

Efflorescence

What is efflorescence? It is a white-colored powder-like deposit which sometimes appears on concrete or clay products. The deposit is the residue of a soluble salt carried to the face of the product by moisture and left on the surface as a dry powder following evaporation of the moisture. The phenomenon was reported as early as the 1870's. Efflorescence of itself in no way affects structural integrity.

Where do the salts come from? The salts are found in either the native soil, the gravel base or in the sand, stone or cement used to manufacture the paving stones.

How does it happen? These salts dissolve in either the ground water, rain water or water added to the mix the concrete. The salt moves upward with the moisture to the drying surface by capillary action. In basement walls, this capillary action has been measured to be as much as 600mm. Because the sun evaporates the moisture at the surface, this capillary wicking action continues to draw moisture from below. The efflorescence continues until either the salt or moisture supply has been exhausted.

How is it removed? Efflorescence will wash and wear off over the course of time. The recommended procedure is to allow this natural process to take place.

However, if you would like to speed up the process, it can be removed by washing the pavers in a mild cleaning solution. (A cleaning solution can be purchased from Landscapers Depot, but be sure to follow all instructions since the cleaners have the potential to be harmful.)

A small unobtrusive area should be treated first to ensure results are acceptable. The cleaning solution may expose aggregate on the paver's surface leading to a lessening of the color mass.

No responsibility can be assumed by the paving stone manufacturers for the efflorescence. Any normal concrete contains calcium hydroxide which is inevitable when cement and/or lime and water are mixed together. Calcium hydroxide combines with carbon dioxide in the air to form calcium carbonate which then appears as the white-colored deposit; efflorescence.