



Substrate Preparation and Product Application Information

Understanding Colour Matching, Colour Limitations and Colour Fading

At Render Systems Australia we are frequently required to match the same colour in different products.

Often a good commercial colour match is acceptable, however, in some cases the customer expects a perfect match similar to that required in automotive touch-ups. We do our best, but for reasons detailed below, a 100% perfect match is not always possible.

THE PHYSICS OF COLOUR

Very simply put, 'light' comes to us in a series of different wavelengths which our eyes interpret as different colours (remember the prism?). If an object looks white, it means all or most of the light rays striking the object are reflected back into our eyes. If it looks bright red, it means the surface of the object is absorbing all the wavelengths except the ones that correspond to red, which are reflected. So when we are matching a colour, we are actually mixing in pigments (colourants).

CONSIDERATIONS FOR COLOUR MATCHING EXPECTATIONS

The pigments are not necessarily pure or chemically identical. They can appear as a perfect match under one light but not as perfect under another light. This phenomenon is known as 'metamerism' and it can cause some seemingly exact coloured materials to vary slightly when compared in different lights. Similar to when you think you have two dark blue socks on when you are in the bedroom, but when you go outside, you notice you have one blue and one black sock on!

In architectural coatings, the difference is not that dramatic but slight colour variations do often appear between indoors and outdoors.

Printed Colour Cards vs True Life Paints and Textured Coatings

Another hurdle when colour matching, is that many colour cards are produced with printing inks, which often use a different type of pigment and cannot be exactly matched with colourants used in acrylic texture coatings and protective coatings.

Textured coatings also contain aggregates, which have their own colour characteristics and impart a greyish tone, which again cannot be reproduced with standard colourants.

In addition to this, the rough surface of textured coatings scatter light rays (colours) reflecting back to our eyes, giving a different appearance at different angles and when compared with the same colour in a smooth finish. At best, a very close commercial match can be provided.

A further consideration is that RSA recommend that most acrylic texture coatings be over-coated with a protective coating such as RSA Protect (Refer to individual Product Data Sheets and Application Guidelines for each product's specific system recommendations).



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For this reason texture coatings are generally only produced in white bases. Some colours require a Deep Base or Ultra Deep Base to produce the required shade in paints. RSA will endeavour to get as close a match as possible to the required colour as some applicators prefer to tint the texture coatings as well as the protective coatings for depth of colour and ease of application.

Variations, however, can be expected. We recommend that a sample be provided in the relevant product and required colour prior to filling a tinted product order. Should the sample be declined the applicator will take full responsibility for acceptance of the colour produced for the order. Please see Coloured Product Ordering Policy and Procedure.

Matching Old Cured and Weathered Coloured Samples

The most challenging sample of all to colour match is when someone brings in a paint chip from an old building for matching. All of the above difficulties arise, as well as a subtle change in appearance caused by weathering and age.

Providing the Best Possible Match

On the bright side of all of this, we at Render Systems Australia are very experienced in colour matching and have the tools to provide you with the best possible colour match available.

Other Considerations

Please confirm whether the RSA Trowel-on or Roll-on Acrylic Texture or RSA Protective Coating requires a Primer tinted to the same colour to achieve the full system requirements. Due to the nature of the substrate and their ability to heat up and promote movement, dark colours are not recommended on Fibre Cement Sheeting and Insitu Formwork.

UNDERSTANDING AND PLANNING FOR COLOUR FADING

Ultraviolet rays break down chemical bonds called 'chromophores', which are present in dyes and paints.

The colour(s) we see are based upon these chemical bonds and the amount of light that is absorbed in a particular wavelength.

Ultraviolet rays or sunlight, can therefore cause a bleaching or degradation effect which may be more noticeable in brighter, more intense colours.

Colours That Fade Quicker

An individual colour pigment's resistance to UV degradation is known as its 'light-fastness'. Unfortunately very few colours are achieved by using just one pigment, so it becomes difficult to predict the 'light fastness' of a mixed colour, particularly since the actual pigments can react chemically with light and with one another - either improving or reducing the potential fade.

As a general rule, gold, red, orange and violet tones fade (or lighten) significantly more than the blue, green and terracotta range of colours.

As you would expect, fading is also affected by the length of time the surface is exposed to direct sunlight and given enough time, all colours will show some change.

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Slow the Fading Process with Quality Coatings

The speed in which a coloured coating will fade also has a great deal to do with the type of paint or coating used. Coatings that contain high quality acrylic resins (such as the RSA Rapid Shield Matt), will fade significantly slower than other lower quality paints. A primer coat prior to the application of protective coatings will also improve the longevity of the colour.

Be Realistic and Plan for Colour Fade

When selecting a colour scheme for a home or project, it is important to keep the potential for colour fade in mind and seek advice from the manufacturer about the coating and their expected lifespan.

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