

Vanberg Specialized Coatings manufactures products and systems that are designed to withstand the harsh corrosive chemicals and wear in pork production facilities. The systems and techniques have been developed and well proven since the early 1990's.

Refer to detailed application guidelines for proper concrete preparation, product and system recommendations and consult with your VSC Technical Representative to be sure installations are right for the application.

Concrete Slats, Feeder Pads and Floors around Wet/Dry Feeders

Severe Wear

The area around wet/dry feeder is a very corrosive zone due the constantly wet surface. Hydrogen Sulfide gas from digesting manure is highly absorptive in water and urine solutions. The combination forms many corrosive acids and sulfates, the worst being sulfuric acid. Barns with poor ventilation exacerbate the condition creating rapid deterioration of concrete surfaces.

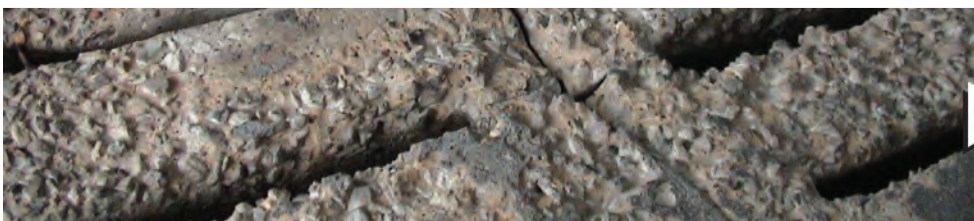


Basically there are two solutions to making repairs to severely worn zones:

- 1** Grout and level the edges and deep wear zones using CON-KORITE. It's unique 'pure cement' technology provides very good resistance to acids and sulfates and will far outlast common Portland based formulas. Adding KB25 ACRYLIC RESIN further enhances the resistance to the chemicals. Depending upon the degree of corrosive compounds and the environment, CON-KORITE has been seen to last from 2-3 years in highly corrosive buildings to over 10 in mildly corrosive environments. CON-KORITE can be provided with a top overlay of the ARMOR-ROCK epoxy slurry and broadcast system to stop acid and sulfate attack. This can be done immediately or years later when CON-KORITE starts to show signs of wear from corrosive compounds.



- 2** Grout and level the edges and deep wear zones using ARMOR-STONE epoxy mortar. This one step process eliminates the need for a top coat and has been seen to last nearly 10 years now without visual wear.



Concrete Repair and Protection Guide for Existing Pork Facilities

Concrete Slats, Feeder Pads and Floors around Wet/Dry Feeders *Cont.*

Moderate Wear

The best solution in this environment is to overlay zones attacked by acids and sulfates with ARMOR-ROCK epoxy slurry and broadcast system. ARMOR-ROCK provides chemical protection as well as providing a uniform non-slip long wearing surface that we've seen lasting 10 plus years with some maintenance. If there are some edges worn away or broken away, repair and level with CON-KORITE prior to applying ARMOR-ROCK.



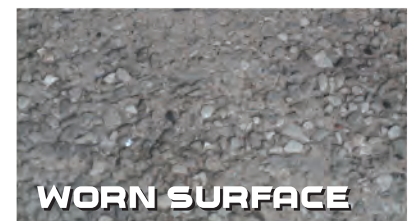
Concrete Surfaces in areas not exposed to severe acids and sulfates: Breeding and Gestation Barn Floors and Slats, Dry Feeding Surface Areas and Walkways

Moderate to Severe Wear

CON-KORITE has been well proven since 1995 to withstand the wear and corrosive elements in these areas almost indefinitely. Some maintenance, such as periodic sealing with a VSC penetrating sealer (VSC CONCRETE SEAL), will be helpful in extending useful life of the overlay and adjacent concrete in tougher environments. CON-KORITE can be applied as smooth (feeding zones) or broom finish (traffic zones) for non-slip.

If there are deep holes in the substrate, fill these with a 1 to 1 mix of CON-KORITE and pea gravel or medium sized gravel or rock (¼ inch/64 cm to ½ inch/1.27 cm) to assure a sound repair before applying overlay.

For high wearing surfaces, such as farrowing crate floors made of concrete, ARMOR-STONE EPOXY MORTAR will further extend the useful life of the surface. If there are deep holes, use CON-KORITE as noted above to fill and level prior to applying the ARMOR-STONE.



Concrete Feed and Water Troughs

CON-KORITE is applied any damage and provide a smooth feeding surface. It may be extended, like above, to repair deep holes. Avoid using Portland cement mix as it will cure slowly delaying the repair. It will not tolerate standing or running water and will shrink when curing. A gravel or sand base will also shrink away, making for an unsound underlayment and will, more than likely, result in certain failure by the overlay breaking through from Sow foot and feeding pressure.

Concrete Repair and Protection Guide for Existing Pork Facilities

Concrete Feed and Water Troughs *Cont.*



Producers seeking the longest wear protection can look at re-surfacing their feeding troughs with **ARMOR-STONE**

Slats - Completely Broken Out

As long as the rebar is present and there is sound slat on either side of the breakout, a simple form can be constructed using strap steel. Then CON-KORITE mixed with straight KB25 ACRYLIC RESIN (or a blend with water) can be mixed and placed in the breakout zone. The form is left in place for permanent repair. It is highly recommended that the strap steel be treated with VSC RUST CONVERTER if rust is present and coated with EM-15 EPOXY MASTIC to protect the steel from corrosion.



Cracks in Floors, Slats, Walls, Slurry Pits and Water Tanks

Horizontal Cracks

Cracks in slats and floors can be repaired and leveled using the ARMOR-ROCK THX (Consists of VSC Epoxy and Thixo Additive). Once the crack has been cleaned, etched and excess debris and water blown or sucked out, the ARMOR-ROCK THX system is mixed and poured into the crack to excess. The surface liquids are rolled out and VSC MEDIUM SAND broadcast into the wet epoxy to saturation to create a thickened non-slip surface.



This system seals the crack preventing liquids and air from penetrating in causing corrosion of the rebar and continued cracking. We have not seen this system fail to date. Note: if cracks go completely through the slat or substrate allowing the liquids to flow away, a thickened (pasty) ARMOR-ROCK mix is made and pressed into the top part of the crack using a margin trowel or spatula.

Concrete Repair and Protection Guide for Existing Pork Facilities

Cracks in Floors, Slats, Walls, Slurry Pits and Water Tanks *Cont.*

Vertical Cracks

It has been our experience that cracks in tanks and slurry pit walls and along cold joints that are separating movement is taking place during weather extremes. The product that has been consistently successful to repair these zones is EPOXY JOINT FILL VERTICAL. This pasty, flexible epoxy is mixed and pressed into the cleaned out crack or cold joint. It is recommended that the epoxy be spread to cover 1 to 2 inches of surface on either side of the crack or joint to tie the repair together.



Basic Guidelines for (Liquid) Concrete Preparation

- 1 Clean and remove soils, oil and grease from surface using DEEP KLEEN (1:4 mix ratio with water) Cleans up to 400-sq. ft./gal. **Rinse thoroughly.**
- 2 Acid-etch and remove mineral deposits with VP-151 CONCRETE CONDITIONER AND ETCH (1:2 mix ratio with water). This mix will clean and etch about 150 sq. ft. VP-151 contains cleaners, de-mineral compounds, and etchers.

OR (if VP-151 is unavailable)

Acid-etch using muriatic acid (1:2 mix ratio with water). This mix will etch about 150 sq.ft. Neutralize the surface treated with a mild rinse solution of DEEP KLEEN (1 fl. Oz. to 1 gallon of water).



Note: Muriatic acid does not work well on grease, oil or animal fats. Surface contaminants that cannot be removed by chemicals must be mechanically removed.

- 3 Rinse **very** thoroughly with fresh water.
- 4 Then blow away and/or vacuum up excess water for faster drying. After vacuuming a torch (weed burner) can be used for rapid drying the floor.



Important: Final surface must be clean, etched (abraded) and sound (free of dust and/or loose contaminated material). A visual profile should be present.

