



Case History: Upper Stillwater Dam Project

The United States Bureau of Reclamation was having trouble with cracking and spalling concrete on the Upper Stillwater Dam in Duchesne, Utah. Because no control joints were in the original design, movement and freeze-thaw conditions were causing the deterioration of the concrete. They were looking for recommendations on a product that could repair the cracks, holes, and spalled areas prior to the application of an elastomeric membrane to prevent further deterioration. Normally a concrete type patch material would be used but conditions at the dam would make it difficult to apply effectively. The work had to be done in cooler temperatures (while the water was low), there was constant moisture especially around the waterline and different areas required different thickness of the repair patch. The system also needed to cure quickly because the work had to be done before the water levels started to rise.

Milamar Coatings rep **Lance Renshaw** of **Protection Engineering** thought ICO-Gel would be ideal for this project. ICO-Gel is a three part, 100% solids epoxy patching material designed specifically for vertical applications. ICO-Gel's low temperature application ability, adhesion to damp concrete, quick recoat time, and ability to be applied in various thicknesses from feather edge up to 4" in one pass made it the perfect choice for this diverse application.

The project was being done by **Purcell Painting and Coatings** out of Tukwila, WA. The concrete surface was first sand blasted to a clean surface; the profile of the concrete was already rough enough for a coating repair system. The ICO-Gel was applied by hand trowels directly to the concrete. Because of its versatility it was used to fill small cracks 1/8" and less, to repair spalled areas of concrete sometimes over 4" deep, smooth out rough and abrupt areas of concrete at the joining lifts, and used to fill large cracks prior to the application of a flexible sealant.

The Bureau of Reclamation has been very pleased with the performance of the ICO-Gel so far. Purcell Painting and Coatings was very impressed with how easy to use ICO-Gel was. They have been especially pleased with its adhesion to damp and in some cases wet surfaces and have recommended its use for other concrete repair jobs.

