

EFFLORESCENCE

CAUSES	PREVENTION	CORRECTION
Soluble salts from the Portland cement based setting or grouting material or sub surfaces,brought to the surface by capillary action where there is water or moisture present.	Efflorescence is inherent in interior and exterior tile installations and can only be minimised by following these recommendations.	Some efflorescence can be removed merely by using a stiff bristle brush, either dry or with clean water or use Morgan's <i>The Once Over</i> .
Contaminated water or sand containing soluble salts.	Maintain installations at or above minimum temperatures as recommended by manufacturer.	Caution must be used to avoid damage to grout joint. Thorough rinsing with clean water is necessary or use Morgan's <i>Grout Add</i> instead of water.
High sodium chloride content caused by some water softeners or concrete accelerators. Free lime.	Minimise moisture or passage of moisture through the setting beds or joints. Use the amount of water or additive recommended by the manufacturer or the mortar and grout.	In some cases, a deep penetrating grout sealer will reduce moisture penetration and thereby prevent wicking.
Porous grout from rapid mixing	The use of Morgan's <i>Grout Add</i> specifically designed for grout may reduce efflorescence or alternatively use Morgan's <i>Architectural Superior Grout</i> .	Some manufacturers sealers will, through repeated application and cleaning, force out the elements of efflorescence and eventually seal the mortar and grouts. Use Morgan's <i>Grout Seal</i> .
Omission of vapour barrier or damaged vapour barrier under slab.	Use kraft paper in lieu of polyethylene for curing.	
Excessive water in setting or grouting mix.	Compactly install a tight,dense grout joint. Tooling of grout joints is recommended.	In some cases, time will allow the soluble salts to dissipate.
Uncured slabs containing soluble salts.	Use a silicone or acrylic grout sealer after proper curing.	
Water penetrating a soluble salt contaminated joint, setting bed, or cementitious substrate and wicking to the surface.	Use hydrated lime when required Use factory prepared grouts.	Select area for testing. Clean and seal with recommended system
Improper cure under polyethylene		
In some rare cases, soluble salts are present in the tile itself.	Use adequate underbed drainage: and where moisture can enter from the back surface, use a moisture barrier. Before grouting,verify that excess moisture has left the slab and setting bed.	
Excessive mineral content in the water used for maintenance.		
Grouting below recommended minimum temperature.		
Excessive water and soaking during clean up.		
Exterior brick,block,stucco, mortar, or any other Portland cement based products can effloresce and could be source of problem.		<i>These suggested corrections and/or a combination of suggested corrections may provide improved conditions and a serviceable product. There is a correlation between the Causes and Prevention columns.</i>