



Zirconia Inc. manufactures a new type of inorganic concrete coating that chemically bonds to the surface of concrete forming an ultra-durable ceramic barrier layer that preserves the concrete surface from salt and environmental attack. We call this coating **CeramycGuard™**, which is a new type of ceramic polymer coating technology, called a **Ceramic Surface Treatment (CST)**.



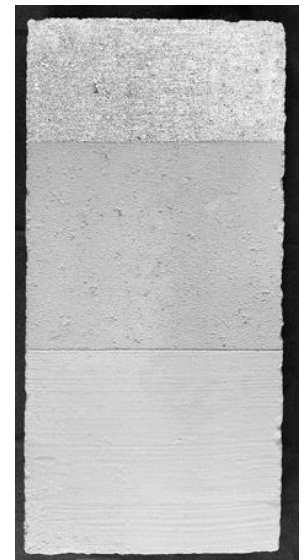
Roman Cement Reborn: Ceramic Surface Treatments are based on old Roman Cement technology (alumina-silicate cements), combined with modern micro- and nano-scaled ceramic elements which polymerize, creating an ultradurable anti-corrosion barrier layer. This coating technology is basically man-made stone, an analogue of granite. This “skin of granite” is virtually immune to the environment.

CST coatings chemically bond to all the elements in the concrete (e.g., calcium, silicate), fills pores, cracks, and other irregular areas, infilling even microscopic voids. It’s an inert, ceramic polymer that is thermally compatible with any concrete surface, and is immune to heat, cold, humidity, water, and salt. It has an oxidative/photocatalytic (antimicrobial) surface that is resistant to biological growth. It is not affected by wet/dry or freeze/thaw cycles, and will not peel, flake, chalk, or delaminate in any manner. It forms a composite with the concrete surface, and is permanent.

This CST coating, CeramycGuard, mixes from three parts, (1) a silica-based liquefier, (2) a silica-based densifier, and (3) a bag of ceramic powder, as you can see in the image above. This "green" coating technology is water-borne, and non-toxic. CeramycGuard mixes and applies like paint, with brush and roller.

With regard to operations and maintenance over extended periods of time, this technology has an important key advantage. The CeramycGuard technology bonds into itself, so repairs and renovations of this composite surface are easy to complete at low cost. This means maintenance cycles can be completed with a simple recoat at low cost, indefinitely.

This technology significantly extends the life of concrete in the environment by shielding it from salt corrosion, carbonation, weathering, and biological growth. This technology can restore and protect existing concrete, or preserve new concrete. The image, right, shows one layer (center) and two layers (bottom) of CeramycGuard over a cement brick.



Zirconia's CST coating technology, and other ceramic-based technologies, can renovate and repair existing concrete to a like-new condition, and preserve new infrastructure from salt corrosion indefinitely. This ultra-durable coating technology offers a path toward long-term sustainable, lower cost, concrete infrastructure. Also, in line with government environmental goals, this technology reduces greenhouse gas emissions by preserving concrete infrastructure.

Please let us know what information you might like from us. We look forward to supporting your project.

Kind regards,

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