



# Good2know

## Tuesday

GOOD2KNOW – 15/12/2015  
General Information

**Good2know that...** metamerism can mislead the judgement of colours.

Metamerism is a phenomenon in which two colours are regarded as being identical while their measured color values prove them to be not.

Often, this phenomenon is provoked because of a different composition of pigments.

Making metameric matches using reflective materials is more complex. The appearance of surface colours is defined by the product of the spectral reflectance curve of the material and the spectral emittance curve of the light source shining on it. As a result, the color of surfaces depends on the light source that is in effect. In relation to that, the matching of metallic colors prove to be more difficult than with plain colored material.

Four types of metamerism can be distinguished:

- a. **Illumination metamerism:** when two material samples perfectly match under the influence of one light source, but not of another. Their match is not conclusive.
- b. **Observation metamerism:** is a consequence of visual color recognition or blindness. In that case one particular color will be perceived in a different way by other people.
- c. **Perspective (field-size) metamerism:** occurs at a changing perspective distance. This type of metamerism is used to describe the difference in color perception when perceiving coloured materials from a varying distance (colors that match when viewed as very small may appear different when presented as large color areas). In many industrial applications, large field color matches are used to define color tolerances.
- d. **Geometric metamerism:** is a problem with metallic coatings, but can also appear with other types of powder coating. This phenomenon describes the differences that arise due to a different perception angle: two samples may match when viewed from one angle, but then fail to match when viewed from a different angle. The color of vaulted ceilings in coloured aluminium will, for example, be perceived differently from windows and doors out of the same coloured aluminium. Another common example is the color variation that appears in pearlescent automobile finishes.

For more questions and information, we are at your service!

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