



Concrete Pressure Pipe serves the cooling water needs of major electric power generating plants around the world.

Advantages of Concrete Pressure Pipe:

- Custom-designed for the plant needs and configuration; it fits the plant, not the other way around.
- Furnished in large diameters for high flow capacity.
- Rugged and can support heavy equipment loads during plant construction.
- Durable and reliable, ensuring a lifetime of dependable service.
- Readily manufactured to meet your schedule and simplify construction, thanks to its bottle-tight O-ring sealed bell and spigot joints, reduced bedding and backfill criteria, and testable joints.
- Smooth, with low friction loss characteristics for low-cost performance.



CONCRETE PRESSURE PIPE IN POWER PLANTS

State of the art electric power generation requires state of the art pipe – Concrete Pressure Pipe – to be exact. Water intake, discharge, make-up, and distribution pipelines for cooling are mission-critical applications for Concrete Pressure Pipe.

WHY USE CONCRETE PRESSURE PIPE?

Custom Designed

Whether your power generation plant is fossil fuel or nuclear, Concrete Pressure Pipe is the right choice for cooling water piping. Every piece is custom designed for its place in the plant.

The design of Concrete Pressure Pipe considers the internal pressures and external loads to produce a pipe with the load capacity needed for the job.

Fittings are designed and manufactured for the specific plant application. Fittings also have gasketed joints, similar to those used for straight pipe sections. As a result, you do not have to select the fittings from a catalogue and design the system around pre-manufactured pieces.

Large Diameters

Power generation plants use and circulate large quantities of water and that takes large-diameter pipe. Concrete Pressure Pipe is manufactured from 16 to 144 inches in diameter in accordance with published consensus standards. Many applications have used substantially larger pipe. Large diameters deliver cooling water with desirable velocities, lower friction losses, and therefore lower pumping costs.



Since the early 1950s, engineers have specified Concrete Pressure Pipe and relied on its performance for cooling water pipe systems in nuclear, coal-fired and gas-fired power plants.

Construction Equipment Loads

Concrete Pressure Pipe is uniquely designed to resist the combined loading of internal pressure and external loads. Its high external load capacity derives from the high compressive strength of concrete. Therefore, since the buried cooling water piping is installed before surface construction can progress, its ability to resist construction equipment loads is essential. Rigid Concrete Pressure Pipe supports those loads more dependably than any other product.

Durability

Concrete Pressure Pipe has built-in protection. Concrete and mortar linings and coatings protect the ferrous reinforcement elements of Concrete Pressure Pipe by providing an inherently alkaline environment that passivates the steel and protects it from corrosion. Buried concrete in a moist environment has an almost unlimited life, since the performance of concrete actually improves in moist conditions, unlike most competitive materials.

Simplified Construction

Three aspects of Concrete Pressure Pipe provide for much simplified construction installation.

First, steel bell and spigot joints with an O-ring seal require only push-together assembly. No bolting or welding is required for normal assembly. The O-ring joints prevent loss of valuable cooling water.

Second, in typical installations Concrete Pressure Pipe often requires no special bedding. Use of native materials for bedding and backfill eliminates the need for expensive imported bedding and backfill materials

and results in lower installation costs. In essence, Concrete Pressure Pipe is its own supporting structure. In contrast, because all other competitive products are flexible, they require substantial care in selection and application of bedding and backfill materials, often at a significant cost. When installing flexible pipe, you must create the vast majority of the supporting structure with special bedding, backfill and compaction, all closely inspected to comply with specifications.

Third, testable joints are available from most manufacturers of Concrete Pressure Pipe. The testable joint is manufactured with a double O-ring gasket with an orifice cut into the joint ring between the two gaskets. Air pressure is then used to test the joint for leaks. By pretesting in this manner, the joints are assured to be watertight. Testable joints result in more rapid installation since backfilling can commence sooner than with pipe that lacks testable joints.

Low Friction Losses

The manufacturing and installation processes for Concrete Pressure Pipe result in pipelines with smooth surfaces across the joints between adjoining pipe units. The concrete or mortar lining does not deteriorate with age when flowing full.



Southern Company's Vogtle Units 3 & 4 in Georgia are the first new generation nuclear plants in the US. The circulating water system includes more than 12,000 feet of Concrete Pressure Pipe carrying water from the turbines to the cooling towers and back again.

LEARN MORE

For more information on using Concrete Pressure Pipe in your next power plant project, speak with your Concrete Pressure Pipe supplier, or contact the American Concrete Pressure Pipe Association at **714.801.0298** or **www.acppa.org**.



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