

SECTION 5

# REPAIR & PREPARE

**RESTORATION AND PROPER PREPARATION OF THE CONCRETE**  
are important things to consider before beginning a concrete coating project.

## **FAILING TO ASSESS AND ADDRESS THE SUBSTRATE'S CONDITION AND ENVIRONMENT CAN LEAD TO UNSIGHTLY ISSUES**

Below you can see examples of substrates showing visual evidence of problems that will need to be addressed.

### **ALKALI/EFFLORESCENCE (WHITE SPOTS)**

Can appear on exteriors and interiors; efflorescence is a fine, white powdery deposit of water-soluble salts left on the surface of masonry as the water evaporates or is drawn out; if salt, water and a path for salts to migrate through exist, efflorescence will occur. Eliminate one or more of these conditions and efflorescence will not occur.



### **MORTAR/CONTROL JOINT EROSION**

Can be caused by improper use of backer rod or lack thereof. Improper application of sealant and lack of maintenance can also cause water issues.



### **PEELING PAINT, BAGS, SAGS:**

Coating deformities often caused by painting wet walls or walls holding water (interiors or exteriors).



### **WATER RUNOFF/STAINING:**

This indicates that something is wrong with the water collection system or roof area; runoff occurs from the top of the building or water bypassing the gutter system.



## YOU CAN EXPECT THE FOLLOWING STEPS TO BE COMPLETED TO ENSURE A SUCCESSFUL COATING APPLICATION.

### 1 CONDITION SURVEY

It is important to know what you are working with. Condition surveys can be as simple as looking at the substrate or as invasive as a core sample analysis.

Here are some common problems that might be found:

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**CONDENSATION/MOLD/MILDEW:** Mold and mildew can form anywhere there's water and warmth; consult a mold remediation expert to address the issue.

**CRACKS:** Can have many causes including abuse, misuse, lack of hydration, hydrating too quickly due to wind, hot temperatures and excessive water in the concrete mix.

**CRAZING:** Another form of plastic shrinkage due to adding additional water to the surface during the finishing stage.

**DIRT RUNDOWN:** Caused by improperly cleaned surfaces. You may see rundown from the wall cap or general dirt and dust on the building; typically you'll see this on construction sites.

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**PINHOLES:** Holes in the coating caused by the concrete releasing air and water vapor when the temperature rises (outgassing) or when not properly painted.

**RUST SPOTS/RUNDOWN:** May appear through the paint film, around door headers and even roofs and gutters; caused by allowing water in the block; rust spots may also appear if metal slag or shavings are in the concrete mix.

**SHRINKAGE:** These cracks typically go through the slab. Caused by stress due to lack of control joints, high water content or poor compaction of the soil substrate.

**TRANSITION POINTS:** Transition points need to be finished to avoid water and corrosion rundown.

**WATER RUNOFF/STAINING:** This indicates that something is wrong with the water collection system or roof area; runoff occurs from the top of the building or water bypassing the gutter system.

**WATER SPOTS:** Dark areas on the surface or on coating film; look for areas where water is obviously collecting or moisture is migrating through the coating film.



Visual inspection



Drilling a core sample

## 2

### RESTORATION AND PREPARATION CONSIDERATIONS

A lot of thought goes into the who, what, when, where, how and why of coating application.

**These items will need to be addressed before work is started:**

- **SUBSTRATE CONDITION** — As determined in the condition survey
- **COATING REQUIREMENTS** — Ease of application, acceptable for service conditions (chemical and/or abrasion resistance), longevity, aesthetics (color/gloss availability), physical properties (dry time/recoat time)
- **APPLICATION CONDITIONS** — Environment (temperature/humidity), occupation of area, ventilation, power sources, structures (machinery, equipment)
- **OWNER REQUIREMENTS** — Noise, vibration, dust, water, turnaround time, life cycle

Ensuring all objectives are met requires a teamwork approach with reps, owners, engineers, architects, design professionals, contractors and materials suppliers.

## 3

### RESTORATION AND PREPARATION

The repair will include all the considerations above while restoring the integrity of the concrete.

**Methods include:**

#### REPAIR MORTARS

- Thin
- Overhead
- Deep Pour

#### INJECTION RESINS

- Epoxy/Mortar binder

Surface preparation is 90% of a good application. Prepping ensures proper bonding/adhesion of the repair or protection system.

**The three most common ways to prep concrete are:**

- Chemical cleaning
- Acid etching
- Abrading



### Terms Of The Trade

**ADHESION:** The state in which two surfaces are held together by interfacial forces

**ABRASION:** Wearing of materials by friction by a combined cutting, shearing and tearing action.

**BOND:** The adhesion and grip of a material to other surfaces against which it is placed.

## MYTH #5

**Chalky concrete cannot be coated.**

**FACT:** Chalking concrete should not be directly topcoated.

However, it can be prepared for topcoating through the use of concrete conditioner products.

These coatings penetrate deeply into masonry substrates to secure chalky surfaces and create a stable base for finish coats.