Basic explanation of spot colour, process and gradient print

Spot Colours

Colours created without screens or dots, such as those found in the PANTONE MATCHING SYSTEM®, are referred to in the industry as spot or solid colours. From a palette of 14 basic colours, each of the spot colours in the PANTONE MATCHING System is mixed according to its own unique ink mixing formula developed by Pantone. You probably mixed yellow and blue paint to get green in your youth. Creating a PANTONE Spot colour is similar in concept, but with the added need for precision.
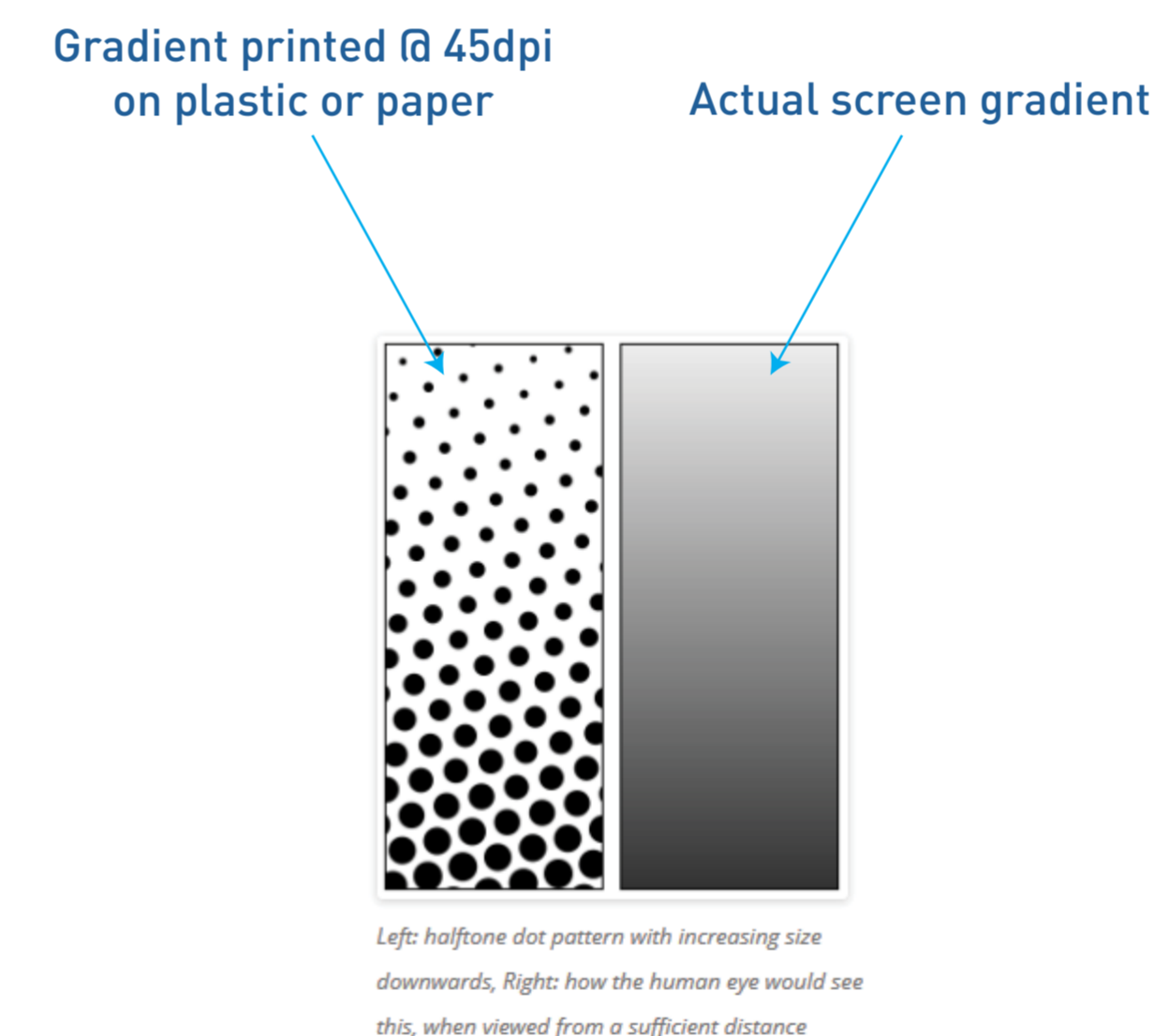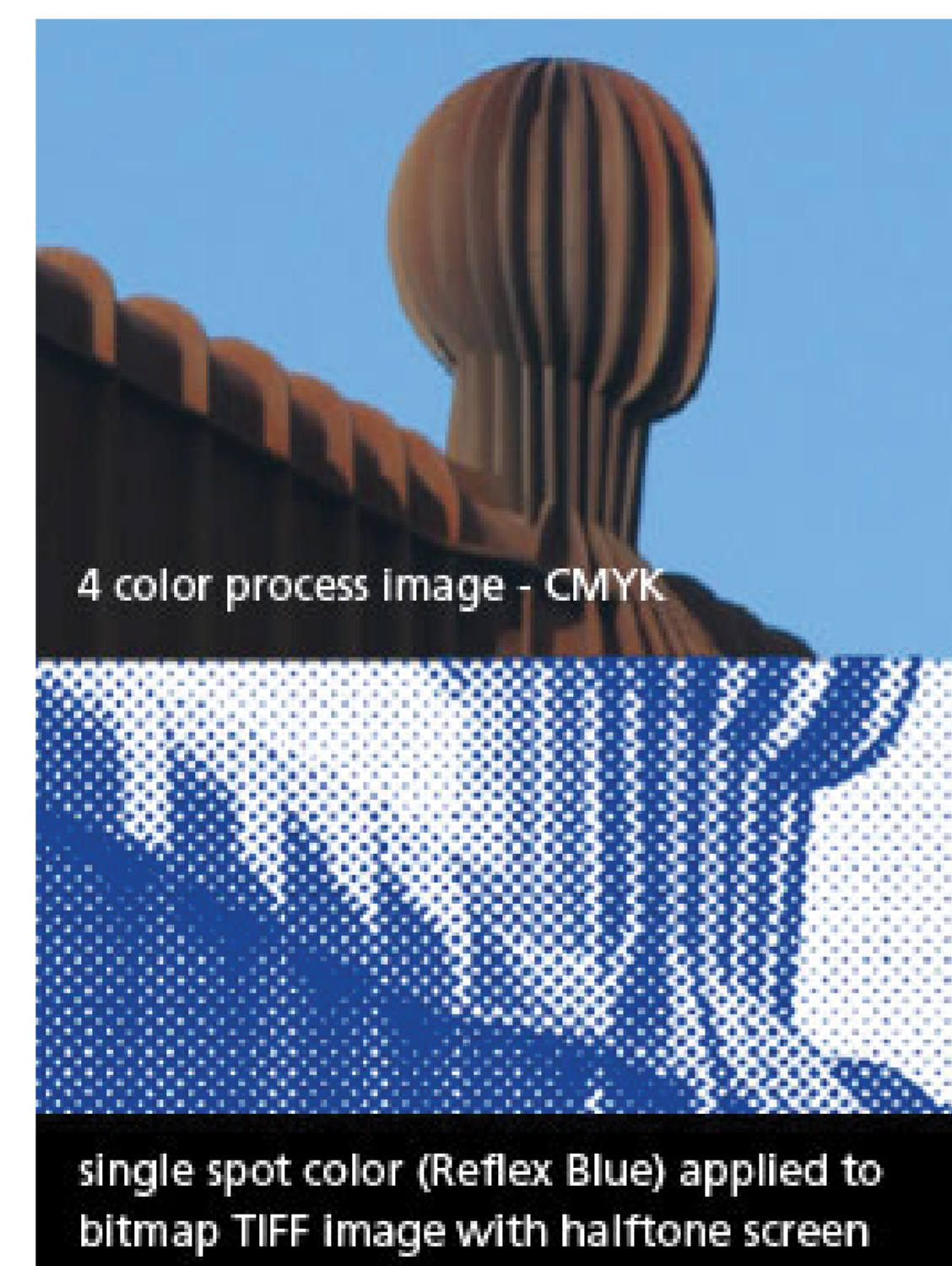
Solid spot colour are preferable for a clean print on plastic carrier bags.

Black c + 485c =

Colour - Gradients

Halftoning breaks down the continuous tone into regularly spaced but variably sized spots (examples below)

Halftones are normally printed around 45 dpi on Plastic carrier bags

4 color process image - CMYK

single spot color (Reflex Blue) applied to bitmap TIFF image with halftone screen

Gradient printed @ 45dpi on plastic or paper

Actual screen gradient

Left: halftone dot pattern with increasing size downwards, Right: how the human eye would see this, when viewed from a sufficient distance
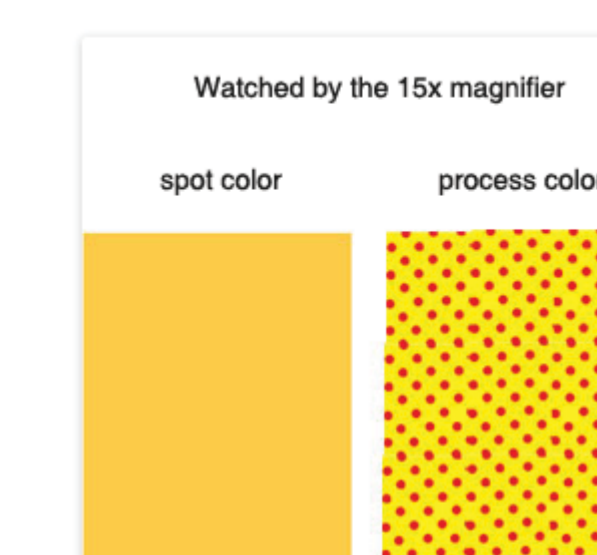
CMYK

This method of achieving colour in printing is referred to as CMYK, four-colour process, 4/c process or even just process. To reproduce a colour image, a file is separated into four different colours: Cyan (C), Magenta (M), Yellow (Y) and Black (K).

CYAN MAGENTA YELLOW BLACK

FINAL CMYK DETAIL VIEW

4 colour horizontal view
A colour image is separated into CMYK. When printed on paper, the original image is recreated.

During separation, screen tints comprised of small dots are applied at different angles to each of the four colours. The screened separations are then transferred to four different printing plates, one for each colour, and run on a printing press with one colour overprinting the next. The composite image fools the naked eye with the illusion of continuous tone.

Watched by the 15x magnifier

spot color process color

For more information,
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