

Colour Negative Construction

The colour film has three light sensitive emulsions coated one on top of the other. The emulsion next to the film base is sensitive only to red light, the next only green and the top layer is blue sensitive, in reality all 3 layers are sensitive to blue light, but blue light is prevented from reaching the bottom two layers by a yellow filter layer coated below the top blue sensitive layer.

The processed film

Once processed each film layer must, when placed in the enlarger control its specific colour falling on to the colour paper. Thus the blue layer must control the amount of blue light exposing the colour paper, the green layer must control the green light and the red must control the red. This is achieved by producing three subtractive dyes in the colour negative film, I.E yellow dye which absorbs only blue light, magenta dye which absorbs only green light, and cyan dye which absorbs only red. Consequently the blues are recorded as variations in the amount of yellow dye in the processed colour negative. Greens are variations in magenta and red are variations of cyan dye.

Colour negative base is brown is to compensate for the fact the each layer is susceptible to each of the other two colours.

Colour paper is constructed in a similar manner to colour film, and has 3 emulsion layers which respond to Blue, Green, Red light and produce Yellow, Magenta and Cyan in the finished print.

The Colour Development Process

Colour developer = the exposed light sensitive salts are developed to give a black, silver, and dye image. Most critical and should be accurately controlled for time, temp etc.

Bleach = this converts black silver formed by dev back to silver salts.

Fix = removes silver salts to leave film/paper with only dye images.

Stabilizer = leaves the film/ paper without chemical in a stable state, so that the dyes are less susceptible to fading.

I paper development; the Bleach and Fix are combined.