



Tanks

Reference Details:

Client Korea Gas Corporation +++

Executing Company Daelim Industrial Co. Ltd.

DSI Services Supply 1,250 t of cryogenic prestressing steel (DYWIDAG circular prestress 19 x 0.6" type MA and vertical DYWIDAG tendons 12 x 0.6"); Site supervision; Consultancy

**Safe storage with DYWIDAG LNG technology****Liquefied Natural Gas Tanks, Incheon, Korea**

The energy requirements of our industrialized societies are to an increasing extent covered by natural gas. As gases considerably reduce their volume during liquification (methane: 1000 l gas in contrast to 1.7 l liquid) thus giving clear advantages with regard to storage and transportation, the technology of liquification of gases has been continuously developed in recent years. Prestressed concrete containers for liquified gases require advanced design and construction methods in order to reduce to a minimum the dangers with relation to storage at cryogenic temperatures.

DYWIDAG developed and designed such liquified gas containers under consideration of all factors of safety. Together with the clients and partners for the manufacture of the mechanical and electrotechnical components, solutions can be offered, which fulfil the highest requirements of safety and quality.

The design system developed by DYWIDAG makes possible optimum application of concrete and steel under consideration of the behaviour of materials at cryogenic temperatures. The most important feature of this design system is the principle of monolithic design under application of the prestressing system using post-tensioned tendons, considering the requirements of international regulations, e.g. referring to the behaviour at temperatures down to -196°C.

The container system consists of an inner and outer containment. Calculations have proved that the monolithic outer containment can even withstand the thermic shock resulting from a sudden damage of the inner containment. The outer tank is designed and detailed to withstand earthquakes, fire and other extremely severe outer loads.

The three liquified gas tanks in Incheon, Korea, have a storage capacity of 100,000m³, a diameter of 70 m and a height of 46.35 m each.