In the 1930s, engineers at Preload embarked on a vision which would literally revolutionize the storage tank industry. The idea was simple: create a storage tank structure that would stand the test of time and provide excellent service for decades. One that would not require coatings and thus would be virtually maintenance-free. One that could be used for many applications across many different industries. One that would be economically priced when compared to other types of storage tank structures commonly in use at that time.

Preload engineers continued to research various means to accomplish their goal and a few years later, the engineering research was complete and the solution was clear. Shotcrete and concrete would be used to construct the tank to ensure long-term durability and eliminate costly maintenance. The tank wall would be prestressed using a solid wire manufactured from high-strength steel to put it into permanent compression to eliminate cracking and long-term durability problems. The prestressing wire would be placed with a new invention that would allow precise, economical, and safe tensioning to produce a reliable tank structure. Shotcrete would prove to be one of the most important materials, as it provided a sure means of encasing the high-strength wires and bonding them to the wall to guarantee corrosion-free service and reliable performance. Last but not least, Preload would perform the work with specialized engineers and trained construction professionals to ensure a level of quality that had never before been applied to concrete storage tank structures. In doing so, the best properties of concrete, shotcrete, and steel were used and the industry of wire-wrapped prestressed concrete tanks was born. Preload’s invention was one of the first examples of sustainable development in modern construction history. Compared to conventional cast-in-place concrete tank walls, quantities of concrete and steel in wire-wrapped tank walls were reduced by over 50% as a result of the efficient use of the materials. Over 85 years later, the benefits of the invention of wire-wrapped prestressed concrete tanks by Preload continue to have a lasting impact on communities and industries across the nation and around the world. The hallmarks of Preload’s invention continue to be enjoyed and appreciated by thousands today, as wire-wrapped prestressed concrete tanks provide durable, low-maintenance storage for the world’s most precious natural resources, including water, reuse water, thermal energy storage, and liquefied natural gas. Preload tanks also serve to protect the environment when they are used to treat and store wastewater, storm water, reuse water, and process water for industrial applications.

85 Years of Exceptional Quality Design and Construction

Today, Preload continues to be the industry leader in the design and construction of wire-wrapped prestressed concrete tank structures. With over 3500 structures built to date for all types of liquid storage, including water, reuse water, wastewater treatment, storm water, industrial process applications, thermal energy storage, and liquefied natural gas, Preload continues to lead the way in the design and construction of these structures in the United States and around the world. Preload wire-wrapped prestressed concrete storage tanks are virtually maintenance-free service for more than 70 years
free and are constructed in volumes ranging from 100,000 gal. (380 m³) to well over 40 million gal. (150,000 m³). Preload water storage tank applications for public entities meet a wide range of demands for different operating requirements and site conditions. Those demands include tanks that are partially or fully buried, have internal baffle walls or mixing equipment, and have various types of exterior architectural treatment.

The innovative design and construction techniques invented by Preload continue to be used to safely build high-quality storage tanks with proven long-term durability. Many of these design and construction techniques have been adopted as industry standards in American Concrete Institute (ACI) and American Water Works Association (AWWA) publications. In addition, new innovations have been developed by Preload engineers over the past 85 years to increase the life expectancy and reliability of prestressed concrete storage tank structures. These include the incorporation of a ribbed steel shell diaphragm, which is now an integral part of the tank and provides impervious watertight service as well as the development of base restraint details, which ensure safe performance of the tank structure in high seismic areas and in those situations where tanks require differential backfill. New methods of construction have been developed as well, including the use of precast tilt-up core walls, which brought additional options and flexibility to the construction of quality prestressed concrete tanks. Shotcrete continues to be a primary material in the construction of the tank—both in the construction of the core wall and, more prominently, to encase the steel shell diaphragm and high-strength prestressing wires. Preload employs many ACI Certified Shotcrete Nozzlemen who are well-trained experts in the application of wet-mix shotcrete to ensure excellent quality in the finished tank structure. Preload’s construction staff is specialized and highly trained in the techniques necessary for producing results that meet high levels of quality, expediency, and safety. The staff includes personnel that have each been responsible for successfully constructing hundreds of prestressed concrete storage tanks. Preload’s construction staff and its top management approach each project with the objective of ensuring that both the client and community are fully satisfied with the decision to use Preload.

Since its inception, Preload has built its business on customer satisfaction, quality, timely project completion, safety, and competitive pricing. The high level of repeat business achieved by the company is evidence of Preload’s ability to exceed the expectations of its clients.