

PRECAST CONCRETE UNDERGROUND UTILITY VAULTS

PROTECTING OUR VITAL CONNECTIONS

Buried throughout North America, precast concrete utility vaults protect the vital connections and controls for utility distribution. Precast concrete is nontoxic, environmentally safe and made from natural materials, making it an ideal material for use in all underground applications.

WHY PRECAST CONCRETE?

- Strength increases over time
- Produced in a quality-controlled plant environment
- Weight helps resist buoyant forces
- Excellent durability during backfill and use
- Ease and speed of installation
- Environmentally sound
- Watertight when produced according to industry standards
- Low long-term costs

USES FOR PRECAST UTILITY VAULTS:

- Communications
- Electricity
- Gas
- Steam



QUALITY | VALUE | PERMANENCE

PRECAST CONCRETE UNDERGROUND UTILITY VAULTS

Precast concrete utility vaults are the perfect solution for most underground applications. The use of precast concrete utility vaults has become so widespread that they are covered by four ASTM standards:

ASTM C 857

Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures

ASTM C 858

Standard Specification for Underground Precast Concrete Utility Structures

ASTM C 891

Standard Practice for Installation of Underground Precast Concrete Utility Structures

ASTM C 1037

Standard Practice for Inspection of Underground Precast Concrete Utility Structures

These specifications govern the structural design, installation and inspection of underground precast concrete utility structures. They also help specifiers ensure a quality precast concrete product during and after installation.

Precast concrete is desirable over cast-in-place concrete due to the relative ease of installation. Precast concrete utility structures can be easily installed and immediately backfilled — there is no need to wait for concrete or mortar to cure. Further, the concrete quality is more easily controlled in a plant environment than on-site casting.

For more information on precast concrete utility vaults, contact:

In addition, precast concrete underground utility structures have several other advantages over competing materials:

FLAMMABILITY

Precast concrete utility vaults are noncombustible and can withstand high temperatures. Fiberglass loses its structural integrity at 200 F. HDPE melts at 266 F.

LONG-TERM MECHANICAL PROPERTIES

Precast concrete gradually strengthens over time. Other products, such as fiberglass and steel, can deteriorate and lose strength, especially in the presence of ground water.

BUOYANCY

With a specific gravity of 2.40, precast concrete structures resist buoyant forces better than other materials. Fiberglass has a specific gravity of 1.86, and HDPE has a specific gravity of 0.97.

Installation of precast concrete utility structures is a straightforward

process. Additional labor-intensive and time-consuming on-site preparation is necessary for anchoring structures made of more buoyant materials. In addition, the structural capacity of other materials is often dependent on the design and quality of backfill material, while precast concrete products are less susceptible to problems related to improper installation and backfill procedures.

Precast concrete is the material of choice for underground utility structures. Precast is modular and can fit any design situation. It is produced in a quality-controlled environment and can be installed immediately upon arrival at the job site. Precast concrete utility structures can be manufactured for watertightness and are durable during storage, transportation and use. They are easily installed and environmentally friendly.



NPCA

Precast ... The Concrete Solution