



Resene Paints Limited

Architects Memo

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ANOTHER PAINT FAILURE!

We were recently asked to inspect a pair of semi detached houses which were due for repainting. The invitation to us was extended by a painter who had repainted the houses previously and was concerned that there were problems in the recoating that he couldn't handle.

The initial inspection of the structure tended to provoke the comment "another paint failure". Paint peeling on the tops and bottoms of the weatherboards, from edges of wooden joinery and from ends of weather boards. Ends of weather boards were also cracked about 2" back from any cut. One could think that this was a typical case where surface coatings were simply not proving adequate and were letting down the rest of the building. Two factors tended to refute this however. Firstly, the areas where the paint was not broken down were in excellent condition, maintaining good gloss and film integrity and secondly the tradesman involved was known to us to be one of the finest exponents of his craft, the fact that he called us in to discuss the latest repainting indicating his responsible attitude to his craft.

We then started to look for the reasons for the failure and several things became apparent which not only precluded the painter from doing a satisfactory job but precluded this dwelling ever having a satisfactory painting system applied to it.

The first point which showed itself was that this weather board construction had no soffit and the protection that the soffit provides against rain and UV light was totally lacking.

The next contributing factor to failure was that the wooden joinery used, had no facing timbers protecting the joint of the weather board to the joinery; the joint was open to the weather. The weather board used on the dwelling was of a shiplap profile with absolutely sharp edges top

and bottom of the board. The timber joinery equally had razor sharp profiles.

It is worth dwelling a little further on this aspect because it is a phenomenon of all liquids that, due to surface tension effects, they will pull away from sharp edges resulting in a decrease in thickness at those edges.

In paint systems this can result in sharp edges being only half as thick as the rest of the paint system. As sharp edges also tend to become drip points for water, they can easily be identified as weak spots in the system. The radiusing of sharp edges, even by as little as a 5 millimetre radius, can increase paint durability by a more significant amount than all the formulating principles known to the paint industry at present.

The final problem besetting this structure was that the builder had done no end priming of cuts made in the preprimed weather board. Moisture uptake via end grain is an order of magnitude greater than uptake through the faces and consequently priming of end grain is absolutely vital to maintain timber stability. In fact two coats of primer on the end grain would be preferable.

The consequence of the above meant that before the painter even came on to the job, his efforts were doomed to premature failure and the rectification of the problems were outside his scope. The problem in fact lay with the designer, the timber miller, the joiner and the builder. It is interesting to note that at this stage in the life of the building (about 10 years) it is only the painter who remains involved with the building. It has become the easy thing to do, to blame failures on paint and painters, whereas the truth of the matter is that for a successful paint job, all of the above mentioned disciplines have a vital part to play.

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