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# WEATHERPROOFING

Exterior walls are a critical component in achieving the required weather resistance of any building envelope. This guide outlines a number of considerations in the cleaning and weatherproofing of concrete masonry structures.

## GENERAL RECOMMENDATIONS:

A number of weatherproofing recommendations apply to all concrete masonry jobs, both painted and clear sealed.

### Details:

Many leakage problems in load bearing concrete masonry building arise from poorly designed and/or poorly implemented details. Any building detail exposed to weather should be thoroughly evaluated for its effectiveness in handling water, for its clarity, and for its constructibility. Of particular concern, are details associated with parapets, scuppers, through wall drains, and those involving any exterior horizontal surfaces (corbels, capping, sills, etc.) **The Architectural Sheet Metal Manual** by Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) is an excellent guide for common roof flashing, through wall drain and scupper details.

### Review substitutions carefully:

Selection of the cleaning and sealing products and procedures is a very significant design decision that has major performance implications for the wall system. Consequently, substitutions should be carefully evaluated prior to approval. Keep in mind cheap substitutes often don't work.

### Interior membranes:

Concrete masonry, like all concrete products, is an absorptive material. Consequently, when the exterior of a concrete masonry wall is exposed to extended periods of wet weather, the inside surface of exterior walls can become damp. Under rare circumstances it is critical to assure that a specific portion of a wall remain as dry as possible (e.g. where carpet contacts an exterior wall). For these applications the recommended product is Sure Klean Custom Masonry Sealer by PROSOCO.

## PAINTED MASONRY APPLICATIONS:

Elastomeric paints can dramatically improve the water repellency of concrete masonry walls. To achieve this result requires both the selection of appropriate products, and the proper application of those products. The industry recommended coatings for painted concrete masonry applications are...

### Block Filler:

For lightweight units (concrete density less than 105 pcf), use one coat cementitious or 100% undiluted acrylic latex block filler, as approved or recommended by coating manufacturer. For units of heavier density this filler coat is optional.

### Elastomeric Coating:

Use two coats, minimum 8-10 mils thick, polymerized acrylic elastomeric coating. The coating should have an elongations (as a percentage of thickness) from 200%-330% when tested per ASTM D2370 and a water vapor transmission of more than 0.04 perm inches when tested per ASTM E96, or as required to accommodate the exfiltration requirements of the structure.

## UNPAINTED EXTERIOR APPLICATIONS:

Unpainted concrete masonry presents two challenges that do not arise in painted applications. First, as unpainted walls do not have the advantage of a coat of paint to hide construction related staining, the must be clean. To further complicate this requirement, concrete masonry color is prone to fading and blotching when exposed to harsh cleaners. Second, clear sealed masonry walls must provide required weatherproofing without the benefit of heavy bodied water proof paint. Therefore exercise additional care in design and construction by observing the following recommendations...

### Specify block density >110 pcf:

Medium weight block is less prone to shrinkage than is light weight block. Less shrinkage leads to smaller crack widths and consequently improved water repellency.

### Specify Color Cure XD additive in block:

Color Cure XD, manufacturer by Master Builders, is an integral waterproofing that substantially reduced the absorptiveness of concrete masonry.

### Specify Color Cure XD additive in mortar:

The Color Cure system is designed to be used in all masonry components exposed to weather. This includes all mortar joints in exterior walls.

### Keep walls clean during construction:

Special provision should be provided to avoid mortar, grout, and mud stains during construction. To eliminate subsequent need for harsh cleaners, any stains that occur should be cleaned immediately, prior to set.

### Protect walls under construction from rain:

Water accumulation in partially constructed wall is a major cause of efflorescence staining. Walls should be protected from inclement weather as required to minimize this problem.

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## **UNPAINTED EXTERIOR APPLICATIONS:**

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### **Install parapet cap flashing immediately after completion of wall:**

Delayed installation of cap flashing is another common source of efflorescence staining. If flashing cannot be installed immediately after completion of wall construction, interim weather protection must be provided.

### **Provide extra care in the laying of units:**

Buttering the heads of both units, double striking all exterior joints, and striking (not flush cutting) all interior joints of exterior walls increases the density of the mortar joints, improves the bond of mortar to units, and consequently enhances the weather resistiveness of the wall assembly.

### **Cleaning:**

Clean wall, prior to sealing, using products and procedures contained in CONCRETE BLOCK CLEANING RECOMMENDATIONS.

### **Damp-Proofing:**

Damp proof walls per the CONCRETE BLOCK DAMP-PROOFING RECOMMENDATIONS.