Minimizing Out-of-Service Time During Tank Painting

Whether you have only one tank or are a multi-tank system, having a tank off line can cause problems.

Tank painting projects can cost many thousands of dollars, but often the most costly aspect of tank rehabilitation is having your tank out of service. What can be done to get your tank back in service sooner? One approach is to control the environment and minimize delays due to poor weather. Another is to use coatings that tolerate a wide range of climatic conditions and cure quickly at ambient temperature. By combining these methods, down-time can be greatly reduced.

Environmental Control

Controlling the environment generally refers to an interior coating application but also can be accomplished for exterior surfaces by using a containment system. In either case, controlling humidity (dew point) is the most critical factor. Heating or cooling also can be used along with ventilation during the blasting and coating operations. Where dehumidification, heating, cooling and/or dust collection are being used, ventilation is the basic component of total air treatment.

Ventilation. The primary purposes of ventilation during blasting and painting operations in enclosed areas are for worker health, safety and visibility. Proper ventilation also is required to reduce airborne contamination of the freshly blasted surfaces and to reduce and remove solvents during coating operations. Ventilation is measured in terms of the volume of air movement over time, expressed as cubic feet per minute (cfm). A general guideline is to provide one complete air change every three minutes during blasting.

Dehumidification. Determining the dehumidification (DH) requirements involves knowing the type of coatings that will be used. Moisture-cured coatings such as inorganic zincs, moisture-cure urethanes and some epoxies will require moisture to cure. This must be taken into consideration when sizing the DH unit for a particular job.

Heating/cooling. One last item to consider is additional heating requirements. On warm days with cool nights, the change in the surface temperature may cause moisture to form unless you have a very low dew point. To help overcome this problem, providing additional heat will help maintain the surface temperature and dew point spread and also decrease the relative humidity. Heat also may be needed to maximize proper cure of catalyzed coatings. In very warm conditions, cooling may be used in addition to dehumidification to maintain worker comfort.

Coating Selection

Coating selection is critical when trying to minimize out-of-service time whether dehumidification is used or not. For tank interiors, there are several options.

Epoxy, the most widely used coating for the interiors of water tanks, can be accelerated for faster recoating and cure. New high-solids, rapid-cure formulas also are available for quick turnarounds.

Two-component, quick-setting, 100 percent solids polyurethanes also have been used successfully. At 70° F, initial set is in just three minutes and ultimate cure is only 48 hours.

Exterior systems, typically epoxies with polyurethane topcoat, also are available in accelerated and quick-cure formulas. They provide faster recoating and quicker moisture resistance. Another type of exterior system is a **moisture-cured polyurethane.** These coatings can be applied at up to 100 percent humidity without compromising their appearance or performance.

Whether your concern is maintaining adequate water pressure for your water customers' needs, the additional costs for temporary piping and pumps, or even mandated limitations on out-of-service time, there are coating systems and engineered systems that can make it possible for you to properly maintain your water tank *and* minimize out-of-service time.

Information provided by
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