

Bonneville Dam

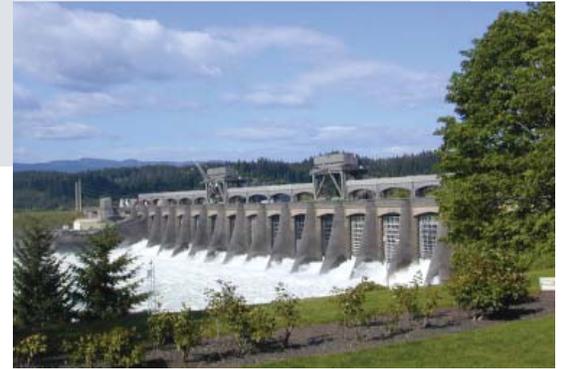
US SPEC PRODUCTS

US SPEC Products: HE Grout, CS-25-1315

Contractor: Inducco Industrial Construction Company

Location: Oregon

Bonneville Dam, located 40 miles east of Portland, Oregon spans the Columbia River gorge and links the two states. It consists of a dam, two powerhouses, a single navigation lock and recreation visitor facility. Since 1938, Bonneville Dam has supplied the region with inexpensive electrical power, producing approximately five billion kWh annually. In addition, Bonneville Dam provides fish and wildlife protection as well as recreation and navigation.



In February, 2009 several upgrades and modifications of the dam were required. This included the replacement of the dam's first powerhouse tailrace gantry crane rails and upgrades to the deck hatches. The tailrace deck area is serviced by a single gantry crane rated at 30 tons capacity.

The gantry crane follows a double rail that extends the length of the deck. The rails and support structure were in poor condition, and a complete rail replacement was determined to be the most effective solution. The tailrace deck also serves as a main roadway with deck hatches covering access holes. These deck hatches were original to the powerhouse, and, being designed in the 1930s, did not meet modern roadway load criteria.

A non-shrink, structural material was needed to provide complete bearing surface encapsulation and load capacity under the crane rails. This would ensure optimal load transfer. The contractor also needed a material with a rapid setting time due to winter temperatures.



US SPEC HE Grout was selected as the material that would provide the physical and performance properties necessary for the replacement of these crane rails. At a flowable consistency, HE Grout achieved a minimum of 5,000 psi in 24 hours. Due to winter temperatures, cold-weather concrete practices were utilized to protect the grout application during the early and most critical stages of hydration and compressive strength development. In addition, US SPEC provided an on-site representative to offer support on the project.

US SPEC HE Grout

A blend of specialty cements, admixtures and proprietary aggregates designed to provide high flexural and compressive strength performance from damp pack to fluid consistencies. HE Grout is non-metallic, non-shrink, non gas forming and contains no chlorides or aluminum powders.

Uses:

- Precision Grouting: Machinery bases, compressors, punch presses, generators
- Structural Grouting: Steel columns, precast columns, crane rails, beams
- Anchoring: Guard rails, sign posts, dowels, rods, bolts
- Pumping Applications: Excellent flowability

Benefits:

- Versatile: Plastic or flowable
- Cost effective: Extendable to 50%
- Strength: Attains high compressive strengths at specified water ratios
- Sets quickly, even in temperatures as low as 35°F
- Security: Maximum uniform bearing support