

# CITY OF BILLINGS WATER TREATMENT PLANT

Expectations were high when waterworks engineers began their search for protective coatings for eight freshwater filter basins for the City of Billings Water Treatment Plant expansion project. "They wanted a bulletproof system with zero leakage and very good life cycle costs," according to Tnemec coating consultant Mike Cox. "We needed coatings whose applications were not limited by low substrate temperatures."

After reviewing some optional coating systems, Cox specified a system including Series 218 MortarClad, an epoxy modified cementitious resurfacer; Series 1 Omnithane, a moisture-cured MIO-zinc urethane primer; and Series 400 Elasto-Shield, a polyurea elastomer finish coat.

Phase I of the project involved coating four new filter basins constructed of poured-in-place concrete. "The contractor began with an abrasive brush blast of the new concrete. We then addressed the bug holes and voids with the resurfacer, which was applied with masonry floats and trowels," Cox recalled. "Then the polyurethane primer was rolled on and the finish coat was spray-applied with heated plural component equipment."

The project's second phase involves refurbishment of the four old filter basins. The same coating system was specified and is scheduled to begin during late fall 2006 and early winter 2007 when temperatures are normally near freezing. "These older basins were in need of extensive surface prep," Cox noted. "They had a lot of wear on them and existing coatings that were in the process of failing. All of that had to be removed before using the filler material to resurface the concrete," Cox acknowledged. One additional challenge of this project was that the older filter basins were still in service during construction of the expansion, and leakage from the older filter basins was apparent during work on Phase I. "One long wall was shared between the old and new basins," Cox explained. "And because the coatings on the old basins were failing, we had one area with leakage that we had to work around. That's why the plant's engineers wanted to make sure the new coatings would perform." "In the end, the owner, engineer and contractors were very impressed with the performance of our system," Cox added.

## FEATURED PRODUCTS

**Series 218 MortarClad**

**Series 1 Omnithane**

**Series 400 Elasto-Shield**



## PROJECT INFORMATION

### Project Location

Billings, Montana

### Project Completion Date

June 2008

### Owner

City of Billings

### Architect / Engineer

HDR

Missoula, Montana

### Fabricator / Applicator

Quality Maintenance Contractors

Muskegon, Michigan

Above: For the new filter basins constructed of poured-in-place concrete at the City of Billings Water Treatment Plant, the polyurea elastomer finish coat was spray-applied using plural component equipment.

