

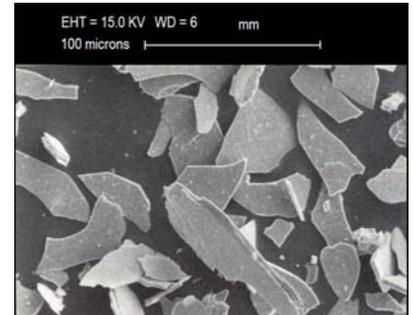
Metallic Pigmented Coatings

5.1.1

What Are Metallic Pigmented Coatings?

Metallic pigmented coatings (or metallic finishes) are coatings that contain irregular, flat, reflective pigments. These pigments may be aluminium flake, micaceous iron oxide or mica. These flat pigment particles reflect light, giving the coating a characteristic "metallic" look that can vary from a bright glitter to a dull sheen. The variation in "sparkle" depends on the particle size – the larger the particle size, the better the light reflection and the greater the sparkle.

Metallic finishes exhibit a phenomenon called "**flip**" – that is, the **perceived colour varies** depending on **viewing angle**. A metallic finish sample, when viewed at an angle where it picks up maximum light, will appear quite light, whereas the same sample, when viewed at an angle at which it does not receive much light will appear quite dark.



Can I Get A Solid Colour Match To My Metallic Sample?

The answer is NO, not easily! If you have a look at any metallic sample, the **colour** depends to a very large extent on **viewing angle**. Thus a grey metallic sample can appear to vary from charcoal to silver.



Colour-matching is usually done by a spectrophotometer, which casts a beam of light at an angle on the surface, then picks up wavelengths of colour reflected onto a sensor, and defines that colour. This is usually not a problem with a solid colour, but with metallic paints, the metallic pigment will act like mirrors, all **reflecting light** in different directions! The beam of light might hit a metallic flake directly, giving the spectrophotometer the false information that it is looking at a white sample!

The image below is of one section of a **uniformly sprayed, perfectly flat surface**. When viewed directly in front of the sample, the colour appears pink. The greater the viewing angle, the more the colour darkens and shifts to purple - blue. To complicate matters, the areas with full sun appear much lighter and those in shade appear much darker.



Effectively, a solid colour would **only match a metallic at one viewing angle** and one set of lighting conditions, and the result will be dependant on the **subjective perceptions** of each observer. Therefore, if you want to use a solid colour in combination with a metallic, take a fandeck or colour atlas and simply judge for yourself which colour you think will **work** with the metallic colour – don't hand it to someone with a spectrometer, as you are likely to be disappointed with the results.

For more information, please contact the Dulux Protective Coatings Technical Consultant in your state.