

- If the overprint mode is 1 (nonzero overprint mode) and the current colour space and group colour space are both **DeviceCMYK**, then process colour components with nonzero values shall replace the corresponding component values of the backdrop; components with zero values leave the existing backdrop value unchanged. That is, the value of the blend function $B(c_b, c_s)$ shall be the source component c_s for any process (**DeviceCMYK**) colour component whose (subtractive) colour value is nonzero; otherwise it shall be the backdrop component c_b . For spot colour components, the value shall always be c_b .
- In all other cases, the value of $B(c_b, c_s)$ shall be c_s for all colour components specified in the current colour space, otherwise c_b .

EXAMPLE 1 If the current colour space is **DeviceCMYK** or **CalRGB**, the value of the blend function is c_s for process colour components and c_b for spot components. On the other hand, if the current colour space is a **Separation** space representing a spot colour component, the value is c_s for that spot component and c_b for all process components and all other spot components.

NOTE 2 In the previous descriptions, the term *current colour space* refers to the colour space used for a painting operation. This may be specified by the current colour space parameter in the graphics state (see “Colour Values”), implicitly by colour operators such as **rg** (“Colour Operators”), or by the **ColorSpace** entry of an image XObject (“Image Dictionaries”). In the case of an **Indexed** space, it refers to the base colour space (see “Indexed Colour Spaces”); likewise for **Separation** and **DeviceN** spaces that revert to their alternate colour space, as described under “Separation Colour Spaces” and “DeviceN Colour Spaces”.

If the current blend mode when **CompatibleOverprint** is invoked is any mode other than **Normal**, the object being painted shall be implicitly treated as if it were defined in a non-isolated, non-knockout transparency group and painted using the **CompatibleOverprint** blend mode. The group's results shall then be painted using the current blend mode in the graphics state.

NOTE 3 It is not necessary to create such an implicit transparency group if the current blend mode is **Normal**; simply substituting the **CompatibleOverprint** blend mode while painting the object produces equivalent results. There are some additional cases in which the implicit transparency group can be optimized out.

EXAMPLE 2 Figure L.20 in Annex L shows the effects of all four possible combinations of blending and overprinting, using the **Screen** blend mode in the **DeviceCMYK** colour space. The label “overprint enabled” means that the overprint parameter in the graphics state is **true** and the overprint mode is 1. In the upper half of the figure, a light green oval is painted opaquely (opacity = 1.0) over a backdrop shading from pure yellow to pure magenta. In the lower half, the same object is painted with transparency (opacity = 0.5).

11.7.4.4 Special Path-Painting Considerations

The overprinting considerations discussed in 11.7.4.3, “Compatibility with Opaque Overprinting,” also affect those path-painting operations that combine filling and stroking a path in a single operation. These include the **B**, **B***, **b**, and **b*** operators (see “Path-Painting Operators”) and the painting of glyphs with text rendering mode 2 or 6 (“Text Rendering Mode”). For transparency compositing purposes, the combined fill and stroke shall be treated as a single graphics object, as if they were enclosed in a transparency group. This implicit group is established and used as follows:

- If overprinting is enabled (the overprint parameter in the graphics state is **true**) and the current stroking and nonstroking alpha constants are equal, a non-isolated, non-knockout transparency group shall be established. Within the group, the fill and stroke shall be performed with an alpha value of 1.0 but with the **CompatibleOverprint** blend mode. The group results shall then be composited with the backdrop, using the originally specified alpha and blend mode.
- In all other cases, a non-isolated knockout group shall be established. Within the group, the fill and stroke shall be performed with their respective prevailing alpha constants and the prevailing blend mode. The group results shall then be composited with the backdrop, using an alpha value of 1.0 and the **Normal** blend mode.