



Technical Bulletin – Vanadium Staining

Vanadium stains are evident by a yellow- green discoloration on the face of a brick resulting from vanadium salts which are naturally present in most clays used to produce light colored bricks. Such as our Diamond White from our CCP Plant.

Vanadium stains are a result of water-soluble vanadium salts. These salts are put into solution by excess water migrating through the bricks and brought to the surface as they dry out. During this drying out process the water evaporates leaving vanadium salts on the brick surface. The vanadium salt turns green when it crystallizes in an acidic environment, such as after acid cleaning or exposure to rainwater which is naturally acidic. Vanadium stains occur in a manner very similar to efflorescence,

Vanadium salts are neither permanent or harmful and they do not indicate any defects in the bricks. Such stains in exposed areas generally wash off in time, but their removal can be hastened by chemical treatment.

To prevent this staining, it is recommended to protect wall cavities during construction and keep brick cubes dry. There are also proprietary chemical cleaners that help minimize vanadium staining from occurring. Never use or permit the use of highly-concentrated, unbuffered hydrochloric (muriatic) acid solutions to clean light-colored brick

Once Vanadium staining has occurred there are proprietary cleaners such as *One Restore* by Eaco Chem which will readily and easily remove the stain. This stain removal process does not require an overall re-cleaning but can be done on a spot cleaning basis. After removing the stains they typically will not reoccur as long as there is not any excessive water migration into the wall.

