



InfraCore[®] Inside FRP lock gates in Kanaal Erica-Ter Apel.

InfraCore[®] Inside is FiberCore Europe's proprietary technology to construct strong, lightweight and durable structures in fiber reinforced polymers (FRP, or composites). FRP is a proven technology, with significant advantages to steel, concrete and timber in lock gates, flood gates and other marine structures:

- Low-maintenance and long design life → beneficial Life Cycle Costs (LCC)
- Fully prefabricated → high quality and fast construction
- Lightweight → tuned to be just heavier than water, resulting in less wear on hinges
- Ten times stronger than steel and more durable than wood
- Safe
- 50 year warranty

Since its market introduction in 2007 in the Netherlands, InfraCore[®] Inside has established itself as an accepted major new construction material for infrastructure and marine construction. More than 250 projects have been realised in the Netherlands, UK, USA, China, Belgium, Italy and Surinam. InfraCore[®] Inside meets the loading requirements from the Eurocodes.

Low-maintenance lock gates

FRP features excellent properties when used in marine structures such as lock gates and flood gates. Because of the significant strength-capacity of FRP, InfraCore[®] Inside is competitive on initial costs compared to structures in timber and steel. When considering the design life of 100 years, the minimal amount of maintenance required and the reduced impact of stoppages, the comparison is even more overwhelmingly in favour of FRP.

FRP cannot rot or corrode, it is resistant to moisture, salt and UV-radiation, and does not decay over time. This makes the structure also in the long term safer than all alternatives.

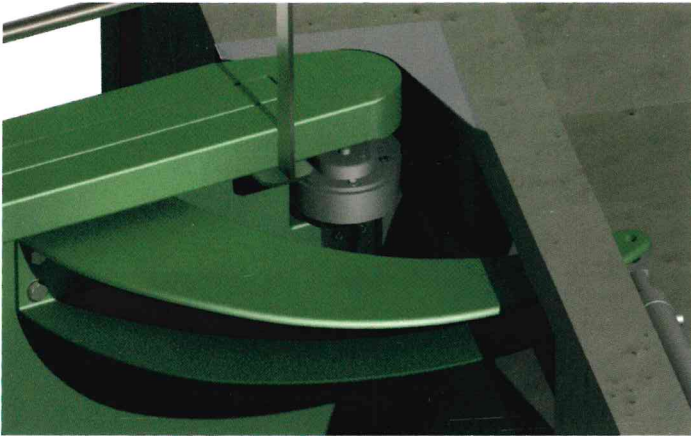


Inside the lock chamber of the Kanaal Erica-Ter Apel.

Design, fabrication and installation

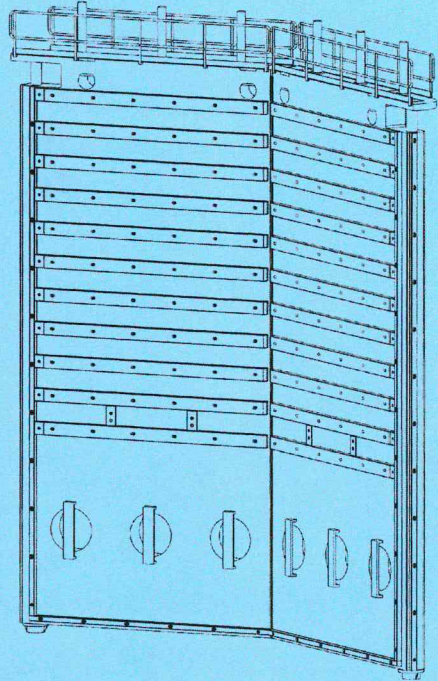
InfraCore® Inside is designed to measure, and lead times can be as short as a few weeks. Because of the low self-weight, the design of the gates is tuned to be just heavier than water. This minimises wear and tear on the hinges, thus saving on initial cost and maintenance.

InfraCore® Inside can easily be processed to attach hinges, rudders and planks to the gates. The gates can be supplied in any colour and can optionally be fitted with a non-slip wear surface and an FRP railing system. They can also be supplied pre-fabricated including the frame, ready to be cast into a reinforced concrete lock chamber. This speeds up construction and ensures geometrical accuracy.



Connection lock gate to top hinge.

Connection lock gate to lower hinge.



The world's biggest FRP lock gates made in InfraCore® Inside, by FiberCore Europe

The world's biggest lock gates realised in fiber reinforced polymers (FRP) will be located in the Wilhelminakanaal in Tilburg, the Netherlands. The gates are part of a major project to upgrade the canal for the future expansion of inland navigation.

The gates will be 13 meters tall by 6 meters wide, bridging 8 meters level-difference, and built using FiberCore Europe's InfraCore® Inside technology. These lock gates follow the trend for low-maintenance infrastructural works that has been set by the numerous FRP bridges already built with the same technology.

The client is Rijkswaterstaat, part of the Dutch Ministry of Infrastructure and the Environment, and responsible for the country's safety and main infrastructure. To the client InfraCore® Inside is no longer a trial but a proven technology with evident advantages over traditional materials. Rijkswaterstaat already owns a 142m long viaduct with an InfraCore® Inside deck.

FiberCore Europe will in total supply eight gates to main contractor Heijmans. The gates will be installed in 2015.

The world's biggest FRP InfraCore® Inside lock gates

Height	13 meter
Width	6 meter
Difference of water levels	8 meter

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