



Architectural aluminium powder coating is applied by spray ingelectrostatically charged polyester based powders onto a product. Coated aluminium is then heated to melt the powder which allows it to flow and chemically cross-link into a sustainable coating. As the product cools the coating sets and the finish is complete. The problem is, the finish may look good, but the coating can hide a multitude of problems. If contaminants are present, or a pretreatment process is lacking, a failure of the coating will become evident, writes Angus Mackie, Qualicoat chair

Powder coat failures fall into two broad categories: that of a complete failure of the coating where it simply peels off and something called ‘filigree corrosion’ where oxidation can form at a cut or punched hole in the aluminium and appears as spider-like strands of corrosion under the surface of the coating. Often this failure is seen several years after installation and clearly indicates poor pretreatment prior to powder coating.

Other problems with powder coating can include fading of colour, loss of gloss and ‘chalking’ of the surface finish. The first two are generally a normal ageing process and the powder coating should still adhere fully to the aluminium and continue to protect the aluminium. Often happening over 20 years or so, ageing of this nature can be reduced by specifying a more robust class of powder such as a Qualicoat class two which uses more robust compounds in its composition. Chalking is also part of the ageing process, again reduced by specifying class two powder and appears as a milky surface or ‘chalk’ on the coated surface. This only forms when the finish is generally neglected and not cleaned down within an agreed cleaning regime. Often chalking can be removed by simply cleaning the finish several times over a period of time. Qualicoat powder applicators can normally advise of a suitable cleaning company and there is also a paper on the Qualicoat UK & Ireland website that explains how to clean the finish.

How to avoid these failures?

Ensure that the powder coater has the necessary pretreatment systems in place and that they can demonstrate that they can coat and test to BS EN 12206. Alternatively, insist on a specification that coating must be applied by a Qualicoat licensed applicator. In the UK, the majority of main architectural powder coaters are Qualicoat licence holders. If you are proposing to specify an architectural coater who powder coats to BS EN 12206, be vigilant to ensure that they possess a robust pretreatment plant and that their processes are monitored and maintained.



Angus Mackie

Should a coating specification require a longer life expectancy, possibly where future access for cleaning can be difficult, then a class two more robust powder can be specified. The most important aspect to specification is the involvement of a specialist coater at the early design stages of any project. All Qualicoat UK & Ireland members are available to offer advice and can be found on the association website. □

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