Case Study: Exterior Application of Madewell's Crack-Bridging Laminate System in Albany, IN

Contractor: Culy Contracting, Inc.
Location: Albany, Indiana
Structure: 6,000 square foot concrete brine tank
Year: 2005, 2013

In 2005, a concrete brine tank in the city of Albany, Indiana was very badly deteriorated and in desperate need of repair. Culy Contracting had recently performed manhole rehabilitation work for the city and agreed to restore the brine tank as well. The crew began interior restoration by using a vacuum truck to remove all media and other debris from the bottom of the tank. Then, surface preparation was performed with a pressure washer, and the leftover debris was again vacuumed out of the tank. The concrete substrate was dampened with water to provide a saturated surface needed for the application of Mainstay ML-72 Sprayable Microsilica Restoration Mortar. The mortar was applied to the walls using shotcrete equipment at 3/4" and finished using a sponge to achieve a surface profile suitable for the application of a protective coating. Mainstay DS-5 100% Solids Epoxy Coating was then sprayed over the uncured mortar at 80 mils. This process was repeated on the exterior of the tank.

Over the years, the exterior of the brine tank underwent numerous freeze/thaw cycles. This resulted in more cracking on the outside of the tank, and in 2013, Culy Contracting was brought in to resolve the issue. The crew began by using a grinder to roughen the surface and remove any loose material. After surface preparation, a thick coat of Madewell 1312P Epoxy Putty was applied to bridge the existing cracks and smooth the substrate. One layer each of fiberglass mat and cloth were laid over the wet Madewell 1312P using rollers to remove any air voids between the epoxy and fiberglass layers. The fiberglass was then saturated with Madewell 1312E Epoxy Saturant (Resin) using a paint roller. The lining was left to cure overnight.

The next morning, any loose fiberglass strands were removed using a grinder. Denatured alcohol was used to wipe away contaminants that may have formed on the surface overnight. Then, Mainstay DS-5 Epoxy Coating was applied at 60 mils to cover the fiberglass.

The tank was reinspected in June of 2019. The utilities department head said the lining was holding up well and reported no further issues.