



High Pour Rate for Tall Walls

Portland, Oregon

2 Minute Read Time

CONSTRUCTION OF CONCRETE RESERVOIR

The Rockwood Water People's Utility District (PUD) provides drinking water for about 66,000 people in Portland, Gresham, and Fairview, Oregon. The PUD began the construction of its latest upgrade in September of 2021, which includes a new six-million-gallon (mg) (22.7-million-liter) prestressed concrete reservoir named Cascade Number 2.

PRESTRESSED CIRCULAR CONCRETE TANKS

Prestressed concrete tanks are circular tanks designed to provide long-term service and negligible maintenance costs. This type of tank construction is highly specialized and requires special certifications, so the general contractor chose **Ward-Henshaw Construction Company, Inc.** of Canby, Oregon.

PREMIER TANK BUILDERS

With decades of experience specializing in water treatment and storage facilities Ward-Henshaw Construction Company, Inc. is one of the premier tank builders in the Pacific Northwest. Their relationship with EFCO goes back several years. When it was time to start the project, they contacted the EFCO Seattle team.

BATTERED WALL TANK

Tanks come in all different diameters and heights; this one, however, was designed with 65'-4" (19.9 m) outside radius and 66' (20.1 m) tall, battered walls, much taller than the average tank. The tank's vertical construction joints were broken into 21 total pours. The design also included twenty-four 36" (915 mm) diameter x 65' (19.8 m) tall **Round Columns**®.

PLANNING THE PROJECT

When planning a project, the contractor has a list of items to consider, including the crane size. Factors such as size, capacity, cost, availability, and site logistics come into play when choosing your crane. Due to the overall weight of the crane and the formwork system ▶

EFCO's solution of using E-BEAMS & SUPER STUDS and contractor-provided plywood allowed a high 1,400 lb/ft² (67 kPa) pour rate.



system on the tank slab, Ward Henshaw's preferred method for forming the tank walls is the EFCO **E-BEAM® & SUPER STUD®** form system in combination with contractor-provided plywood and radius cut 2x sleepers.

VERSATILE FORMWORK SYSTEM TO MEET PROJECT REQUIREMENTS

EFCO's engineers constructed a formwork system tailored to the specific needs of the project, including a 19'-5" x 66' (5.9 m x 20.1 m) pour size and a high 1,400 lb/ft² (67 kPa) pour rate. To achieve this, they utilized their E-BEAM & SUPER STUD technology while implementing vertical pouring windows at 6' (1.8 m) centers with shorter E-BEAMS as detachable panels.

WHY CHOOSE ANYONE ELSE?

Ward-Henshaw Construction Company, Inc. achieved a remarkable accomplishment in engineering and building the Cascade Reservoir 2. The complexity of the prestressed concrete tank design, the size, and the need for vertical pouring windows made it a tricky job that had to be done with special tools and techniques. The EFCO E-BEAM & SUPER STUD form system made it possible for the tank walls to be constructed quickly. Easy stripping and cycling allowed for two pours per week on average, assuring the project was finished on time. The new six-million-gallon (22.7-million-liter) reservoir ensures that Rockwood Water People's Utility District can reliably provide clean drinking water for many years.

EFCO's E-BEAM & SUPER STUD technology formed the battered concrete tank walls measuring 66' (20.1 m) tall and 65'-4" (19.9 m) at the outside radius. This wall height is much taller than average tanks.



EFCO EQUIPMENT

E-BEAM & SUPER STUD, Round Column®

WARD-HENSHAW CONSTRUCTION TEAM

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