

# CorrectionalNEWS

design+construction+operations

Published on *Correctional News* (<http://www.correctionalnews.com>)

[Home](#) > Seamless Showers Fight Corrosion

## Seamless Showers Fight Corrosion

### Seamless Showers Fight Corrosion

(12/09/2005)

By Christopher O'Brien

Ask any prison maintenance supervisor if he has problems with the showers in his facility and you will get a quick unequivocal, 'Yes.' Almost no other maintenance area in the prison is tougher to manage. To perform any type of maintenance on a shower means shutting it down, which often requires moving inmates around and creating additional headaches for the prison staff.

Showers are constantly wet and the traditional tile used contains a potential breeding ground for mold, mildew and an array of fungi, bacteria and actinomycetes in the grout joints that complete the tile matrix. If this isn't bad enough, the tile matrix often leaks, creating deterioration in the structure, including rebar corrosion, concrete decay, etc. As entropy does its job, the inmates are provided with readily available building material for homemade weapons when the tile can no longer resist the pressure of a prying inmate's hand.

The state of Illinois has been testing a seamless shower system for the past seven years with great success. In fact, this seamless system has replaced traditional tile in the states master specification and has been installed in over 20 facilities in Illinois.

The seamless system consists of multiple products all built around 100-percent solids epoxy resin. The components must be installed within a 24-hour recoat window in order to achieve a chemical linkage. Typically, after 24 hours, the linkage is no longer available and only a mechanical bond can be achieved. The product components include a waterproof membrane, wall and ceiling materials and cove and flooring resins. The importance of achieving a chemical bond is to protect critical joints such as the wall and floor interface where most problems start.

While the 100-percent solids epoxy is the foundation for the seamless system, each of the products has unique additives that perform specific functions in the seamless system design. The membrane material provides waterproofing and crack bridging functions. The wall and ceiling material is fortified with both milled and chopped fiberglass to lend dynamic lateral support and increased tensile strength to the system. The cove/flooring material is quartz filled to provide long wear and anti-skid properties.

Some other benefits of the seamless system include:

- antimicrobial additives that provide protection against bacteria such as *Staphylococcus epidermidis* and *Staphylococcus aureus*
- 100% solids, zero VOC formulations that make these materials candidates for LEED certification
- short return to service cycles due to fast-setting repair kits
- no noxious odors, making installation or repairs possible while the cell house is fully populated
- color throughout the system so that engraving graffiti is not rewarded
- low cost of maintenance

The system is best installed over the original substrate. If paint is on the CMU it should be removed. If tile exists it should be removed along with the tile mastic. Special soft-media blasting materials can be used to suppress and limit dust while creating a sufficient anchor pattern for proper bonding. After the surface has been prepared the wall and ceiling substrate is patched and primed with an epoxy primer. When this material is tacky, the fiberglass-reinforced material is sprayed onto the wall and ceiling and out onto the floor about one inch.

The following day, the fiber reinforced material is sanded to remove sharp fiberglass protrusions. After sanding, all dust is removed using a tack rag or vacuum and the finish or glaze coat is applied. The following day the membrane material is installed onto the floor and up and over the fiberglass reinforced wall system (typically four inches). The cove material is then installed followed by a three step 1/8-inch flooring installation.

Since most states are in a fiscal straightjacket the pressure will be on each facility to find cost effective, low maintenance solutions to their ongoing shower nightmare. The seamless system has proven to be an effective solution in Illinois and may well be the solution for the prison industry in general.

*Christopher O'Brien is president of Prime Coat Coating Systems. His e-mail address is [cobrien@primecoat.com](mailto:cobrien@primecoat.com) [1].*

Maintenance News

**Source URL:** <http://www.correctionalnews.com/articles/2005/12/8/seamless-showers-fight-corrosion>

**Links:**

[1] <mailto:cobrien@primecoat.com>