

Paint Matters - Painting Exterior Concrete - A General Guide

Premature coatings failure can be incredibly costly and time-consuming to correct for any painting project, especially with exterior concrete walls. Due to the large-scale nature of many exterior concrete painting projects (like the exterior of a high-rise building for example), premature coatings failure practically ensures that the projects will not be completed on time or on budget.

The following list of best practices provides an excellent guideline for avoiding or minimizing the impact of premature coatings failure when tackling an exterior concrete painting project.



Concrete coating failure

Priming Exposed Metal

All metal surfaces, such as structural beam ends, as well as cut-back imbedded steel clamps, rods, ties, etc. must be suitably prepared and spot-primed with an anti-corrosive primer. This will help prevent rust stains forming on the finished coating.

The Importance of a Defect-Free Film

Having pinholes, holidays, and skips in the film of the applied coating is very similar to having holes in the bottom of a boat; so it is important to ensure a uniform, defect-free film when coating concrete.

Additionally, pinholes and holidays allow moisture to migrate behind the coating, which can lead to efflorescence (the white crystalline or powdery residue that forms on the surface of the concrete) and eventually delamination failure of the coating.

Monitoring Temperature

Concrete is exceedingly dense and will stay cold long after the air temperature has heated up. When a warm day dawns after a cold night, the ambient air temperature may be just fine for coating application, while the concrete substrate itself may have a temperature below 32°F (0°C). If coatings are applied in these conditions, condensation may develop on the underside of the coating that will interfere with proper adhesion, particularly when using latex coatings.

Surface temperature must be monitored during cold weather and the dew point must be calculated prior to coating application to assure that no condensation (dew) forms when warm moist air encounters a cold concrete surface.

The surface temperature must also be monitored during hot conditions, check the manufacturers maximum recommended surface temperature before and during coating. This is to prevent “outgassing,” which occurs when rising temperatures cause moisture vapor to be pulled through the slab and into the air above, causing pinholes, blisters, or bubbles in the coating film. Outgassing can be minimized by not applying coatings when the surface temperature is rapidly rising.

The Value of Mock-Ups

Mock-ups (or test-patches) are one of the most useful tools in the industry for keeping paint projects on time and on budget. Painting projects that utilize mock-ups are far more likely to stay on budget and on schedule, as correcting any issues that may lead to coatings failure with a test-patch is far less costly and time-consuming than corrections made after large-scale coatings application has commenced.

Mock-ups also help contractors determine the effectiveness of surface preparation (and the quality of sacking work done) as well as the best application method to achieve a defect-free film. Additionally, mock-ups provide the owner and specifier with a visual representation of what the final coating will look like. For best results, mock-ups should be placed on an inconspicuous area of the building and remain there until coating application has been completed.

Professional Tip

Moisture readings must be taken to assure that no more than 12% moisture is in the plaster at the time of the coatings application.