



CERAMIC TILE INSTITUTE OF AMERICA, INC.

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CTIOA Field Report 87-6-1

SUBJECT: LATEX LEACHING ON CERAMIC TILE VENEER

I. INTRODUCTION

- A. Leaching is a condition where liquids ooze out of the joints between ceramic tile veneer regardless of whether or not the veneer is grouted, and runs down over the tile.

- B. The reference to ceramic tile veneer pertains to all types of tile used for tiling the exterior walls of buildings including the brick-like tile.

- C. Sometimes this leaching is called efflorescence, but it is not. Efflorescence is a deposit of soluble salts, usually it is white in color. Efflorescence is formed when water penetrates, picks up the soluble salts, brings them to the surface where they are left when the water evaporates.

- D. Efflorescence is comparatively easy to remove, especially when additional water is prevented from penetrating the structure and the efflorescence dries and can be brushed away with a dry bristle brush. The liquid that leaches out of the joints is not easy to remove.

E. The stain is difficult to remove when it first occurs and the longer it is left on the tile the more difficult it is to remove. Even after the cleaning is done, there is a tendency for the run down marks to still show.

II. DISCUSSION

A. This leaching occurs on glazed tile just as readily as it does on unglazed tile, and it is just as difficult to remove from the glazed surface.

B. Most successful removal is done by cleaning companies using high pressure chemical cleaning equipment with capabilities of heating the cleaning water. It takes the force of the hot water and chemicals to hit the surface with the needed impact to remove the residue from the leaching and the stain.

C. Coatings on the tile used as grout releases may make the tile easier to clean but may also become a problem. Some of these coatings will turn white after exposure to the elements and then they are difficult to remove.

D. Rain is one of the biggest contributors to the leaching problem. The leaching from the rain is most damaging on partly constructed buildings where covers have not been installed on the top of the parapet walls.

E. A second source of water occurs when the tile veneer is bonded directly to concrete or masonry. When concrete and masonry mortars cure they must give off water, and this dispelled water must find its way to the surface. The water works its way through the grout joints and contributes to the leaching problem.

F. When either rain water, or the dispelled water, comes in contact with freshly placed latex bonding mortar, the latex can be activated and leach out of the installation. There are several

different types of latex that are used in bonding mortars. When latex bonding mortars are freshly placed all types of latex are water sensitive. Latex bonding mortars can be designed so that they do not leach out, but this ability of not leaching becomes a reality only after the latex has cured out. When the latex cures out it forms a film and once the film forms on latex designed not to leach it will not leach.

- G. If the latexes are subject to leaching from heavy rain, then the latexes would also be of concern in swimming pools, fountains and reflection pools. Being covered with water the latexes may not show stains from leaching but would lose their bond strength if not completely cured out.

III. CONCLUSION

- A. If exterior tile is installed using latex bonding mortar during rainy weather, leaching is very likely to occur. If the rain water is allowed to pour down into walls where the parapet is not capped, the leaching will be worse.
- B. Latex can be designed to prevent leaching but only after the latex is cured out by forming a film.
- C. All latexes are not designed to not leach.
- D. If leaching does occur, obtain the services of a cleaning company experienced in cleaning the leaching off of the tile.
- E. If latex mortar is used in swimming pools, fountains or reflection pools, be sure they are completely cured out prior to filling them with water.