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EFFLORESCENCE

Efflorescence is a white crystalline deposit, formed from a combination of soluble salts and mineral compounds. It often appears on the surface of new concrete, stucco and masonry surfaces causing paint films to discolor, burn and possibly lose adhesion to the surface. Three conditions must be met for efflorescence to occur:

1. There must be minerals or soluble salts present in the concrete masonry units, concrete headers and lintels, mortar joints or stucco.
2. Moisture must be present to dissolve the salts or minerals.
3. A force must be present to move the resulting solution to the surface (e.g. hydrostatic pressure).

Eliminating any of the above conditions will prevent efflorescence. If efflorescence is present, **it must be removed** prior to painting. The easiest method for removal of efflorescence is the "acid etch" method. Listed below are the five easy steps for total removal of efflorescence and proper preparation of a concrete or masonry surface for painting.

- Purchase one quart of muriatic acid (10 - 15% concentration) from a local home center, hardware store or paint store. Do not use higher percentages of muriatic acid as this could do damage to the concrete structure.
CAUTION: Always use proper safety equipment, such as a full face shield, eye goggles, rubber gloves, long sleeve shirts, hat, lanolin hand creams for exposed skin, etc., to insure your complete protection during the cleaning process. Consult and follow recommendations on the packaging of the material being used.
- In a plastic pail (do not use metal, as it could rust the pail), mix one part of the above acid to nine parts water. This is one (1) quart 10-15% muriatic acid to two and one quarter (2.25) gallons of clean tap water.
- Using a long handled, stiff bristled brush, **and proper safety equipment**, vigorously scrub the surfaces where the efflorescence is present. It is recommended that all areas be cleaned with the acid - water solution rather than "spot" cleaning, which could leave some developing efflorescence still on the surface.
- Allow the solution to remain on the surface for about five minutes and rinse the surface completely with clean tap water. Use of a professional power washer is recommended, however, careful washing with a garden hose usually will be effective enough to remove all the residual acid solution and the efflorescence.
- Repeat the etching and washing process when the masonry surface is completely dry and evidence of efflorescence is visible. If this second application does not remove all the efflorescence, you should seek professional help to completely remove the efflorescence before proceeding to the painting of your structure.



Following removal of all the efflorescence, select the proper coating system for your structure. Make sure the primer selected will not react with the alkaline surface of the concrete. Many "alkyd" type paints containing oil will react with the alkaline surface and cause loss of adhesion by the coating due to saponification. For best results use a 100% acrylic latex coating system to protect the concrete surface.

Finally, it is recommended that only the highest quality acrylic latex coating be used. This includes 100% acrylic latex house paints and 100% acrylic latex elastomeric (high film build) coatings. Selection of these quality coatings will provide an attractive finish and insure a longer service life for the coating system.

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