

**On-Press Color Shift**

**More of our customers are demanding a perfect color match, some to within 2  $\Delta E$  (delta E) units or better. Having invested in all the latest color-matching technology and equipment to handle this, we still experience color-shift during production. This is now causing us costly disruptions and waste in production. Have we missed something or are we asking for the impossible?**

**Answer:** With our increased level of sophistication and its resultant impact on print quality, many printers have come to understand the direct correlation between fabric selection and screen tension to the amount of ink deposited. Thus, screens used for color matching should ideally be of the same fabric grade and tension as those to be used in production. The closer the two, the less likely on-press color-shift will be.

Because of the characteristics of its woven structure (excluding the influence of emulsion thickness, ink and press setup parameters), fabric initially governs the mechanical amount of deposit, or volume of ink, to be printed. No two mesh grades, particularly if widely different, can possibly lay down the same amount of color — either by volume or by thickness. Then, perhaps even more importantly, screen tension can play a major role to obtain consistency from color-match to production. Without getting into a lot of detail, the weaker the tension, the greater the restriction of how much ink is transferred — period! Full coverage or opacity cannot be guaranteed with weak tension and could ultimately lead to ink starvation or “grinning” (allowing the substrate or previously printed colors to show through). Conversely, good tension levels, as recommended by the mesh and frame suppliers, reduce friction and permit superior, unhindered ink transfer — even if some important press adjustments are questionable.

Color shift is such a concern with some operations that they go one step further — employing as near as possible the same squeegee durometer, speed, pressure, angle, etc., and other press settings that will be used in actual production. To achieve this, a small press for color matching is required. That old small model hidden under a layer of dust in the far corner could be ideal for this purpose.

**-- The Print Guru, Mike Young, August 2004**