



Dutchland INCORPORATED



Dutchland is committed to ensuring its products are *designed, manufactured and constructed* in the most responsible manner.

At Dutchland, we create designs and use materials and construction techniques that reduce consumption of non-renewable resources, minimize waste, and create healthy productive and safe environments.

CONSIDER THE SUSTAINABILITY BENEFITS FROM DUTCHLAND PRECAST CONCRETE:

DESIGN:

- ◆ Precast structural pieces use less material than products built on site which results in less material harvested from the environment and less to dispose of when the structure's lifecycle is over.
- ◆ Dutchland precast tanks, both rectangular and circular, do not transfer moment into the base slab which allows for a thinner base slab as compared to cast-in-place designs.
- ◆ Dutchland utilizes self-consolidating concrete with a very low water-to-cement ratio and contains recycled materials, such as fly ash, to produce dense, impermeable concrete.
- ◆ Dutchland's mix design includes fly ash to produce dense, impermeable concrete.

MANUFACTURING:

- ◆ Precast manufacturing holds tighter tolerances and precise mixture proportions. Additionally, being manufactured in a factory greatly reduces waste, including waste from excessive concrete, formwork and bracing, packaging and debris that accumulates on cast-in-place sites.
- ◆ Precast manufacturing creates less dust which is healthier for workers and the environment.
- ◆ Dutchland does not produce concrete waste. Any excess waste is utilized to make small concrete items.
- ◆ The workplace environment is much healthier and safer for employees in a precast manufacturing plant than on a construction site. Dutchland's precast shop has controlled conditions where air quality, noise and safety hazards are monitored

CONSTRUCTION:

- ◆ Precast concrete reaches the construction site ready for installation, reducing the amount of land needed for construction activities and storage. Precast tanks can be built smaller and deeper to reduce the overall footprint.
- ◆ Since the precast components are manufactured in the factory, there is significantly less truck traffic, equipment and material suppliers around the final construction site. This limits the disruption of traditional jobsites that suffer from noise, pollution, waste and other common irritants. This streamlined approach to construction provides a far more efficient atmosphere for productivity, and eliminates unnecessary distractions and interference that are typical of construction sites.



Dutchland
INCORPORATED

Project Example of How Dutchland Precast Contributes to Sustainability

DID YOU KNOW

The energy required to produce cement is the largest source of CO₂ emissions in concrete. About 0.9 pounds of CO₂ gas is released into the atmosphere for each pound of cement produced.

Concrete accounts for 8% of CO₂ released into the atmosphere.

For a 4.5MG rectangular tank project in Henrico County, VA, utilizing Dutchland precast concrete will **save 23.5% in CO₂ emissions** over cast-in-place concrete.

	Dutchland Precast Concrete	Cast-in-Place Concrete
Amount of Concrete (cu. yd.)	4,388 ¹	5,600
Amount of Cement in Concrete (#/cu. yd.)	552	570 ²
Cement Content (#)	2,441,976	3,192,000
# of CO ₂ released/# of cement	2,197,778	2,872,800
SAVINGS IN CO₂ EMISSIONS	23.50%	

¹ The amount of concrete used for Dutchland precast includes 1,100 cu.yd. ready-mix for the base slab.

² The cement content of ready-mix varies widely. An average from 3 project local ready-mix suppliers was used for this analysis.

