ARCHITECTS MEMO
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LRVs reprised

Having covered the subject of paint reflectance values in previous memos – in what I considered my typically lucid, even pellucid, manner – I was somewhat surprised when the boss told me that there were still a couple of issues on the subject wherein some confusion still lay and which needed addressing. As usual, she was right so I'll try to cover the issues in a relatively short note.

The term Light Reflectance Value (LRV) should be self-explanatory – although there is a quirk which can be used to cause confusion. Physicists refer to all of the electromagnetic radiation from the sun as 'light' whereas we normal people consider light to be that band of radiation that is detectable by the human eye. It is this latter definition that we shall use.

LRV refers to the amount of light that a colour reflects and does not specify a colour in any other manner. A LRV of 50 can be a feature of an extremely wide range of colours, right across the spectrum, that share the common feature of reflecting 50% of the visible light falling upon them.

The picture changes, however, when one selects any one specific colour. As is known, there is often more than one route to match a specific colour. Indeed, if one gave 10 different colour matchers the job of matching a colour, one would get 10 different recipes. This would be especially obvious if the colour matchers are working with different tinting systems. However, no matter what the route or recipe or whether the colour is a CoolColour or not, the LRV of the colours produced would be exactly the same. A black made by a simple carbon black and one made by Monet by mixing all of the colours in his palette still have the same LRV.

Claims that specific colours can be produced at different LRVs are spurious nonsense.

The true LRV of a paint can only be determined when there is full coverage of the substrate by that paint. The paint industry typically uses black and white cards as a test substrate in order to assess this obliteration. If one measures the LRV of a colour over such a card, the value will be higher over the white areas for colours that need multicoats to achieve perfect hiding. As further coats of that paint are applied, the LRVs of the black and white squares approach one another until they become equal at perfect hiding. These readings then show the true LRV of the paint.

Now I realise that the above paragraph is pretty obvious and that I risk you wondering 'Why is he wasting our time with this stuff?' but it is a subtle lead in to the question – if the product is designed to be semi-transparent, how can its true LRV be measured?

The answer is that it can't; and I am specifically referring to timber stains here. A semi-transparent stain applied over pine and cedar will have a significantly different appearance and markedly differing LRVs. In these cases the LRV of the total system (that is, the actual stained timber) must be measured – and any suggestion that it can be determined by the stain alone is mischievous.

So the message is that LRVs tell one nothing about a colour apart from how much light it reflects at full coverage. It tells nothing about durability, opacity, colour space, infra-red reflectance or U.V. absorption. And, LRV cannot be separated from the nominated colour - one can't have the same colour with a 'better' or a 'worse' LRV. If you want to change the LRV then you have to change the colour selected!

You can view LRV for Resene colours on Resene colour charts or in the online Resene colour library, www.resene.com/colour.