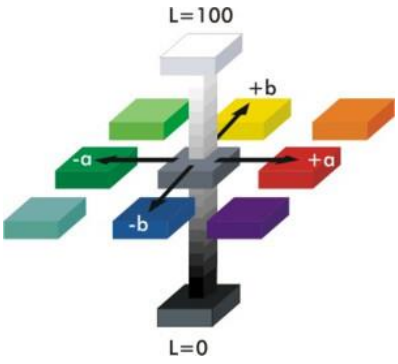
Understanding Colour

Colour Identification

Colour can be expressed in a number of ways but the most common and simple way is to use the CIELAB or L*a*b* method of identifying visible colours. It allows us to assign a set of numbers to identify a colour.

We use a measuring device called a spectrophotometer to measure colours and to provide an L*a*b* reading for a sample.

To evaluate pigments we do not measure the pigment directly, a Masstone colour, but rather we disperse the pigment at a known dosage in a medium such as cement to provide a 'Tint' colour measurement.



L* is a 'Lightness' scale from 0=Black to 100=White.

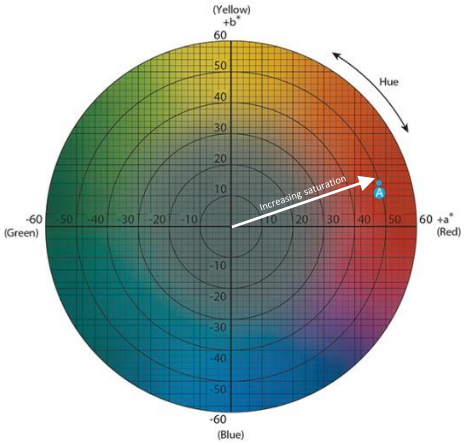
a* and b* are the 'chromaticity' or 'chroma' co-ordinates.

a* is the green (-ve) to red (+ve) axis.

b* is the blue (-ve) to yellow (+ve) axis.

The combination of the a* and b* values define the hue, chroma or 'tone' of a colour.

The magnitude of the a* or b* value (+ or - direction) determines the saturation or 'intensity' of a colour.



Colour Difference

Once two colours have been identified by their individual L*a*b* values, it allows us to determine the difference between the two colours.

The colour difference (dE* or 'delta E') can be determined by measuring two samples on a spectrophotometer that then calculates the dE* value. Alternatively the L*a*b* data for each colour can be measured and recorded and the dE* calculated using a simple formula.

Generally speaking, a colour difference (dE*) of less than 1 is considered to be not significant to the human eye or an excellent match if comparing colours.