 6 Professional natively offer transparency features and controls for print and Web publishing.

Clear Benefits

The transparency features that are now native in Adobe graphics and layout programs provide several benefits to designers and publishers, including:

- **Better-looking publications.** The option to easily create transparency effects within Illustrator CS and InDesign CS, such as soft drop shadows, feathered edges, and layered graphics that blend into one another, gives designers unprecedented creative freedom and efficiency. Designers can use transparency effects to blend text with pictures, pictures with pictures, or anything with anything. The possibilities are endless.
- **Efficient use of transparency effects.** Because transparency effects created with any Adobe application can be understood by and used with certain Adobe applications, designers can use whatever application they want to create transparency. Instead of having to create—and manage—a separate Photoshop file for every transparency effect, Illustrator CS and InDesign CS users have the option to create transparency effects using built-in transparency features. All three applications share several transparency features.
- **Flexible workflows.** The option to use any of several applications to create transparency effects opens up many workflow possibilities. You can use Photoshop CS or Illustrator CS to create ready-for-press graphics with transparency effects or import graphics generated by Photoshop CS or Illustrator CS that include live transparency into InDesign CS layouts. Then use the transparency features in InDesign CS to apply transparency effects to placed graphics, as well as to native InDesign CS objects and control the output of graphics, type, and transparency effects.



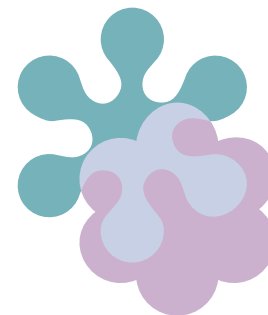
Opacity (50%)



Drop shadow.



Feathering (9 pt. diffused).



Blending mode (overlay).

Transparency-related Terms and Concepts

If you use Photoshop, Illustrator, or InDesign software, you may already know many of the basic terms related to transparency, such as opacity, feathering, and blending. (If not, refer to the glossary that follows.) To get the most out of the transparency features in Illustrator CS and InDesign CS and to help ensure you get the results you want when you print documents that contain transparency, you should be aware of the following transparency-related terms and concepts:

Opacity

Photoshop, Illustrator, and InDesign let you vary the degree of transparency for an object or a group of objects from 100% opacity (opaque) to 0% opacity (transparent). When you decrease an object's opacity, the underlying artwork becomes visible through the object.

Drop shadow

A drop shadow is an underlying soft-edged copy of an object (graphic or text) in Illustrator CS and InDesign CS that adds a three-dimensional appearance to a page. Shadows created with the drop shadow feature blend smoothly into the page or objects underneath. The drop shadow feature produces a more professional and better-looking shadow than the old method of duplicating a graphic or text, making the duplicate black, and offsetting it behind the original object.

Feathering

Feathering softens the edges of an object by fading from opaque to transparent over a user-definable distance. Feathering the edge of an object causes the object to fade smoothly into the page background or into any objects behind it. Feathering can also be used to create halo and backlighting effects.

Blending mode

Blending modes let you vary the way the colors of objects blend with the colors of underlying objects.

Transparency effect

Drop shadows, opacity, feathering, and blending modes are collectively referred to as transparency effects. When you apply transparency effects to objects in Photoshop CS, Illustrator CS, and InDesign CS, the objects must be flattened (see below) when printed or exported in a file format that does not support live transparency.

Flattening

All transparent objects in a file—as well as all text and graphics that interact with transparency—are flattened when you print the file or save it in a format that does not support live transparency, such as PDF 1.3 and EPS. At its simplest, the process of flattening converts all overlapping areas in a stack of transparent objects into a collection of opaque objects that retains the appearance of the original transparent objects. (For additional information about flattening, see Chapter 6, “Printing Files with Transparency.”)

Live transparency

Transparent content in files can be either live or flattened (see “Flattened transparency” on the next page). Files that contain live (that is, unflattened) transparency, such as native Photoshop, native Illustrator, Illustrator EPS, native InDesign, and Adobe PDF 1.4 and PDF 1.5 files, can be opened and the transparent objects can be modified in the source application.

Flattened transparency

Flattened transparency results when you export a file in a non-native format. The transparency effects in flattened files cannot be modified using the source application nor any application into which the file is imported. Flattened file formats include PostScript®, EPS, DCS, Adobe PDF 1., GIF, JPEG, BMP, and TIFF images not created with Photoshop 6.0. Adobe PDF 1.4 and 1.5 files can contain flattened transparency (if created using Acrobat Distiller® software) or live transparency. Flattening also occurs when you print a file with transparency, and you can flatten individual objects in Illustrator CS using the Flatten Transparency command (Object menu).

Note: The Illustrator EPS format is actually two concatenated files: one in native Illustrator format that only Illustrator can open; the other in an EPS format that other applications can import. If you open an Illustrator EPS file in Illustrator, all transparency remains live and editable. However, all other applications use the flattened artwork in a placed Illustrator EPS file.

Rasterization

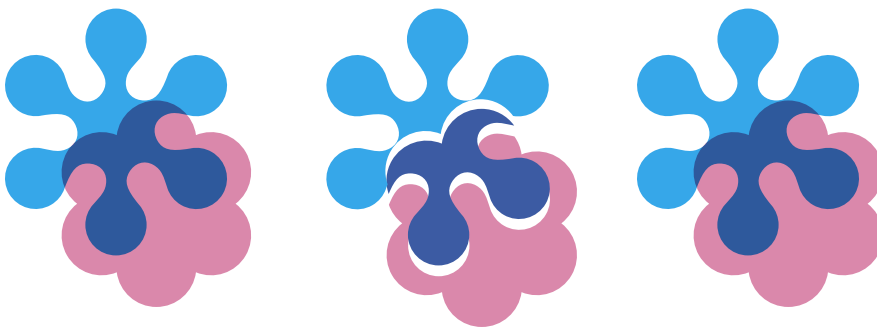
The process of changing vector graphics, fonts, gradients, and gradient meshes into bitmap images for display and printing is called rasterization. During flattening, Illustrator CS and InDesign CS look for areas where transparent objects overlap other objects and divide the artwork into a collection of regions. Each region is analyzed to determine if it can be represented in vector format or if it must be rasterized to achieve the expected transparency effect. This rasterization requires a resolution to be set at the time of flattening. Adequate rasterization resolution is critical to the quality of the printed output.

Atomic region

When overlapping transparent objects are flattened, each discrete shape that results from the overlapping objects is called an atomic region. The shape of atomic regions typically follow the natural lines, curves, and shapes of the objects involved.

Complexity region

A complexity region is an area where many transparent objects with multiple transparency effects overlap. Instead of being represented as many small atomic regions, the objects within a complexity region are “baked into” a single rasterized shape during flattening. The Raster/Vector flattener slider in Illustrator CS, InDesign CS, and Acrobat 6 determines how complicated an area must be to be turned into a complexity region. The highest fidelity (rightmost) setting produces no complexity regions, which produces the best output but may slow performance. (For more information about flattener settings, see Chapter 6, “Printing Files with Transparency.”)



In the example, the two overlapping objects result in three atomic regions after flattening.

Left (live transparency): Two objects overlap. The blue object is in front of the pink object, and the Multiply blending mode is applied to the blue object.

Center (flattened transparency, exploded view): Flattening the two objects produces three atomic regions.

Right (flattened transparency, non-exploded view): The printed results look the same as the original objects.

Artifacts

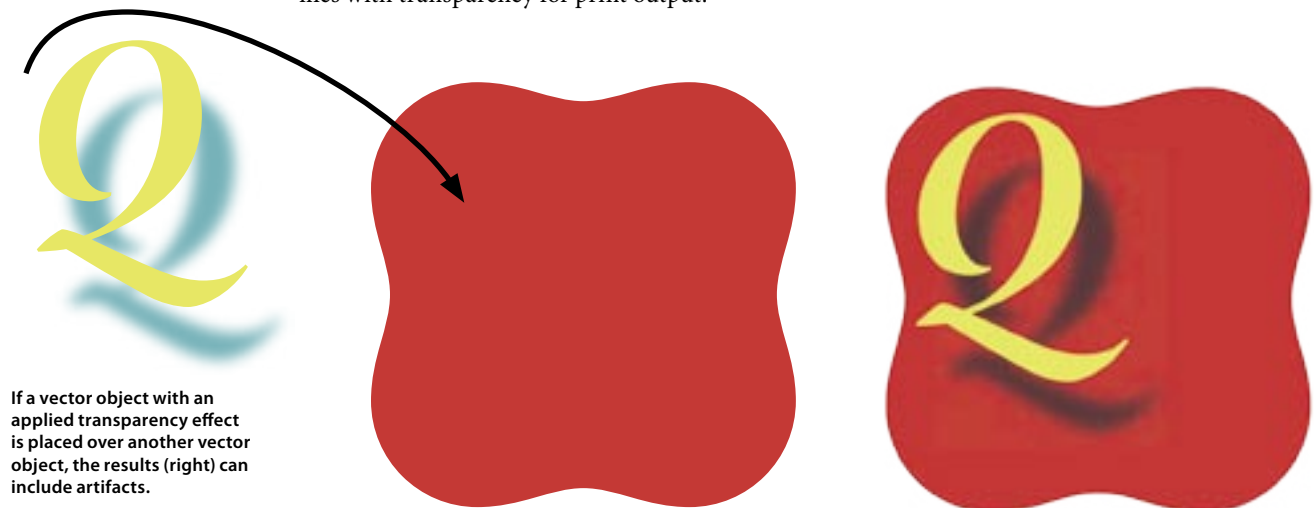
An artifact is a visible defect in an image, usually caused by limitations in the raster image processor (RIP) or the printer's ability to process the atomic regions generated through flattening. For example, a moiré is an undesirable printing artifact that can result when two halftone screen patterns interact.

Transparency flattening artifacts occur more often on-screen than in final printed output. Some artifacts, such as fine white or black lines around atomic regions, occur when an application attempts to antialias, or smooth, the edges of the objects on-screen (which is 72 dpi) to give the best appearance. As a result of this smoothing, the edges of the atomic regions are antialiased, which can cause on-screen artifacts such as white lines. To reduce or eliminate such on-screen artifacts, turn off smoothing in Acrobat (Acrobat > Preferences > Smoothing). Turning off smoothing prevents edges from being antialiased. For printed output, you should watch for artifacts along the edges of atomic regions; however, artifacts do not typically appear in printed output (300 dpi or higher).

One type of artifact is the visible color transition between atomic regions whose coloring would otherwise be similar or identical. Such artifacts on low-resolution devices (such as a monitor or a desktop color laser printer) results when different screening or antialiasing methods are applied to adjacent atomic regions. This artifact is especially noticeable when a single object contains both pixel and vector regions, which can occur during flattening.

To reduce the possibility of artifacts when printing Illustrator CS and InDesign CS documents, check Clip Complex Regions in the selected flattener preset (Edit > Transparency Flattener Presets). To reduce the possibility of artifacts when viewing Adobe PDF documents in Acrobat 5 or 6, turn off smoothing for line art and images (Acrobat > Preferences > Smoothing).

If you or your printer experience artifact-related problems when printing files with transparency, refer to Achieving Reliable Print Output from Adobe Applications using Transparency (<http://www.adobe.com/asnprint>). This document provides additional technical information about preparing files with transparency for print output.



CHAPTER 2

Creating and Viewing Transparency

Transparency is a single term, but it's much more than a single feature in Photoshop CS, Illustrator CS, InDesign CS, and Acrobat 6 Professional. In fact, many transparency-related features have been integrated into these programs. In addition to commands and controls for creating and modifying a variety of transparency effects, you'll find display options that let you control how transparency effects look on-screen, and Illustrator CS and InDesign CS let you set transparency display defaults. InDesign CS also lets you override global display settings on an object-by-object and spread-by-spread basis.

In Illustrator CS and InDesign CS, transparency is essentially an object attribute, like a stroke or a fill. You can apply one or more transparency effects to native objects (text and graphic) you create within Illustrator CS and InDesign CS and to imported graphics. For example, you can add a drop shadow to text you've created in Illustrator CS or InDesign CS, and you can add a feathered edge to an imported graphic. You can apply transparency effects to individual objects, multiple-selected objects, and groups. Basically, you can apply transparency to anything in an Illustrator or InDesign document.

In both Illustrator CS and InDesign CS, the Transparency palette (Window > Transparency) contains several commonly-used transparency controls. You'll find additional transparency-related commands in the Illustrator Effect > Stylize menu and in the InDesign CS Object menu (Drop Shadow and Feather). Most of the commands in the bottom half of the Illustrator > Effect menu (e.g., Gaussian Blur and Pixelate) can also add transparency to objects.

The two charts in this chapter list the transparency-creation features in Illustrator CS and InDesign CS and include a brief description of each feature and examples where appropriate.

Note: For more information about using the transparency features in Illustrator CS and InDesign CS, refer to the product documentation.

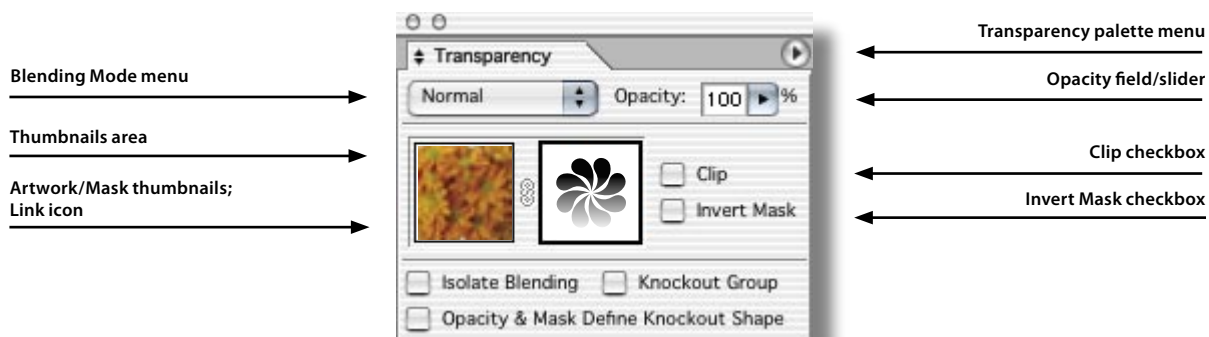
Setting up a Document for Transparency

If you intend to use Illustrator CS to create artwork with transparency effects for print, you should select CMYK Color in the Color Mode area of the New Document dialog box. In InDesign CS, choose Edit > Transparency Blend Space > Document CMYK after you create a document (this is the default setting). When you apply transparency effects in Illustrator CS and InDesign CS, colors are converted to the selected color space. You should also use the CMYK color space for placed graphics, if possible. (If you're creating graphics for the Web, use the RGB color space.)

Note: In InDesign CS, using a different output space (for print or PDF export) and transparency blend space can cause color shifts. For best results, use the Document CMYK transparency blend space for documents that will be printed.








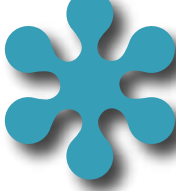


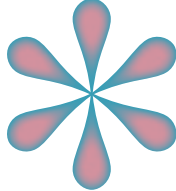

Transparency Creation Features in Illustrator CS

The illustration below shows the Illustrator CS Transparency palette and the name of each of the controls it contains. Additional transparency-creation features are found in the Effect > Stylize menu and are explained in the chart that begins on the next page.



Illustrator CS Transparency palette.

Illustrator CS Feature	Description	
Transparency palette	Contains controls for applying transparency effects to selected objects and groups. The Transparency Palette menu contains commands for showing and hiding thumbnails and other palette options, as well as commands for working with opacity masks.	
Blending Mode menu	Provides 16 choices that let you vary the way the colors of objects blend with the colors of underlying objects. (See page 20 for information about using blending modes with spot colors.)	No blending
		Blending applied (Multiply)
Opacity field/slider	Controls the amount of opacity/transparency that's applied to the selection. An opacity value of 0% makes selected objects completely transparent (that is, invisible); an opacity value of 100% makes selected objects opaque.	100% opacity
		50% opacity
Thumbnails area	Displays controls for working with opacity masks. (An opacity mask lets you partially hide artwork using the mask's shape and luminosity.)	No opacity mask
		Opacity mask
Artwork thumbnail	Displays a thumbnail view of the currently targeted objects or groups. If an opacity mask is present, the objects are displayed unmasked.	
Link icon	Lets you unlink and relink opacity masks.	
Mask thumbnail	Displays a black-and-white thumbnail view of an opacity mask.	
Clip checkbox	Makes an opacity mask double as a clipping mask, which causes the masked objects to be fully transparent (i.e., invisible) outside the boundaries of the masking artwork.	Normal mask
		Clipping mask
Invert Mask checkbox	Reverses the luminosity values of the masking artwork, which reverses the opacity of the masked artwork. For example, areas that are 10% transparent become 90% transparent after inversion.	Normal mask
		Inverted mask

Illustrator CS Feature	Description		
Isolate Blending checkbox	Prevents blending modes applied to objects within a group from being applied to objects beneath the group.	Isolate blending off	Isolate blending on
			
Knockout Group checkbox	Makes every object of a group “knock out”—that is, visually block out—underlying objects that are part of the group. When you select Knockout Group, only objects within the selected group knock out. Objects beneath the selected group are still visible and are affected by the blending modes, and opacity values are applied to objects within the group.	Knockout group off	Knockout group on
			
Opacity & Mask Define Knockout Shape checkbox	Keeps a knockout effect proportional to the masking object's opacity. The result is that the knockout effect is strongest in areas of the mask that are close to 100% opacity; the knockout effect is weakest in areas with lower opacity values.	Unshaped knockout	Shaped knockout
			
Transparency palette menu	Displays several commands for working with opacity masks, as well as the commands for showing and hiding options displayed in the palette.		
Effect menu stylize commands (Effect > Stylize >)	The Blur effects (Effect > Blur > Gaussian Blur and Effect > Blur > Radial Blur) also introduce transparency into a document, as does the Rasterize effect (Effect > Rasterize) when used with the Transparent Background option. Note: The resolution of all effects in a document are applied via the Effect menu (Drop Shadow, Feather, Gaussian Blur, etc.) and are defined in the Document Raster Effects Resolution dialog box (Effect > Document Raster Effects Settings).		
Drop shadow	Adds a soft-edged shadow behind any object. You can place a drop shadow any distance from the original object along the x or y axis. You have the option to apply a blending mode and specify the opacity, blur, and color of a drop shadow. (Note: if a drop shadow's blur value is set close to 0, the result can be a bitmapped raster effect rather than a soft edge.)	Shadowed text	Shadowed graphic
			
Feather	Softens the edges of an object by fading them from opaque to transparent over the distance you specify. By feathering the edge of an object, you can make the object appear to fade smoothly into the page background or into any objects behind it..	Feathered text	Feathered graphic
			
Inner glow and Outer glow	Lets you add glows that spread inside or outside the edges of the selection. When you add an inner glow, a colored and feathered version of the original object (which introduces a raster opacity mask) is created on top of the selection; when you add an outer glow, a transparent raster object is created behind the selection.	Inner glow	Outer glow
			

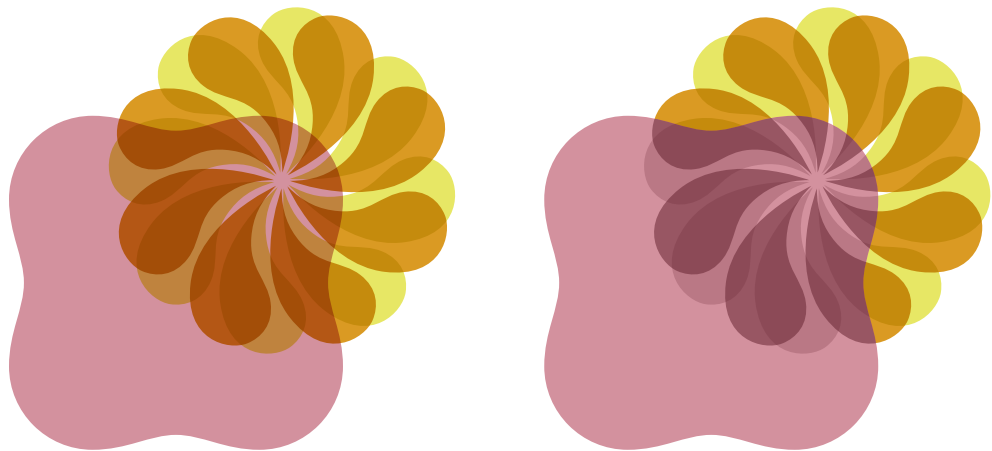
Tips for Creating Transparency Effects in Illustrator CS

In Illustrator CS, the selected flattener preset (File > Document Setup > Transparency > Preset) is taken into consideration only during flattening; however, all effects that require rasterization in the Illustrator CS Effects menu are rasterized at the value specified in the Resolution field in the Document Raster Effects Settings dialog box (Effect > Document Raster Effects Settings).

For performance reasons, the default Raster Effects Resolution setting in Illustrator CS is 72 ppi. If you are printing to a high-resolution output device or exporting a file for eventual high-resolution output, you should make sure that the Resolution value (in the Document Raster Effects Settings dialog box) is appropriate for the printer.

The Raster Effect Resolution setting is global. All effects in an Illustrator document are rasterized at this resolution. There is no way to apply different raster effects resolution settings to different objects. Whenever you change the Raster Effect Resolution value, all effects that have already been applied in the document are updated (hence the warning that the appearance of already-applied effects may change).

The two examples show how you can create nested transparency effects in Illustrator CS using groups. In the example on the left, the Multiply blending mode is applied to the two flowerlike shapes. In the example on the right, the two flowerlike shapes are grouped and the Luminosity blending mode is applied.



- When you apply transparency effects to a group in Illustrator CS, the group is treated like a single object relative to underlying objects; however, individual objects retain their applied transparency effects (if any) relative to other objects in the group. This capability lets graphic artists create nested transparency effects that would be difficult or impossible to create otherwise.
- If you make changes to transparency settings in Illustrator CS when no objects are selected, the modified settings are applied to newly created objects unless New Art Has Basic Appearance is selected in the Appearance palette (this is the default setting in Illustrator CS).
- To edit a transparency effect applied to an Illustrator CS object, double-click the effect in the Appearance palette. If you choose an already-applied effect from the Effect menu, a new effect is created and added to the selection, which means it's possible to apply the same transparency effect multiple times to a single Illustrator CS object.
- Displaying the Layers palette helps you keep track of transparency and how it is applied to objects and groups. A shaded circle displayed to the right of an object name in the Layers palette indicates that transparency is applied to the object.

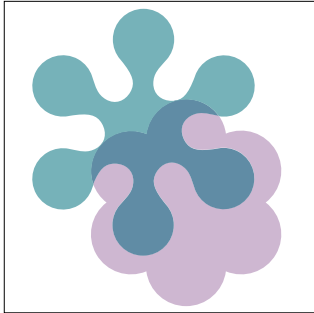
The Layers palette displays a shaded circle to the right of objects to which transparency is applied.



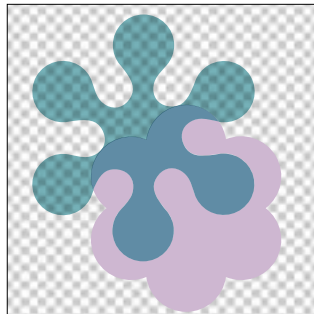
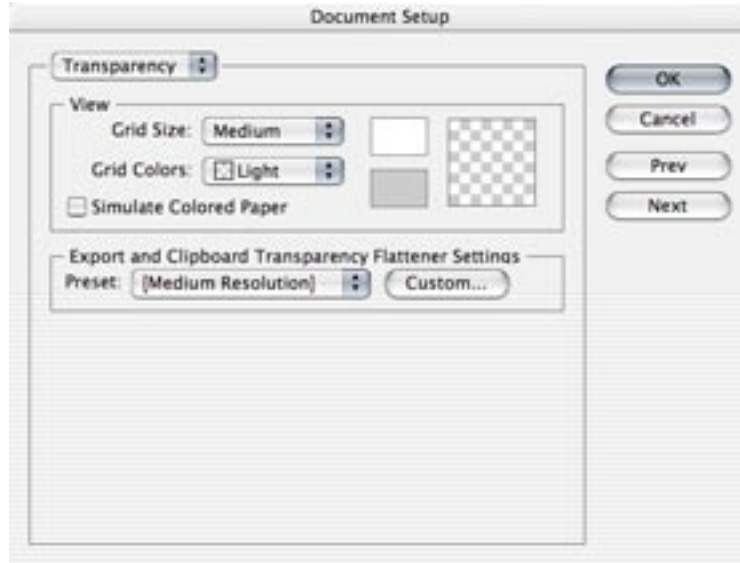
Displaying Transparency in Illustrator CS

The Document Setup dialog box (File > Document Setup) lets you set transparency preferences that determine how the underlying transparency grid is displayed. By changing the Grid Size and Grid Color settings you can change the appearance of the transparency grid. You can show and hide the transparency grid via the Show/Hide Transparency Grid command (View menu).

In Illustrator CS, the settings you make in the Transparency pane of the Document Setup dialog box determine the appearance of the transparency grid that's displayed when you choose View > Show Transparency Grid.



Transparency grid hidden.



Transparency grid showing.

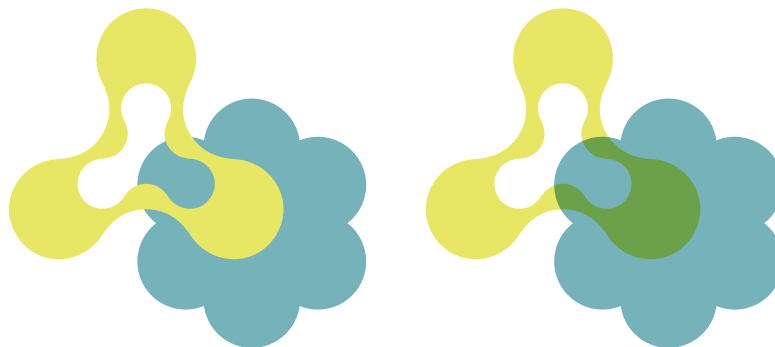
Note: The controls in the Flattener Settings area let you specify how transparency is printed. For information about modifying flattening settings, refer to “Achieving Reliable Print Output from Adobe Applications with Transparency” at www.adobe.com/asnprint.

Overprint Preview

The Overprint Preview option (View > Overprint Preview) provides an on-screen “ink preview” that approximates how overprinting will look in color-separated output. It's important that you carefully check overprinted colors before you send a document to your service provider for final output. It's important to double-check separations because output options (print or exported PDF) effect how overprints are represented in the final output.

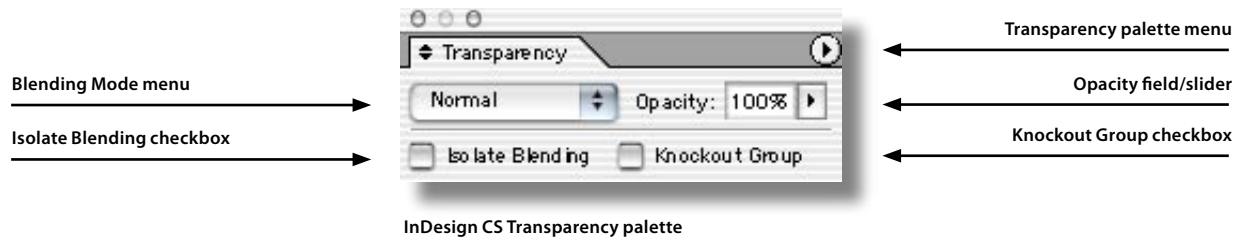
It is especially important to turn on Overprint Preview when a design uses spot-colored objects that interact with transparency or have transparency effects directly applied to them. Enabling Overprint Preview provides the most accurate on-screen representation of ink mixing. You can also simulate overprinting effects when you output to a composite printing device. To print a composite proof using Illustrator CS, choose Simulate Overprint from the Advanced pane of the Print dialog box.

In both examples, the yellow (frontmost) object is set to overprint. Overprint Preview is disabled in the example on the left; it's enabled in the example on the right.







Transparency Creation Features in InDesign CS

As in Illustrator CS, many of the transparency controls in InDesign CS are located in the Transparency palette (Window > Transparency). The illustration below shows the InDesign CS Transparency palette and the name of each of the controls it contains. Two additional transparency-creation features—Drop Shadow and Feather—are available in the Object menu and are explained in the chart below.



InDesign CS Feature	Description		
Transparency palette	Contains four controls for applying transparency effects to selected objects and groups. The Transparency palette menu has a Show/Hide Options command for displaying and hiding the Isolate Blending and Knockout Group checkboxes at the bottom of the palette.		
Blending Mode menu	Provides 16 choices that let you vary the way the colors of objects blend with the colors of underlying objects. (See page 20 for information about using blending modes with spot colors.)	No blending	Blending applied (Multiply)
Opacity field/slider	Controls the amount of transparency that's applied to the selection. An opacity value of 0% makes the selected objects completely transparent (that is, invisible); an opacity value of 100% makes the selected objects opaque.	100% opacity	50% opacity
Isolate Blending checkbox	Prevents blending modes applied to objects within a group from being applied to objects beneath the group.	Isolate blending off	Isolate blending on
Knockout Group checkbox	Makes every object of a group "knock out"—that is, visually block out—underlying objects that are part of the group. When you select Knockout Group, only objects within the selected group knock out. Objects beneath the selected group are still visible and are affected by the blending modes and opacity values applied to objects within the group.	Magenta group in front of yellow shape	
		Knockout group off	Knockout group on

InDesign CS Feature	Description		
Drop Shadow command (Object > Drop Shadow)	Adds a soft-edged shadow behind any object. You can place a drop shadow any distance from the original object along the x or y axis, and you have the option to apply a blending mode and specify the opacity, blur, and color of a drop shadow.	Shadowed text	Shadowed graphic
			
Feather command (Object > Feather)	Softens the edges of an object by fading them from opaque to transparent over the distance you specify. By feathering the edge of an object, you can make the object appear to fade smoothly into the page background or into any objects behind it. Behind the scenes, the Feather effect creates a raster image and applies it as an opacity mask to the original object. When you feather an InDesign object, you also have the option to apply any of three optional corner effects (see below). <i>Note: The resolution of drop shadows and feathered objects is controlled by the Gradient Resolution setting in the Transparency Flattener Presets dialog box. (Edit > Transparency Flattener Presets).</i>	Feathered text	Feathered graphic
			



Feathered object diffused.



Feathered object rounded.



Feathered object sharp.

Importing Transparency

In addition to creating transparent objects within Illustrator CS and InDesign CS, you can also add transparency to a layout by importing graphics that contain transparency, such as a transparent background (rather than a clipping path) in a native Photoshop file. There is no need to flatten a Photoshop file with transparency. Simply place the native Photoshop file into Illustrator CS or InDesign CS. Both Illustrator CS and InDesign CS can recognize transparency information in placed graphic files. For more information about importing graphics that contain transparency effects, see Chapter 3, “Importing Files that Contain Transparency.”

Displaying Transparency in InDesign CS

InDesign CS lets you set global defaults for displaying transparency in the Display Performance dialog box (Preferences > Display Performance). The display options in the View menu let you override the global display settings for individual document windows, and the Display Performance options in the Object menu let you control the display of individual objects.

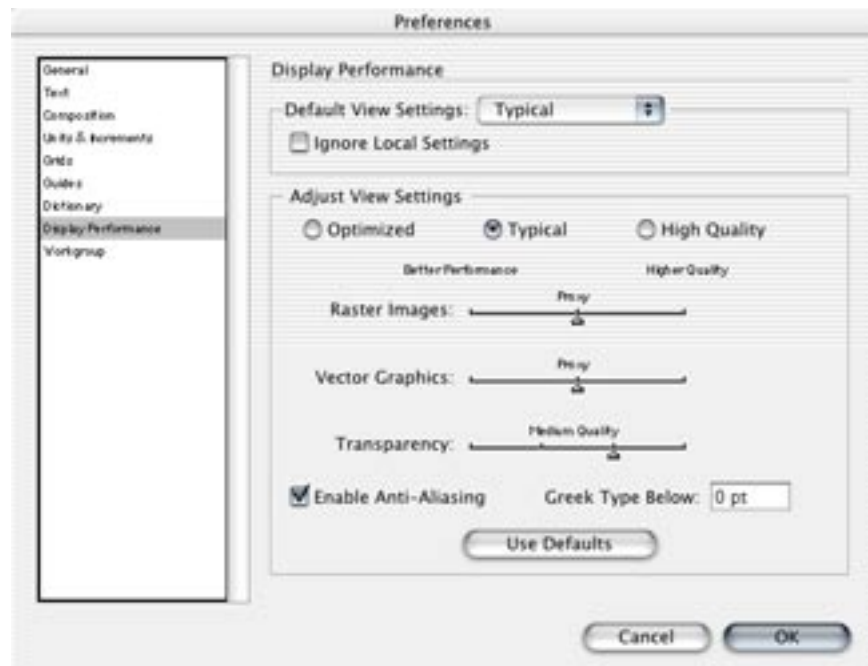
Setting transparency-related display preferences

The Display Performance dialog box (Preferences > Display Performance) lets you to control the way graphics and transparency effects are displayed on-screen. Display Performance settings have no effect on transparency when it is printed.

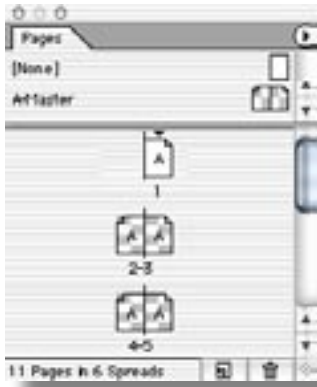
A slider lets you control the appearance of transparency in four gradations (Off, Low, Medium, and High) of quality from fully simulated (High) to completely disabled (Off). The High setting allows you, for example, to accurately position objects with drop shadows, and the Off setting lets you quickly move objects and navigate spreads in a very large document.

The settings you make in the Display Performance dialog box are global unless you override them for specific objects or windows. By default, transparency display is enabled and should remain so unless you have specific reasons for disabling it. (For more information about the controls in this dialog box, refer to the InDesign CS User Guide or the InDesign CS Help file [Help > InDesign Help].)

If transparency preview is completely disabled, you won't be able to tell by looking at them if objects on a page or spread have transparency or transparency-based effects applied to them. You can use the Pages palette for this purpose (see next page).



The Transparency slider in the Display Performance pane of the InDesign CS Preferences dialog box (InDesign > Preferences > Display Performance) lets you control the display of transparency effects for each of the three display settings (Optimized, Typical, and High Quality).



InDesign CS pages that contain objects with transparency are displayed with a checkerboard pattern.

Determining if transparency effects are present on an InDesign CS spread

The Pages palette (left) displays a checkerboard pattern on pages that contain objects with transparency. In the example (left), pages 2–5 contain transparency effects; page 1 does not. Notice that the A-Master page spread also contains transparency effects.

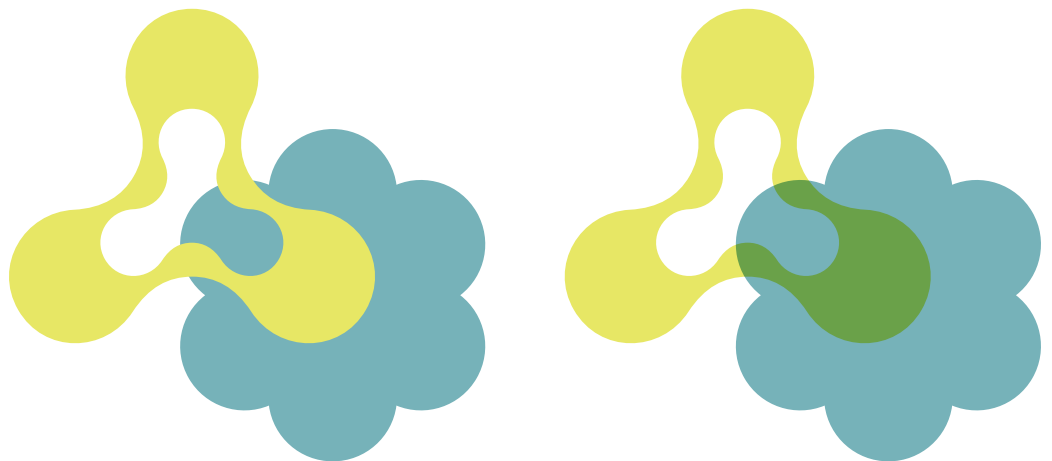
If the Pages palette indicates that a page or spread contains objects with transparency effects and you can't tell which objects use transparency, you can use the Flattener Preview palette (Window > Output Preview > Flattener) to determine which objects have transparency effects, as well as objects that are affected by transparency. (For additional information about the Flattener Preview palette, see Chapter 6, "Printing Files with Transparency.")

Overprint Preview

The Overprint Preview display option (View > Overprint Preview) provides an on-screen "ink preview" that approximates how objects set to overprint will appear in color-separated output. It's important that you carefully check overprinting colors before you send a document to your service provider for final output.

You can also simulate overprinting effects when you output to a composite printing device. To print a composite proof using InDesign CS, enable Simulate Overprint in the Output pane of the Print dialog box.

Note: In InDesign CS, turning on Overprint Preview also turns on High Quality Display, which provides the closest screen representation of the final printed output that's possible with current technology; however, enabling these options may slow screen redraw depending on the computer's hardware and available memory.



In both examples, the yellow (frontmost) object is set to overprint. Overprint Preview is disabled in the example on the left; it's enabled in the example on the right.

CHAPTER 3

Importing Files That Contain Transparency

In addition to creating transparency effects within Illustrator CS and InDesign CS, you can also import graphics that contain transparency into Illustrator CS and InDesign CS layouts. Transparency effects in imported graphics are retained by Illustrator CS and InDesign CS. However, if changes to the original graphic are required, they must be made in the originating application.

After you place a transparent graphic into a layout, you can use the graphic-manipulation features in Illustrator CS and InDesign CS (scale, flip, opacity, etc.) to modify the appearance of the graphic, and you can combine imported graphics with native objects to create new transparency effects. For example, you can import a native Illustrator CS graphic file (that is, an .AI file) that contains transparency into an InDesign CS layout, and InDesign CS will retain and display the transparency. Within InDesign CS you can then apply additional transparency effects—perhaps a drop shadow or a feathered edge—to the imported graphic and then place it above or below other imported graphics and InDesign CS-native objects to which transparency effects are applied.



This illustration shows an InDesign CS page with three objects: (1) The “Quality” text frame is the frontmost object. It was created in InDesign CS and has a drop shadow. (2) The placed Illustrator CS graphic (the two flowerlike shapes and the rounded square shape) is the middle object in the stacking order. Blending modes are applied to all three shapes. (3) The light blue rectangle, created in InDesign CS, is the bottom object. Notice how the transparency effects interact among the three sets of objects.





Placing Graphics That Contain Transparency into Illustrator CS and InDesign CS

The Place command (File menu) in Illustrator CS and InDesign CS lets you import graphics in a variety of formats into a layout. The process of placing a graphic that contains live transparency is the same as placing any other graphic—that is, by using the Place command. However, not all graphic file formats support live transparency. The chart below lists the file formats that support live transparency and can be imported into Illustrator CS and InDesign CS. Designers who create transparent graphics for use in Illustrator CS and InDesign CS layouts should save the files in a format that supports live transparency. (For information about exporting Illustrator CS and InDesign CS files that contain transparency, see Chapter 5, “Saving and Exporting Files with Transparency.”)

Using file formats that preserve live transparency gives you control over the flattener and resolution settings right up to the time you print or save the job in a non-native file format (such as PostScript) with one exception: Raster-based live effects are no longer live once they leave their native application. This is why you should specify a Raster Effects Resolution for Illustrator CS artwork that’s appropriate for the resolution of the printer. While transparency attributes remain live in Adobe PDF 1.4 files, the resolution of raster elements—including vector objects to which raster-based live effects have been applied—cannot be changed after conversion to PDF. Also, InDesign CS allows you to link directly to Illustrator CS and Adobe PDF 1.4 files, enabling you to preserve live transparency throughout the page layout workflow. Your print provider can then flatten all transparency in a job at once, directly from InDesign CS.

Note: Typically, flattening for high-resolution output is done by the print provider rather than the designer. If you need to flatten artwork, consult with your printer to determine the best flattener settings.

Illustrator and InDesign import file formats and transparency

Import Formats (Place or Open)		Transparency Embedded As
Illustrator Native (.AI) (Illustrator 9, 10, and CS)		Live or flattened within Illustrator (i.e., objects flattened via Object > Flatten Transparency)
Photoshop Native (.PSD)		Live and, optionally, layered
Adobe PDF 1.3 (Acrobat 4)		Flattened
Adobe PDF 1.4 (Acrobat 5) and PDF 1.5 (Acrobat 6)		Live if saved from Illustrator or exported from InDesign; flattened if created using Distiller
EPS (from Illustrator and Photoshop)		Flattened*
Other formats (EPS not from Illustrator, TIFF, etc.)		Flattened**

* Illustrator CS can open EPS files created with Illustrator, and the transparency can be edited. Illustrator 9, 10, and CS files contain a native, non-flattened Illustrator portion that can be read only by Illustrator and a flattened EPS portion that can be read by all EPS-compatible applications. The transparency in an Illustrator EPS file is considered flattened if the file is placed into InDesign CS and other programs.

** Some graphic file formats (EPS not from Illustrator, TIFF, etc.) cannot handle live transparency.

Whenever possible, you should use file formats that preserve live transparency—including native formats for Adobe applications (i.e., .AI files created with Illustrator 9, Illustrator 10, and Illustrator CS, and .INDD files created with InDesign 2 or InDesign CS) or Adobe PDF 1.4 files or PDF 1.5 files—as hand-off files or source files for placement in layouts or other documents and for delivery to your print service provider. It is always best to use the latest versions of Adobe software and output formats to ensure the best possible output.

Because InDesign CS lets you import native Photoshop and Illustrator files, you don't have to save two versions of your graphic files, as you do if you use QuarkXPress for page layout. QuarkXPress cannot import native Photoshop and Illustrator files. Also, when you place transparent graphics into InDesign CS, the placed graphics can blend with other objects in the layout. This isn't possible if placed graphics have been flattened into opaque artwork.

Placing EPS graphics into Illustrator CS



With Illustrator CS you can place-link (rather than embed) and correctly print EPS files (including duotones), even if they interact with transparency. (This was not true for previous versions of Illustrator.) When you place EPS files that are duotones, you should make sure you don't embed them. If you embed an EPS file, it will be converted to the document color space.

Placing Illustrator-generated transparent graphics into InDesign CS



Illustrator 9, 10, and CS let you save graphics with transparency in the following file formats: native Illustrator (.AI), EPS created with Illustrator CS (.EPS), Adobe PDF 1.4, and PDF 1.5 created with Illustrator CS (.PDF). If you place .AI or Adobe PDF 1.4 files or PDF 1.5 (PDF 1.3 files are flattened) created with Illustrator CS that contain live transparency into InDesign CS layouts, the transparency effects are maintained within the graphic and relative to native InDesign CS objects.

If you place an EPS file created with Illustrator CS, the transparency is already flattened as far as InDesign CS is concerned (though the transparency effects are still live if the file is reopened in Illustrator CS), and the graphic is flattened/opaque relative to InDesign CS objects. Likewise, if you open an Illustrator EPS file in Photoshop CS or distill it with Acrobat Distiller, the transparency is already flattened. Illustrator EPS files are useful for placement into page layout programs that don't support native transparency.

Dragging and dropping or copying and pasting Illustrator CS-generated transparent graphics into InDesign CS

In addition to using the Place command (File menu) to import Illustrator CS graphics into InDesign CS layouts, you can drag and drop or copy and paste objects from an Illustrator document into an InDesign layout. If you use either of these methods, no link is created between the InDesign CS document and the Illustrator CS file. If you change the original objects in Illustrator CS after dragging and dropping or copying and pasting the objects into InDesign CS, the changes do not affect the objects in InDesign CS.

On the Mac OS, before you drag and drop or copy and paste Illustrator CS objects that contain gradients, patterns, blends, or transparency into InDesign CS layouts, you should make sure that the Illustrator CS Files & Clipboard preferences (Preferences > Files & Clipboard) are set to Copy as PDF (to Clipboard). (This is the default setting.) By default, InDesign CS does not accept PDF data when you copy and paste an Illustrator CS graphic if Adobe Illustrator Clipboard format (AICB) information is also present on the clipboard (that is, if you check both PDF and AICB in the Illustrator CS Files & Clipboard preferences). To paste PDF data into InDesign CS, choose Prefer PDF when Pasting in the InDesign CS General preferences pane (InDesign > Preferences > General).

Note: In general, AICB is editable within InDesign CS, however; not all native Illustrator objects are editable (gradient meshes, for example). These objects become embedded graphics and are listed in the Links palette. PDF is not editable when dragged and dropped or copied and pasted.

When you drag and drop or copy and paste a PDF graphic, the graphic is added as a single object that is not editable within InDesign CS and does not have a link reference in the Links palette.

The three examples below show how complexity grows when you combine transparency effects and overlapping objects. All three examples use a native InDesign text frame and a placed graphic.



No transparency effects are applied to either object.



Drop shadows are applied to both objects.



The Luminosity blending mode is applied to the text frame.

CHAPTER 4

Building Pages with Transparency

You are not likely to encounter problems if you apply transparency effects to isolated objects that do not overlap with other objects or colors. However, if you create more complicated effects using multiple, overlapping objects, you should be aware of several issues covered in this section that can lead to unexpected results when printing.

Keep in mind when working with transparent objects that as the number of overlapping transparent objects increases, so does the complexity of the transparency information. For example, placing shadowed text in front of only the page background is simpler than placing shadowed text in front of an imported graphic—in which case the transparency effect (the drop shadow) must be combined with the underlying graphic for display and printing.

When you're creating transparency effects, you should try to build them as efficiently as possible to minimize the possibility of display and printing problems, and you should be careful not to apply transparency effects that produce undesirable results. For example, it's possible to feather the edge of small type with fine serifs, but if you do, the resulting text might be difficult or impossible to read. Use good judgement when designing with transparency.

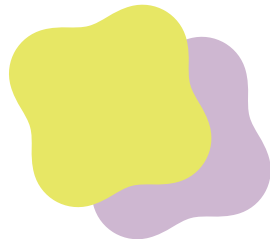
Object Stacking Order and Transparency

Every time you create a new object in Illustrator CS and InDesign CS, it's placed in front of all existing objects. The layering of objects on a page is referred to as the *stacking order*. (Note: *Stacking order becomes a bit more complicated when you're working with a group or a layer, each of which has its own stacking order.*)

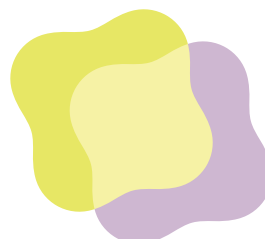
You can adjust the stacking order of an object by moving it forward or backward relative to other objects on the page or layers on top of each other. The stacking order of objects is critical for correct display and printing of transparency. To change the stacking order of a selected object, choose Object > Arrange and then choose one of the options from the submenu—Bring to Front, Bring Forward, Send to Back, or Send Backward—or change the top-down stacking order of layers.

Transparency effects don't have to involve overlapping objects, but this is often the case. For example, you can apply an opacity value that's less than 100% to lighten any object regardless of whether the object is in front of other objects. However, by applying an opacity value, you not only make an object lighter, you also make it semi-opaque, which causes it to blend with any underlying objects it overlaps.

When you're working with transparent objects that overlap, you should keep in mind that changing the stacking order can change the appearance of overlapping areas. When you create transparency effects that involve overlapping objects, make sure the stacking order is producing the intended results.



Yellow object in front.



Purple object in front (with Overlay blend mode applied).

The two examples on the left show how stacking order can affect transparent objects. Both examples contain similar-looking yellow and purple objects. In both examples the Overlay blending mode is applied to the purple object; no blending mode is applied to the yellow object. The only difference between the left pair of objects and the right pair is that the stacking order is reversed. On the left, the yellow object is in front of the purple object; on the right, the purple object is in front of the yellow object. In general, you should apply transparency to objects that are in front of other objects so that the objects in front blend with the objects behind.

Blending Modes and Transparency

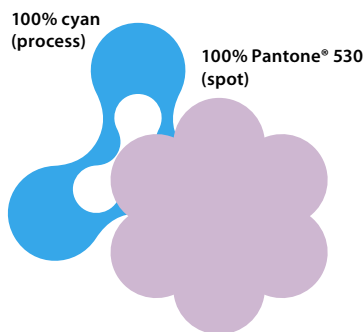
You need to know two important things about blending modes. First, when a blending mode is applied to a spot color object, what you see on-screen if Overprint Preview is not enabled or in a composite proof may not match what the press reproduces. Second, certain blending modes—specifically, Difference, Exclusion, Hue, Saturation, Color, and Luminosity—can introduce additional color on the process plates when a blend involving spot colors is flattened.

In Illustrator CS and InDesign CS, enabling Overprint Preview (View menu) provides the most accurate representation of what the final output will look like. You can use the Separation Preview palette in InDesign CS and Acrobat 6 Professional to determine what color plates result from combining blending modes with spot colors.

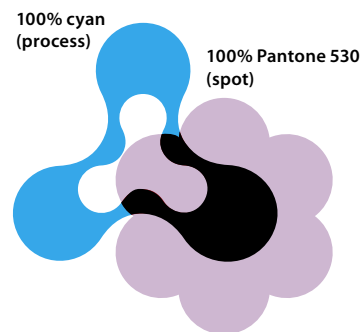
Note: In general, mixing transparency and spot colors, including blending spot colors with process colors, should be done with caution. The best practice is to use spot colors and blending modes with transparency only after consulting or testing with your print service provider.



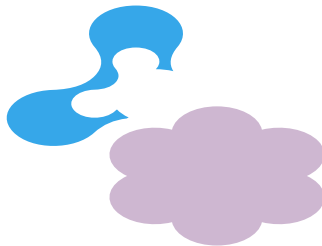
In this example, the Difference blending mode applied to the Pantone 530-filled object (right) produces a dark region where it overlaps the underlying cyan object. Printing separations produces five color plates.



No transparency.



The Difference blending mode is applied to the Pantone 530 object. Applying some blending modes (Difference, Exclusion, Hue, Saturation, Color, and Luminosity) to an object with a spot color fill or stroke can introduce process colors when the object is flattened and printed.



Without transparency effects, two separation plates are produced: one for the cyan object and one for the Pantone 530 object.



Applying the Difference blending mode produces five color plates because flattening requires conversion of the spot into process colors to properly blend the colors.

Spot Colors and Transparency

With Illustrator CS, spot colors are preserved in all file formats with the exception of Illustrator 8 and EPS 8. InDesign CS preserves spot colors and duotones—including spot colors that interact with transparency and that are set to overprint. Spot colors are preserved when they interact with transparency because the flattener adds overprint instructions to appropriate spot-colored atomic regions. So, it's not necessary for a designer to assign an overprint to objects with spot colors. For example, a spot-colored object with the Multiply blend mode applied that's placed on top of another spot- or process-colored object will automatically attain an overprint instruction (via the flattener) in the atomic regions where the objects overlap.

You can display overprinted colors by turning on Overprint Preview (View menu). You can also simulate overprinted colors on your desktop proofer by selecting Simulate Overprint in the Print or Export dialog boxes. (The output will approximate what you see on screen with Overprint Preview turned on.) The overprinting color information is simulated by your composite printer and provides a more complete proof. You should select Simulate Overprint only for composite output. InDesign CS will correctly separate spot colors and overprinting when you output separations.

Transparent artwork must be processed by an application that can handle flattening, such as Illustrator CS, InDesign CS, and Acrobat 6. Exporting an Illustrator file to EPS and placing it into QuarkXPress is not a good option when transparency is involved. All controls for printing Illustrator graphics are available in Illustrator CS. If you need to place Illustrator artwork into a page layout program, it is best to use InDesign CS, especially if the artwork includes transparency.

Note: Simulate Overprint should be enabled only for desktop proofing as it attempts to simulate the appearance sometimes at the expense of preserving spot colors. Final output should always be done with Simulate Overprint disabled.

Overprinting and Transparency

For the most part overprinting and transparency are different animals, but they share some of the same principles. Both Illustrator CS and InDesign CS give you the option to overprint (rather than knockout) overlapping objects, and they both include several features for creating transparency effects. But while overprint is not transparency, transparency can affect overprint.

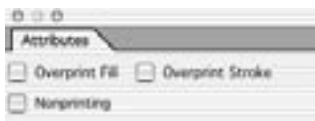
Illustrator CS lets you either Preserve, Discard, or Simulate overprints (in the Advanced pane of the Print dialog box). Overprinting is preserved in InDesign CS documents that don't contain transparency (including non-normal blending modes). However, if overprinting is mixed with transparency, flattening can cause overprinting to be preprocessed in areas where both overprinting and transparency are applied. The following paragraph summarizes how Illustrator CS and InDesign CS handle overprinting.

If an overprinted object is involved in transparency, overprint is flattened (i.e. the overprinted object is divided into atomic regions and their color is flattened, taking overprint into account). Flattening of overprinting maintains the visual appearance of the objects involved, and it separates correctly.

In other scenarios, overprint instructions can be generated as a result of flattening, even if no overprint is set manually. This can happen when spot colors that are involved in transparency are flattened. Illustrator CS and InDesign CS handle the flattening and correctly manage the spot colors. The result of this is that when opening or placing flattened Adobe PDF 1.3 files, you may need to enable Overprint Preview to accurately preview the file.

Here's a list of conditions under which overprinting instructions are preprocessed by the flattener:

- When overprinting objects have transparency applied directly to them (for example, objects that are less than 100% opaque).
- When overprinting objects are part of a group to which transparency is applied.
- When overprinting objects are overlapped by or are within approximately 1/72" of transparent objects or groups.



The Attributes palette (Window > Attributes) in InDesign CS (above) and Illustrator (below) let you apply overprinting to fills and strokes.



- When a placed graphic contains overprinted objects and transparency is then applied to the placed graphic.
- When overprinting objects are part of a complex region of transparency that must be rasterized during flattening.
- When Simulate Overprinting is selected in the Advanced options of the Export dialog box (InDesign CS only). *(Note: By default, this checkbox is not selected and should remain so for high-end printing workflows. It should be selected only when printing proofs to low-end composite devices that cannot otherwise output overprinting or when creating proof [low resolution] PDF files that simulate overprinting as seen on-screen.)*
- If you choose to preserve overprints in the Illustrator CS Print dialog box (File > Print > Advanced > Overprints > Preserve). *(Note: You should select the Overprints: Preserve option for high-end printing workflows.)*

In many cases, the results of flattening overprinting instructions are identical to what happens when a PostScript RIP interprets the same overprinting instructions and should not cause a problem in your workflow.

Note: With Illustrator CS, overprinting instructions are not always preserved when a document is flattened; although the visual appearance of overprint is preserved. You can preserve overprinting for objects that aren't involved in transparency by checking Preserve Overprint When Possible in the Print dialog box.

Preventing Transparency Problems

To minimize the possibility of transparency-related problems, you should:

- Install and use the latest Adobe software updates.
- Move all text objects that don't interact with transparency to the top layer of the document.
- Soft-proof documents on-screen by enabling Overprint Preview (View menu) or by displaying the Separation Preview palette to ensure the output is how you intend.
- Install and use the latest PostScript Printer Definitions (PPDs)/printer drivers.
- Talk to the person responsible for printing your files, and let him/her know if and how you have used transparency.
- Make sure your service provider has and uses the latest RIP software updates.
- Read the ReadMe.PDF files that accompany the product installers for additional known issues, resolved issues, and production and troubleshooting tips.
- Be careful when you mix overprinting and spot colors with transparency. To view the printed results of overprinting on-screen, enable Overprint Preview (View menu).
- If possible, save native copies of your Illustrator CS files. If you export files in Illustrator 8 EPS format, the files are flattened, and you cannot edit transparency effects. If you need to export an Illustrator 8 EPS file, you should save a copy of the file as well as the native Illustrator CS file.



A Final Word of Caution

Despite your best efforts to avoid transparency problems, some may still arise. Below is a list of problems that can occur in order of likelihood. Generally, problems are the result of the way a file was created or the way the flattener settings were used, as well as the methods and equipment your printer uses to process your files.

1. Spot colors may display colors on process plates or convert to process. Exporting to an older file format, such as Illustrator 8 EPS from Illustrator CS may cause this. Some prepress software may inadvertently misinterpret flattened EPS files, which results in converting spot colors to process. In this case, do not use EPS; use native InDesign CS, native Illustrator CS, or Adobe PDF files.

2. Transparency flattening can include the process of executing the overprint attribute manually assigned to spot objects. When this occurs, overprinting instructions are not preserved after flattening; however, the objects will look correct when printed because the overprint is taken into consideration when transparency is flattened. The person responsible for printing needs to be aware that changing overprinting instructions at the RIP can affect not only objects set to overprint, but flattened transparency as well. You should never use a RIP's "discard overprint" option when dealing with transparency.
3. Vector objects may get rasterized at a resolution that's too low for the output device. It's best for the person responsible for printing to handle flattening. Your printer will use flattener and resolution settings that are appropriate for the output device.
4. Artifacts may appear along the edges of atomic regions. If possible, let your service provider do the flattening to avoid these problems.
5. Hairlines and strokes may fatten. Generally, this is a problem only on low-resolution output devices.
6. Type may be converted to filled strokes. That is, the characters may thicken. This can be a problem on low-resolution devices. It is less of a problem on high-resolution devices.

Transparency and OPI

Open Prepress Interface (OPI) is not compatible with transparency. Low-resolution images must be replaced with high-resolution images before flattening (that is, fatten before you flatten). If low-resolution images are flattened, the results will be low-resolution.

CHAPTER 5

Saving and Exporting Files with Transparency

If you're creating a stand-alone Illustrator CS or InDesign CS layout that contains transparent objects—that is, a layout you don't intend to use in other layouts or other applications—you can save the document as you would save any other document, that is, as a native Illustrator (.AI) or native InDesign (.INDD) file using the Save command (File menu). However, if you intend to use an Illustrator CS or InDesign CS layout in another layout or application, you must decide whether to save a native file or export the layout in a different file format.

Note: You can place native Illustrator (.AI), native Photoshop (.PSD), Adobe PDF 1.4, and PDF 1.5 files into InDesign CS layouts. Because these file formats can contain live transparency, using them for artwork that is placed into InDesign CS layouts is both convenient—because you don't have to save artwork in multiple file formats—and effective—because InDesign CS can handle files that contain live transparency.

Choosing a File Format When Saving/Exporting

Whenever possible, you should use file formats that preserve live transparency—including native formats for Illustrator CS and InDesign CS documents or Adobe PDF 1.4—when you're creating graphic files for placement in documents created with other Adobe Creative Suite applications.

Note: If you use Illustrator CS and Photoshop CS to create transparent artwork for placement into a page layout program, Adobe strongly recommends that you use InDesign CS to create your page layouts. InDesign CS supports transparency in native Photoshop CS and Illustrator CS files, and also includes built-in transparency features that you can use “on-the-fly” as you lay out pages and build documents. InDesign CS also can also import, display, and print Adobe PDF 1.4 and PDF 1.5 files that contain live transparency.

Saving files in native formats provides several advantages over the other file format options:

- **Greater control at print time.** Using native file formats gives you control over the flattener and resolution settings up to the time you print, save, or export a job in a non-native file format (such as PostScript).
- **Reduce file overhead.** By saving a single, native version of a graphic instead of multiple, exported TIFF or EPS files, you reduce the number of files you have to track, and you also reduce the disk space required to store your graphics.
- **Easy editability.** InDesign CS allows you to directly link to native Photoshop files, native Illustrator files, and Adobe PDF files, which allows you to preserve live transparency throughout the page layout workflow. If you need to make changes to a native Illustrator graphic that's been placed into an InDesign CS layout, you can simply open the file in Illustrator CS and make the changes. (You can easily open the original Illustrator file in Illustrator from within InDesign CS by selecting it in the Links palette and then choosing Edit Original from the palette menu or by holding down Alt/Option and double-clicking the graphic.) Other formats flatten Illustrator objects, making them uneditable. Flattened files force you to open the file in Illustrator CS, make the changes, export and flatten the file again, and finally relink the placed graphic in InDesign CS. When you modify a placed native Illustrator graphic, all instances of the graphic in InDesign CS documents are updated. When it's time to print the finished InDesign CS document, the printer can flatten all transparency at once directly from within InDesign using the flattener controls in InDesign CS.

Remember, when you export a document (including Photoshop CS, Illustrator CS, and InDesign CS documents) in any file format that flattens transparency, the document is flattened in the same way that it's rasterized when printed, and you lose the ability to edit the original objects, except for Illustrator CS EPS files—and only if the file is reopened in Illustrator CS.



Exporting EPS files

Illustrator CS can save files in its own (Illustrator CS) EPS format, as well as export files in EPS formats that are compatible with earlier versions of Illustrator. Illustrator CS EPS files are best-suited for use in a high-end print workflow because of the management of spot colors and transparency. Only Illustrator CS is able to read the transparent portion of an Illustrator EPS file. Photoshop CS, InDesign CS, Acrobat Distiller, and non-Adobe software will use only the flattened portion of the file.

Transparency is always flattened when a file is saved as an EPS format. An Illustrator CS EPS file, however, (unless resaved in another application) retains transparency information, so live transparency is restored if the file is reopened in Illustrator CS.

Note: If you save an Illustrator CS file using a legacy format (e.g., Illustrator 8), type is converted to outlines, and spot colors are converted to process colors. You can open the file in Illustrator, but you won't be able to edit any text that's been converted to outlines. Adobe recommends using the latest version of all its applications to avoid such problems.

You can export two kinds of EPS files using InDesign CS, however, only one is generally suitable for high-end printing workflows. By default, InDesign CS exports EPS files in which overprinting instructions are preserved wherever possible—in some limited cases, the flattening process will preprocess these instructions and incorporate the overprinting with the transparency information. These default EPS files are suitable for output on printing presses. If you select Simulate Overprint in the Export dialog box, InDesign CS can optionally export EPS files in which all overprinting instructions are preprocessed and the appearance of overprint is simulated for output on composite devices. These EPS files with Simulate Overprint enabled are suitable for desktop printing and proofing. As a rule, you shouldn't use the Simulate Overprint option for high-end printing workflows.



Exporting Adobe PDF files

Adobe PDF 1.4 (also known as Acrobat 5 PDF) and PDF 1.5 (Acrobat 6 PDF) can accurately display live transparency created by any Adobe transparency-savvy authoring and layout application. Illustrator CS and InDesign CS can both import and export live transparency as Adobe PDF 1.4 and PDF 1.5. Among other benefits, this format preserves spot colors and overprinting without flattening.

Note: Adobe PDF 1.4 and PDF 1.5 files created using Distiller will not contain live transparency because Distiller operates on PostScript, which can contain only flattened transparency.



Exporting Illustrator CS Files with Transparency







If you intend to use an Illustrator CS graphic in another Illustrator CS document or in another Adobe graphics application, such as InDesign CS or Photoshop CS, you have the option to save the Illustrator CS graphic as a native Illustrator (.AI), EPS, or Adobe PDF file, or you can export a native Photoshop (.PSD) or TIFF file. The following chart shows the save/export file format options available in Illustrator CS and how transparency is saved for each format. Choose File > Save or File > Save As to save an Illustrator CS document in a native Illustrator format or as a Adobe PDF or EPS file; choose File > Export to save a native Photoshop (.PSD) or TIFF file.

Note: You can preserve live text, layers, masks, compound vector shapes, and more when you export Illustrator graphics in .PSD format. For more information, see the Illustrator CS User Guide.

If you use QuarkXPress for page layout, you must save Illustrator graphics as EPS or Adobe PDF 1.3 files. You cannot place native Illustrator files nor graphics with live transparency into QuarkXPress layouts.

Illustrator CS users who have been placing EPS files created with previous versions of Illustrator into QuarkXPress documents for the sole purpose of printing the artwork should directly print from Illustrator CS.

Illustrator CS export file formats and transparency

Output Formats		Transparency Embedded As
Native Illustrator CS (.AI)		Live or flattened
PostScript (for RIP or Distiller)		Flattened
Adobe PDF 1.3 (Acrobat 4)		Flattened
Adobe PDF 1.4 (Acrobat 5) and PDF 1.5 (Acrobat 6)		Live or flattened
EPS		Flattened*
Other formats (non-Illustrator EPS, TIFF, etc.)		Flattened**

* Illustrator CS can open AI EPS files, and the transparency can be edited. All other products can place and use the flattened portion of the EPS file. The file may need to be place-embedded.

** Some graphic file formats (EPS not from Illustrator, TIFF, etc.) cannot handle live transparency.

Exporting Illustrator CS graphics for use in programs that can't handle transparency

If you use Illustrator CS graphics in page layout programs that can't handle transparency, you should specify flattening settings and save transparent artwork in Illustrator CS EPS format, especially if spot colors are involved and you intend to print separations.






Currently, InDesign CS is the only page layout program that can interpret unflattened, live transparency in native Illustrator files and Adobe PDF 1.4 and PDF 1.5 files. Illustrator EPS and Adobe PDF (1.3, 1.4, and 1.5) will preserve spot colors. Be aware that spot colors are converted to process when you export to Illustrator 8 EPS.

Exporting InDesign CS Files with Transparency

If you want to use an InDesign CS page in another InDesign CS layout or another program, such as Illustrator CS or Photoshop CS, you can export Adobe PDF or EPS files. You can also use the Print dialog box to create PostScript files that can be converted to Adobe PDF with Acrobat. The chart below shows the save/export file format options available in InDesign CS and how transparency is saved for each format.

Note: Choose File > Save or File > Save As to save a native InDesign CS document (or template); choose File > Export to save Adobe PDF or EPS files; and choose File > Print to create a PostScript file.

InDesign CS export file formats and transparency

Output Formats		Transparency Embedded As
InDesign CS Native (.INDD)		Live
PostScript (for RIP or Distiller)		Flattened
Adobe PDF 1.3 (Acrobat 4)		Flattened
Adobe PDF 1.4 (Acrobat 5) and PDF 1.5 (Acrobat 6)		Live or flattened
EPS		Flattened

Delivering Adobe PDF Files for Print

If your service provider uses prepress tools that can't interpret Adobe PDF 1.4 or PDF 1.5 files with transparency, you should deliver native InDesign files to your print service provider or save InDesign CS documents that contain transparency as PostScript files or Adobe PDF 1.3 files using the High Resolution flattener preset, or ask the person responsible for printing your files for his/her recommended flattener settings. PostScript and Adobe PDF 1.3 files created in this manner in InDesign CS provide high-quality results, preserve overprinting and spot colors where possible, and separate correctly. (For more information about delivering files with transparency to your service provider, see Chapter 7, "Delivering Files with Transparency to Your Print Service Provider.")

The people responsible for printing documents often prefer to receive files in certain formats. When you provide files to this person for output, make sure you let him/her know if transparency is involved. If he/she does not have experience processing files with transparency, have him/her contact Adobe technical support or the Adobe Solutions Network (<http://partners.adobe.com/asn/main.html>) to receive free training materials and other useful resources.

CHAPTER 6

Printing Files with Transparency

When you want to print an Illustrator CS or InDesign CS layout—whether the output device is a relatively low-resolution proof printer or a high-resolution image setter—all transparent objects in the file, as well as any linked files that contain live transparency, must be flattened. That is, the transparency information in the file must be converted into a format the person responsible for printing the file can understand.

In most cases, flattening produces excellent results when you use an appropriate predefined flattener preset in InDesign CS and Illustrator CS. If your document contains complex, overlapping areas and you require high-resolution output, you can achieve more reliable print output by following a few basic guidelines.

For a complete reference and troubleshooting guide on how transparency affects output, see the document, “Achieving Reliable Print Output from Adobe Applications with Transparency” at www.adobe.com/asnprint.

Previewing Transparency Before You Print with the Flattener Preview Palette

Illustrator CS and InDesign CS, as well as Acrobat 6 Professional software, have a Flattener Preview palette that lets users quickly see where transparency occurs on a page and can alert service providers to areas that contain transparency.

The Flattener Preview palette in Illustrator CS

The Flattener Preview palette, which was included as an optional plug-in with Illustrator 10, is built into Illustrator CS and is also available in Acrobat 6 and InDesign CS. You can use the preview options in the Flattener Preview palette to highlight the areas affected by flattening. You can use this information to adjust the flattening settings, and you can use the palette to save flattener presets.



The Illustrator CS Flattener Preview palette.

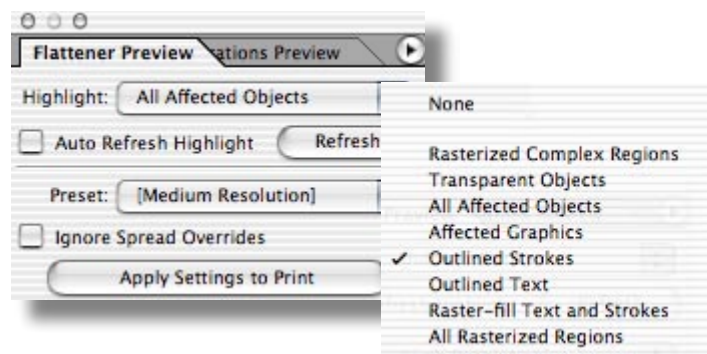
The choice you make in the Highlight menu determines what's displayed in the preview area:

- **None (Color Preview)** shows a color preview of the artwork without highlighting anything.
- **Rasterized Complex Regions** highlights the areas that will be rasterized for performance reasons (as determined by the Rasters/Vectors slider).
- **Transparent Objects** highlights the objects that are sources of transparency, such as objects with partial opacity (including images with alpha channels), objects with blending modes, and objects with opacity masks. In addition, graphic styles and effects may contain transparency, and overprinted objects may be treated as sources of transparency if the overprint needs to be flattened.
- **All Affected Objects** highlights all objects that are involved in transparency, including transparent objects and objects that are overlapped by transparent objects.
- **Affected Linked EPS Files** highlights all linked EPS files that are affected by transparency.
- **Expanded Patterns** highlights all patterns that will be expanded because they are involved in transparency.

- Outlined Strokes highlights all strokes that will be converted to outlines because they are involved in transparency or because the Convert All Strokes to Outlines option is selected.
- Outlined Text highlights all text that will be converted to outlines because it is involved in transparency or because the Convert All Text to Outlines option is selected.
- All Rasterized Regions highlights objects and intersections of objects that will be rasterized because there is no other way of representing them in PostScript or because they are more complex than the threshold specified by the Rasters/Vectors slider.

The Flattener Preview palette in InDesign CS

You can use the preview options in the Flattener Preview palette to highlight the areas of a page affected by flattening. The areas of the artwork affected by transparency are highlighted in color in the document window, while the rest of the artwork appears in grayscale. You can adjust the flattening options and see which objects are affected. The Flattener Preview palette also includes controls for applying flattener presets to spreads and to ignore spread overrides.



The Flattener Preview palette provides several options for displaying flattened objects.

Note: The Flattener Preview palette is not intended for precise previewing of spot colors, overprints, and blending modes. Use Overprint Preview mode to preview spot colors, overprints, and blending modes as they will appear when output.

Printing Proofs from the Desktop

Printing a document that contains transparency is much the same as printing any other document—with one important difference: You should choose a flattener preset in Illustrator or InDesign or specify flattener settings in Acrobat 6 that are appropriate for the printer.

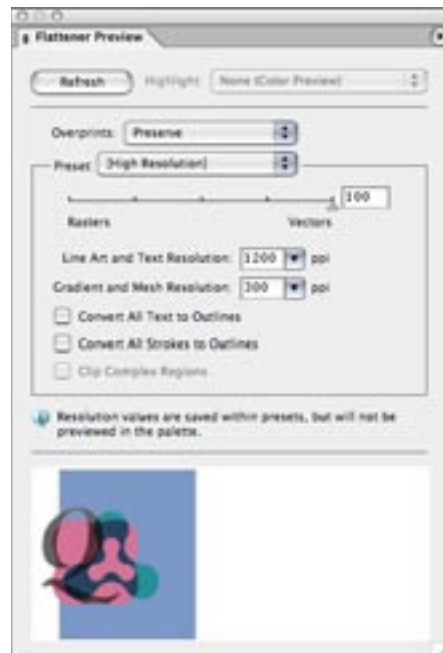
Printing Proofs with Illustrator CS

Here's a checklist for designers to help ensure reliable printing with Illustrator CS when printing proofs:

1. Specify the CMYK color mode (File > Document Color Mode > CMYK Color) for files that will be printed on a desktop proof printer.
2. Specify the proper ppi for your document in the Document Raster Effects Settings dialog box. Medium (150 ppi) is the typical setting for proof printing.



3. Ensure that your resolution-dependent live effects (such as Gaussian blur and mezzotint) still look the way you want them to after changing the ppi value in the Document Raster Effects Settings dialog box.
4. Use the Overprint Preview display mode (View > Overprint Preview) to approximately display how the objects you've specified for overprinting will appear in color-separated output.
5. Preview your artwork in the Flattener Preview palette to determine which areas will be affected by transparency. Or, preview the areas of your artwork that will be rasterized to ensure text will not be rasterized. Speak with your service provider to ensure you have selected the proper settings.



Printing Proofs with InDesign CS

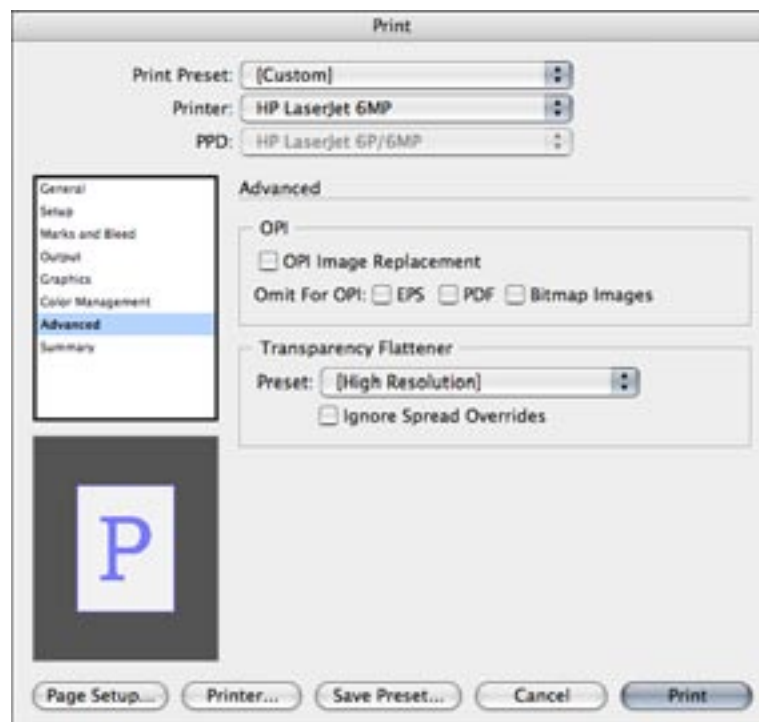
In InDesign CS, you can choose a flattener preset when you print a document. To choose a flattener preset, choose File > Print and click Advanced in the list of print options on the left side of the Print dialog box. In the Transparency Flattener area of the Advanced pane of the Print dialog box, choose an appropriate flattener preset from the (Transparency Flattener) Preset menu.

The (Transparency Flattener) Preset menu includes three default presets—Low Resolution, Medium Resolution, and High Resolution—as well as any custom flattener presets you’ve created. (To create custom flattener presets, choose Edit > Transparency Flattener Presets. For information about creating flattener presets, refer to the InDesign CS User Guide.)

If you’re printing a proof to a PostScript printer, you should choose the Low Resolution or Medium Resolution flattener preset.

- Choose the Medium Resolution flattener preset for desktop proofs printed on black-and-white desktop printers.
- Choose the Medium Resolution preset for desktop proofs and print-on-demand documents printed on PostScript color printers.

If you are printing to a printer that is not a PostScript printer, the (Transparency Flattener) Preset is not available. In this case, you should enable Simulate Overprint in the Output pane of the Print dialog box. When Simulate Overprint is enabled, the proof print will look the same as it’s displayed on-screen with Overprint Preview (View menu) enabled.



The Transparency Flattener preset you choose in the Advanced pane of the InDesign CS Print dialog box determines how transparency effects are flattened when the file is printed or exported in a file format that doesn’t preserve live transparency.

CHAPTER 7

Delivering Files with Transparency to Your Print Service Provider

As you learned in the introduction to this guide, transparency must be flattened for print output. In most cases, flattening produces excellent results when you use an appropriate predefined flattener preset or a custom flattening preset with settings appropriate for your final output. However, flattening may alter colors and transparent objects in ways that can affect output quality.

If your Illustrator CS and InDesign CS documents contain complex, overlapping areas and you require high-resolution output, you should work closely with your print service provider. Your print provider can specify optimal flattener settings based on the file formats used, the resolution of the final output device, and their workflow. Good communication between you and your service provider will help you achieve the results you expect.

Most often, your printer will handle flattening, so you should provide native Illustrator or InDesign files, or an Adobe PDF 1.4 or PDF 1.5 file. If Adobe PDF 1.3 or PDF/X files are requested, consult with your printer about their recommended flattener and resolution settings. InDesign CS and Acrobat 6 Professional have several PDF/X creation and validation features.

Not all service providers support all file types. Make sure to check with your service provider and ask them what file types they accept.

If your print service provider would like more information about printing files with transparency, you can point them to the Adobe Print Services Resources page at www.adobe.com/asnprint.

What Kind of File Should You Provide?

If you intend to provide your service provider with Illustrator CS files, InDesign CS files, or Adobe PDF files that include live transparency, you have several options. Before you decide on the file format you'll use, you should be aware of some of the capabilities and limitations of the various formats.

- **Adobe PDF 1.3 and PDF/X files.** All transparency is flattened in Adobe PDF 1.3 and PDF/X files. The resolution of transparency effects is determined by the applied flattener preset and cannot be changed after the PDF file is saved nor can transparency effects in PDF files be modified. Adobe PDF 1.3 files can be output by PostScript Level 2 and 3 RIPs. One of the main benefits of delivering Adobe PDF files to your print service provider is that everything required to print—including fonts and graphics—is contained in a single file.
- **Adobe PDF 1.4 and PDF 1.5 files.** These files can include live transparency when saved from Illustrator CS or exported from InDesign CS. Transparency is flattened if printed to PostScript and distilled to Adobe PDF 1.4 or PDF 1.5.
- **Native Illustrator CS (.AI) and native InDesign CS (.INDD) files.** These files have several benefits:
 - (1) You or your print service provider can easily make changes to native files up to the last minute.
 - (2) Flattening at the latest possible stage produces the best results.
 - (3) Your print service provider can change the output resolution and other print-related settings.
 - (4) Preflighting can be accomplished more effectively on live transparency than on flattened transparency.
 - (5) Spot colors can be fixed—for example, if a document contains too many spot colors—if the transparency is live. Once flattened, spot colors involved in transparency cannot be altered.