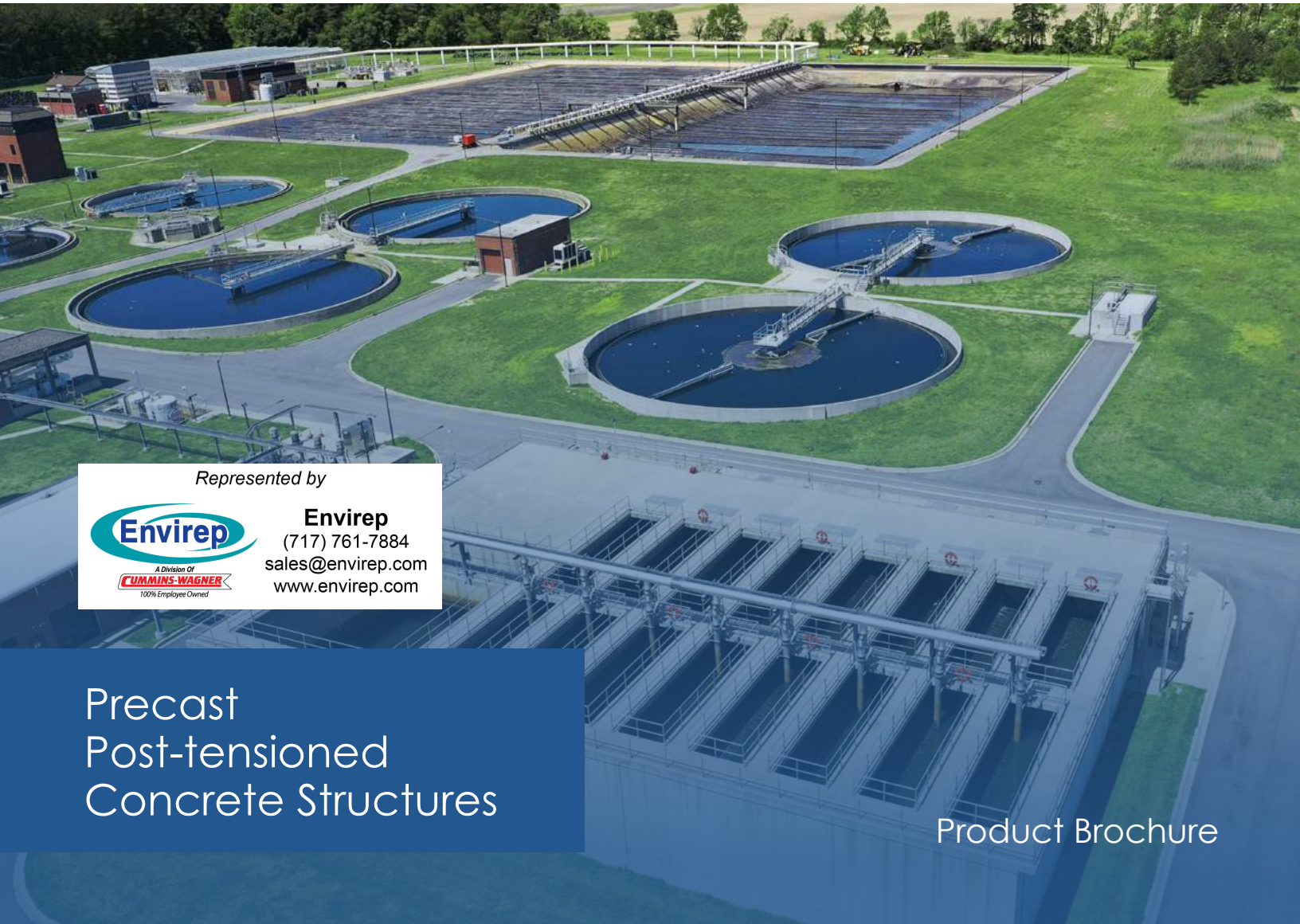
Dutchland LLC
Innovation. Experience. Eco-friendly.

Engineered Concrete.

Environmental Solutions.



Represented by

Envirep
A Division Of CUMMINS-WAGNER
100% Employee Owned

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Precast Post-tensioned Concrete Structures

Product Brochure

Our Company

Dutchland is a proven leader in the design, manufacturing and construction of precast post-tensioned tanks of unprecedented quality. For more than forty years, Dutchland has been building circular, rectangular, elliptical and custom designed water and wastewater plants using our state-of-the-art technology. All Dutchland tanks are built in accordance with ACI 350 and/or AWWA D115 to ensure long-term performance, durability and reliability.

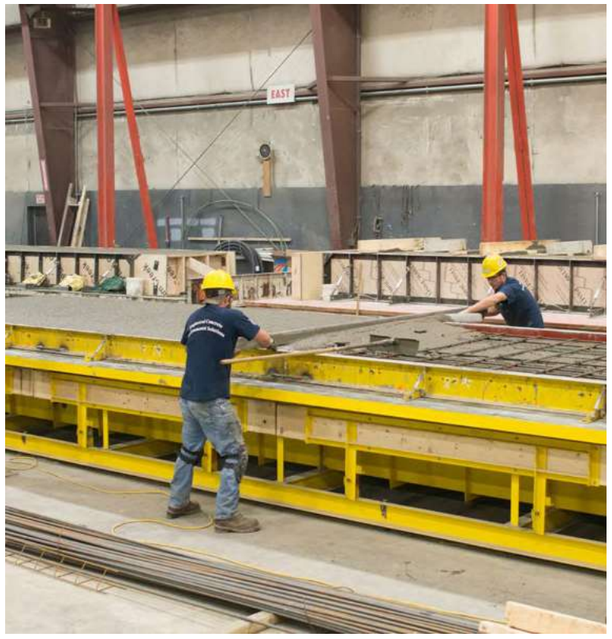
PCI CERTIFIED PLANT

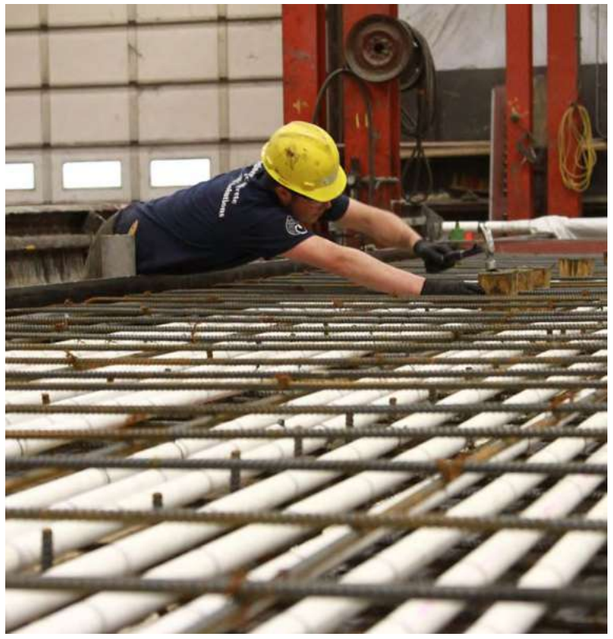
MADE IN USA

Custom Solutions

Every Dutchland precast structure is custom designed by our experienced engineering team to meet the specific needs of each project. Dutchland tanks are the perfect solution for many types of liquid containment including: potable water, wastewater treatment, storm water retention, and more.

Our precast tanks can be constructed as simple or complex structures, buried, partially buried, or above ground, as well as either circular, rectangular, or elliptical in configuration to accommodate project needs and site constraints.





Superior Quality

In a controlled plant environment, Dutchland's precast manufacturing facility is able to achieve consistency in temperature, moisture and ideal curing conditions, as well as form control, that is not possible in cast-in-place or on-site precast concrete.

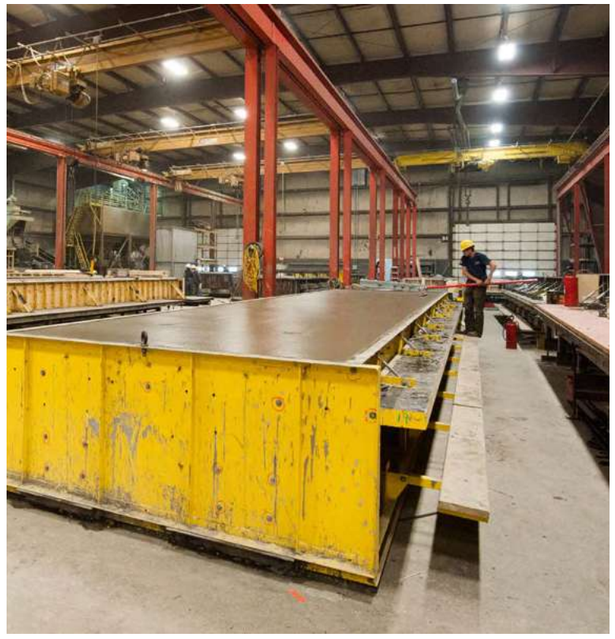
Precast pieces are cast horizontally in steel forms, resulting in far better consolidation than vertically poured cast-in-place or on-site precast concrete.

Dutchland produces its own concrete with materials that come from nearby quarries and from suppliers we utilize year after year to assure predictable results.

Highly trained employees:

- **ACI-certified**
- **PTI-certified**
- **OSHA 10**
- **OSHA 30**

Dutchland structures include a two-year structural warranty.



Greater Durability

Dutchland uses self-consolidating concrete (SCC) with fly ash to produce dense and durable concrete.

Dutchland tanks are designed for 5,000 - 6,000 psi at 28 days.

Dutchland's standard concrete far surpasses industry standards.

The Dutchland precast post-tensioned tank design provides active reinforcing which results in significantly less cracking and greater longevity.

A low water-to-cement ratio, in addition to ideal curing conditions, ensures a dense, highly durable, watertight structure.

Dutchland employs a very comprehensive QA/QC program:

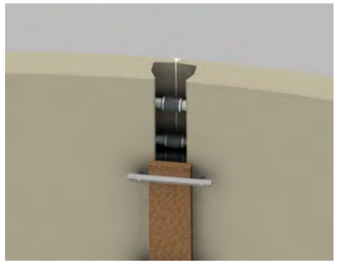
- Concrete testing every 20 yards for unit weight, air entrainment, spread, temperature, and compressive strength
- Pre-pour and post-pour checks on every piece
- Strip strength testing
- Aggregate testing

State-of-the-art Technology

Dutchland tanks are dynamically reinforced with post-tensioning tendons to maintain a high residual compression in the walls, even when the tank is full. This method actively reinforces the structure and significantly enhances the watertightness and durability of the precast structure.

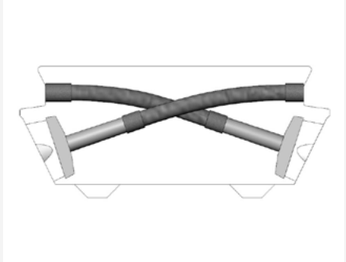
With Dutchland's post-tensioning technology, changes in precast concrete caused by shrinkage occur before the tank is erected. Therefore, the total movement in a precast tank is significantly less than in a cast-in-place tank, resulting in less cracking and greater longevity.

Wall Panel Detail



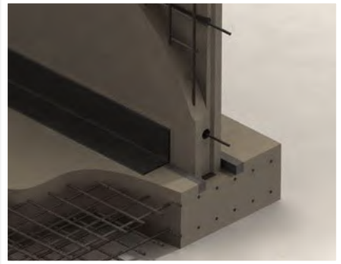
Duct couplings isolate tendon ducts from wall joints and ensure watertight ducts.

Buttress Panel Detail

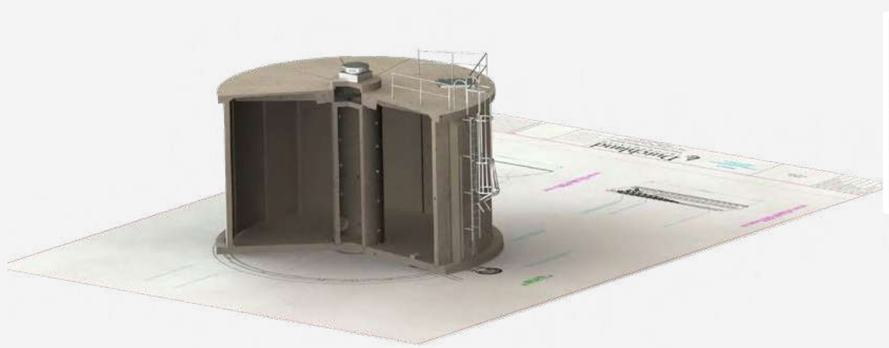


Tendons are terminated and tensioned at buttress panels. Crossing tendons ensures the entire tank is under compression.

Wall-to-Base Detail



After the walls are tensioned, they are grouted into keyways in the base slab and sealants are applied to the wall/base slab interface.



Cross-section of multi-tendon conduit

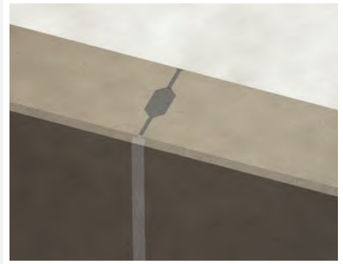
Walkway Detail

Walkways are structural components of rectangular tanks and are post-tensioned with sheathed tendons.

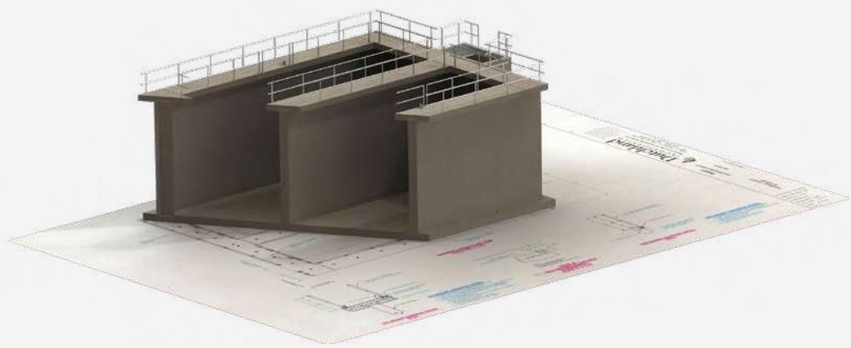
Post-Tensioning Details

Tendons are encapsulated in high density polyethylene sheathing inside a grout-filled plastic duct. The anchor is also completely encapsulated, including the cut end of the tendon.

Wall-to-Wall Detail



Wall panels are grouted and sealed with an elastomeric sealant.



Anchor pocket with single strand tendon & wedge set

Efficient Construction

Dutchland offers unmatchable economy and speed to complete your project on time and on budget:

- Dutchland is able to start the design process and manufacturing prior to beginning on-site construction.
- Dutchland has year-round unimpeded manufacturing and erection capabilities.

Dutchland precast has many advantages at the jobsite:

- Minimizing installation time
- Ensuring a precise fit
- Minimizing waste
- Reduced environmental impact (noise, truck traffic, pollution)
- Erecting in all weather conditions
- Elimination of fabrication at the construction zone

All of which improve logistics and contribute to environmental stewardship.

Choosing Dutchland precast concrete results in a much shorter overall project schedule because off-site precast operations at the Dutchland facility occur simultaneously with on-site work, such as excavation and the installation of deep foundations.

Versatile Wastewater Experience

Client: Alexandria Renew Enterprises
Project: 18 MG Combined Sewer Overflow Tank
Location: Alexandria, VA
Project Details: Structure footprint 415' long by 256' wide, 18 month project schedule, 3 main levels plus building integrated into tank, center pipe gallery buried 50', 1,665 total precast pieces, over 2,500 cu.yd. concrete
Engineer: KCE Structural Engineers, PC

Client: City of Lock Haven
Project: 3.75 MGD Biological Treatment
Location: Lock Haven, PA
Project Details: Biological Treatment Facility (250'-7" by 202'-11") using 4 SBRs and 4 aerobic digesters, also includes a building for pumps, blowers, equipment, employee locker room, etc.
Engineer: Larson Design Group

Client: New Stanton WWTP
Project: 4.25 SSO Tank
Location: New Stanton, PA
Project Details: Trapezoidal tank measuring 122' by 192' by 80' by 186' to maximize space utilization under tight site constraints resulting from high-voltage power lines. The tank has a sloped base slab for drainage and washdown.
Engineer: Gibson-Thomas Engineering

Client: Canton WWTP
Project: 3.6 MG Biological Reactor Tank & Membrane Bioreactor Tank
Location: Canton, GA
Project Details: EBiological reactor tank measuring 162 l by 119 w by 26' tall and an MBR tank measuring 88 l by 68 w with an integrated pump/blower building.
Engineer: Atkins Global

Client: Moorefield WWTP
Project: 4.1 MGD Advanced Nutrient Facility
Location: Moorefield, WV
Project Details: Oxidation Ditch: 275'-6" by 126'-6"
Two Primary Clarifiers (diameter: 64')
Two Final Clarifiers (diameter: 95')
Leachate Storage Tank (diameter: 34')
Dewatering Tank/Building
Engineer: Triad Engineers, Inc.

Client: ECI WWTP
Project: 1 MG Membrane Bioreactor Tank
Location: Westover, MD
Project Details: MBR tank measuring 83 l by 67 w and a base slab at two elevations. A building covers a portion of the tank.
Engineer: KCI Engineering

Versatile Water Experience

Client: United States Military Academy
Project: Potable Water Storage
Location: West Point, NY
Project Details: 500,000 Gallon AWWA D115 Circular Tank
500,000 Gallon AWWA D115 Circular Tank
250,000 Gallon AWWA D115 Circular Tank
250,000 Gallon AWWA D115 Circular Tank
Engineer: HDR
EDM Consultants, Inc.
QPK Design Architecture

Client: Pickering West WTP
Project: 1.5 MG Clearwell Tank
Location: Phoenixville, PA
Project Details: Rectangular clear well tank measuring 149' long by 132' wide and sloped wall heights ranging from 14'-0" – 16'-2" tall. The tank is covered with a precast roof.
Engineer: Mott MacDonald

Client: The Greenbrier Sporting Club
Project: Water Storage Tank and Pump House
Location: White Sulphur Springs, WV
Project Details: 0.3 MG AWWA D115 Rectangular Tank
Engineer: Draper Aden Assoc.

Client: Lonaconing Koontz Run Reservoir
Project: Water Storage
Location: Lonaconing, MD
Project Details: 3 MG AWWA D115 Rectangular Tank
Engineer: RK&K Engineers

Client: Yardley WTP
Project: Carbon Contact, Flocculation, and Sedimentation Tank
Location: Yardley, PA
Project Details: The carbon contact basin measures 73' long by 19' wide; the pipe gallery measures 17' l by 50' w; and the sedimentation/floc basins measure 73' l by 50' w. Two small portions of the tank are covered with a precast roof.
Engineer: Gannett Fleming

Client: City of Salisbury
Project: Water Storage
Location: Salisbury, MD
Project Details: 1 MG AWWA D115 Circular Tank
Engineer: GMB

Experienced Partner

Dutchland has designed and built over 1,000 structures and wastewater treatment plants for a remarkable range of clients. This breadth of experience equips us to tackle any project challenge, large or small. However diverse our projects may be, the results are one and the same:

On schedule,
On time,
Superior quality and
Long-term durability.

Testimonials

"After using precast, post-tensioned concrete tanks for multiple complex, time and budget sensitive projects, I recommend this approach versus cast-in-place concrete structures. Furthermore, I would recommend Dutchland to manufacture and assemble my structures without reservation."

Keith, Stafford County

"On every project, Dutchland demonstrated diligent planning and stringent quality control that resulted in structures built for long-term performance that far exceeded our expectations."

Robert, RK&K Engineers

"Dutchland's on-site crew is highly skilled, efficient, diligent, and hard-working. Their can-do attitude has enabled them to adhere to their original schedule despite setbacks. Their employees are professional and well trained. It is evident that Dutchland strongly values an attention to detail, safety, teamwork and communication."

Jeff, Clark Construction

Clients

- IBM
- United States Military Academy
- United States Air Force
- Baxter
- Alexandria Renew Enterprises
- Furmano's
- PA American Water
- MillerCoors Brewing Company
- Perdue Farms
- GlaxoSmithKline
- Sanofi Pasteur
- The Hershey Company
- Army National Guard
- Ken's Foods
- United States Army Corps of Engineers
- Baltimore-Washington International Airport

Colorado - Dacono Plant
Dacono, CO

Colorado - Plant A
Colorado Springs, CO

Colorado - Plant B
Colorado Springs, CO

Florida
Alachua, FL

North Carolina
Franklinton, NC

Ohio - Plant 1
Canal Fulton, OH

Ohio - Plant 2
Canal Fulton, OH

Pennsylvania
Gap, PA

South Carolina
Rock Hill, SC

Nine locations across the US, one standard of quality

Since the 1980's, Dutchland has been specializing in the design, manufacturing and construction of precast post-tensioned concrete structures for water and wastewater applications. Our reputation was built on designed custom solutions of unprecedented quality to ensure long-term performance, durability and reliability.

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Dutchland LLC
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