Resene TradeLines

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“We've made it through the long cold winter and we're now moving from the dangers of being too cold, to being too hot. The hot weather, while great at drying paint, brings with it its own challenges. Relentless heat on unstable substrates causing them to move, painters being cooked when working outside and paint flash drying before you've hardly even got the paint brush out of the can, let alone onto the wall are the obvious ones… so before it gets too hot, let's have a look at some of the heat related obstacles you might have to face and what you can do about it…”

Timber movement - Primer appearing under new paint

Timber is a natural building material that has an affinity with water. When it is first cut, it is absolutely saturated and must be dried out to be useful. Normally it is dried to about 17% moisture content. As the moisture dries out the timber also shrinks. If the timber dries out further it will shrink more and if it absorbs water it will swell.

In some ways it is similar to a sponge cloth that also shrinks when it is dry and visibly swells when it is wetted.

If a weatherboard is made and fixed during the cooler months of the year it is liable to contain water at the top end of the range. If that weatherboard has been painted with a paint, the colour of which absorbs heat; as the warmer months come, some drying out of the board can occur with the inevitable further shrinkage. That is when a tell-tale line of primer can become visible at the bottom of each weatherboard.

This problem is more likely to occur with dark colours and on exposed northern aspects. And the remedy? Apart from venting your frustration, the only real remedy is touching up with the original paint to give a uniform finish. A **Resene Cool Colour** paint applied at the start will also reduce heat buildup, but won't prevent all heat absorption, so it may alleviate the situation on some substrates depending on the substrate, colour, etc – more on that soon.

To skin or not to skin

Skinning is a problem that crops up at certain times each year and is worse in different regions depending on weather conditions. Resene has done extensive research on the causes of skinning in paint and has identified that as the temperature starts to increase outside the pail, the air between the lid and the bulk paint will heat up quicker than the bulk paint. The paint on the lid will also heat up quicker than the bulk paint because it is not as well insulated. As the paint on the lid starts to warm up, water will leave this surface and condense on the surface of the bulk paint. As the paint on the lid loses moisture, it will start to dry, forming a film. This film of dry paint on the lid is referred to as skinning.

What we now know is that it is not the temperature itself that causes the skinning effect, it is the change in temperature that causes most of the problems. Even a change in temperature of 10°C can be enough to cause skinning. The more rapid the temperature change, the more likely skinning will occur.

Extensive research work resulted in Resene introducing the modified plastic pail lid to reduce skinning in Resene pails. This modified lid features the circle pattern on the inside and is designed to retain a thicker layer of paint on the lid to reduce skinning. The lid is textured, which increases the surface area of the lid, thus increasing the amount of paint which remains on the lid. The more paint held on the lid, the less likely it is to skin, and if it does happen to skin then the circles will help it to hold onto the lid rather than fall in the paint, which would tend to happen if the lid was smooth.

Like most things, preventing the conditions that cause skinning is still the best way to solve skinning. A large proportion of the skinning issues are caused after the paint leaves Resene and is due to the way the paint is stored.

Paint is best stored at a constant temperature of around 15-20°C out of direct sunlight. This means it's best not to store large volumes of paint exposed to the sun in the back of a van – if you can at least throw a reflective sheet over them so the sun's energy is reflected away from the pails. Differences in storage and handling methods is why some contractors in the same regions have more skinning problems than others. If large volumes of paint are stored in vehicles and then the temperature drops rapidly overnight, skinning of the paint is likely. Generally higher solids paints, paints packed into plastic and untinted white paints are more likely to be affected.

Resene sends much of its paint around the country on pallets protected by insulated pallet covers, designed to help keep the paint at a constant temperature. This pallet cover programme is being extended further to enable most Resene stock movements to be protected in this manner.

A skinned paint is a-ok to use, but you need to remove the skins prior to painting so you don't end up with imperfections on the surface or a blockage in spray equipment.

new product new product new product

Prep that surface

New **Resene Timber Surface Prep** is a low VOC pigmented high build waterborne surfacer for solid timber. It can be used to upgrade and fill surface defects in solid timber substrates before the application of waterborne finishing systems. Easy to use, this is an ideal product to keep on hand to get less than perfect timber substrates ready for painting.

Hot stuff

Don't forget that when the sun gets hot, cover up exposed skin and slap on some sunscreen. Your local **Resene ColorShop** has pots of handy suntan lotion to give away — just ask for your pot while stocks last. Resene also has a range of clothing from caps to t-shirts etc to keep you covered this summer. Check out the trade display at selected stores.

And once you've covered yourself, grab some **Resene Hot Weather Additive** for any waterborne products you are planning to apply. It will slow down the drying of the paint giving you a longer wet edge to get just the right finish.

And this year to keep your van cool, we've added a new item to the 'beat the heat' range - **Resene windscreen sunshades**. Simply place inside your windscreen when you're busy on the job site (or at the beach on the weekend) and stop the sun cooking your front seats and steering wheel. The new **Resene windscreen sunshades** are available for trade customers free from your **Resene ColorShop** while stocks last.

Keeping **cool**

And on the theme of keeping cool, we can't go past **Resene Cool Colours** as a good tool in the keeping cool and thinking sustainability tool kit.

Resene Cool Colour technology makes painting exterior surfaces in dark colours both easier and safer. It can be used on all sorts of exterior materials and applications, from weatherboards and concrete to windowsills.

A **Resene Cool Colour** looks the same as normal, but reflects much more heat – so it doesn't get as hot as a standard paint would. The pigment technology allows the coating to retain its usual visible shade, but gives heat back from the surface, reducing stress on the coating and substrate, and limiting subsequent heat related damage. The technology also minimises the buildup of unwanted heat in the building, keeping air conditioning and cooling costs down.

When looking at the role paint can play in temperature control in buildings it comes down to colour. The ability of white to reflect visible light extends through the infra-red and, because of this, white surfaces remain relatively cool to touch, even in direct sunlight.

The opposite is true of black and dark colours, which absorb light in this infra-red area, resulting in significant heat build-up in the surface. As the emissivity of paints is not particularly good, the surface heat is conducted into the substrate and then radiated into the building.

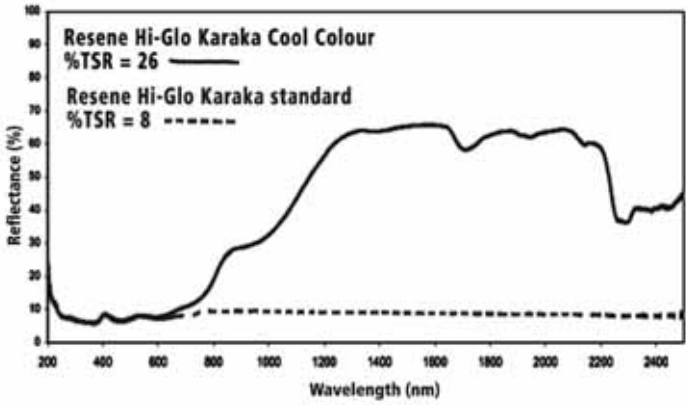
Sunlight energy is made up of 44% visible light, 5% ultra-violet light and 51% infra-red light.

Traditionally light reflectance values have been used to define what colours are suitable for heat prone substrates, however visible light reflectance values only measure a proportion of the light and ignore the effects of ultra-violet and infra-red light. Total Solar Reflectance (TSR) values take into account all three forms of light to give a better measure of the reflectance of the colour. A **Resene Cool Colour** uses pigments that reflect more of the sun's energy resulting in the same visible light reflectance value as the standard colour but a considerably higher Total Solar Reflectance value.

In terms of technology, the **Cool Colour** effect can also be seen in plants. Most plants have leaves of a very high chroma green. If those leaves reached the same temperature when exposed to solar radiation as those of a similarly coloured paint they would shrivel and die. The fact they don't is because that pigment - chlorophyll - absorbs what it needs from the visible range to photosynthesise but reflects the infra-red range, keeping the plant cool.

If you look at the very popular roofing colour Karaka and compare the standard colour to the **Resene Cool Colour** version over a five minute standard Resene test it reveals a 12°C drop in temperature. The 12°C difference can make a tremendous difference to the stresses exerted on the substrate and can have a telling effect on its stability and heat gain.

Reflectance spectral curves for Resene Karaka Cool Colour versus Resene Karaka



When it comes to roofs, having a darker shade in winter will not make much difference to how hot your client's roof – and home or building will get – as when it is cold they will be cold too, however in summer it will make a difference as to how hot your client's home or building will get by reflecting the heat away from the building. This can reduce stress on the substrate and reduce heat transference inside… which could mean quite simply that it doesn't feel as hot inside or the building occupants don't need to use cooling fans or air conditioning so much.

First developed for high gloss roof coatings, **Resene Cool Colours** are now available in a range of paints and stains. These include **Resene Lumbersider waterborne satin**, **Resene Sonyx 101 waterborne semi-gloss**, **Resene Hi-Glo waterborne gloss**, **Resene Enamacryl waterborne gloss enamel**, **Resene X-200 waterproofing membrane**, **Resene Lustacryl semi-gloss waterborne enamel**, **Resene AquaShield mineral effects** and **Resene Waterborne Woodsman wood stain**.

Resene Cool Colour technology works best in dark shades most prone to heat build-up, including popular colours such as **Resene Nero**, **Resene Karaka** and R**esene New Denim Blue**. A wide range of **Resene Cool Colours** are now available – check with your **Resene ColorShop** or representative to see if a **Resene Cool Colour** is right for your project.

Resene Cool Colours feature on a wide range of projects from Glengarrys to Fisherman's Wharf and the latest **Resene ColorShop** black and green makeovers also use the **Resene Cool Colour** black technology.

More news next month!
TwoCan, Editor.

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