3   Extensions to ISO 32000-1

3.1   Transparency

The following material amends Section 11.3.5, "Blend Mode."

TABLE 136 Standard separable blend modes	
NAME	**RESULT**
ColorDodge	Brightens the backdrop color to reflect the source color. Painting with black produces no changes. $$B(c_b, c_s) = \begin{cases} 0, & c_b = 0 \\ 1, & c_b \geq (1 - c_s) \\ \big(c_b/(1 - c_s)\big), & otherwise \end{cases}$$
ColorBurn	Darkens the backdrop color to reflect the source color. Painting with white produces no change. $$B(c_b, c_s) = \begin{cases} 1, & c_b = 1 \\ 0, & (1 - c_b) \geq c_s \\ 1 - \big((1 - c_b)/c_s\big), & otherwise \end{cases}$$

Note: These functions are formulated in a different way here than they are in ISO 32000-1. However, they produce the same results except in one special edge case. For ColorDodge, the special case is cb = 0 and cs = 1, where the result is now 0 instead of 1. For ColorBurn, the special case is cb = 1 and cs = 0, where the result is now 1 instead of 0. The rationale for the change is that for any given cb, the result should be a continuous function of cs.

3.2   Portable Collections

3.2.1 Background

This proposal clarifies the behavior of the **D** entry when its value does not match any embedded file. ISO 32000-1 currently says that if the **D** entry "is missing or in error", the root document should be shown. In retrospect, the second half of this definition was probably a mistake: if the **D** entry exists but doesn't match a file, the most likely explanation is that it did match a file at one time, but the file was removed. In that case it would be more desirable to select another file in the list than to show the root document, particularly when the root document has a compatibility message that advises the user to upgrade to the product they are currently using.

3.2.2 Proposal

In table 155 (12.3.5), the definition of the D key is amended as follows, with the new language underlined.