

Quality FRP structures
All loads and sizes
Lightweight
Easy handling
Less foundation
Easy installation





FiberCore Europe is the world's expert manufacturer of fiber-reinforced polymer (FRP or composites) load-bearing structures for both architecture and infrastructure. In a short time, composite load-bearing structures have caused a revolution in the construction industry. Composites can be manufactured in a short time, are lightweight, maintenance-free and environmentally friendly. To date, in the Netherlands over 200 (traffic-) bridges have been realized, including the first movable composite road bridge in the world. In the United States, the UK, Italy, Belgium and China InfraCore® Inside bridges have been installed as well.

FiberCore Europe was recently selected for the prestigious FEM Tech 25, a selection of the most innovative and promising companies in the Netherlands. Next to nominations for the Prima Ondernemen Award 2010 and the Holland Building Award 2010, the company was winner of the Infra Tech Innovation Award 2010. Additionally, in 2011 InfraCore® won the German AVK Innovation Award.

In 2013 our project of the 142m-long bridge deck won the InfraTech half-time award for its contribution to reducing traffic hindrance.

FiberCore Europe is located in the heart of the Port of Rotterdam, with both a production and an engineering department.

This logical link between engineering and production is the basis for the superior quality of its products. With more than 100 meters of quayside, the company can produce and ship structures that are much larger than what can be transported by road. Besides, our longest bridge so far is 142m long. It was built as 7 segments and connected on site.

For most structures, FiberCore Europe uses its proprietary InfraCore® Inside technology. This technology has been specially developed for heavy-load-bearing composite structures. The application possibilities of InfraCore® are many: composite bridges, composite traffic bridges (60 tons traffic) and composite lock gates. InfraCore® has proven to be an important material for construction purposes. Compared to concrete and steel, InfraCore® is lightweight, sustainable and maintenance-free. InfraCore® therefore perfectly fits in strategies of sustainable procurement. Moreover, InfraCore® is cost-competitive with concrete, steel and timber.

FiberCore Europe has produced over 250 all-composites structures, mostly bridges, but also lock gates and viaducts. These have been built for all the relevant clients: national and regional governments, municipalities, the public national infrastructure authorities and major contractors.

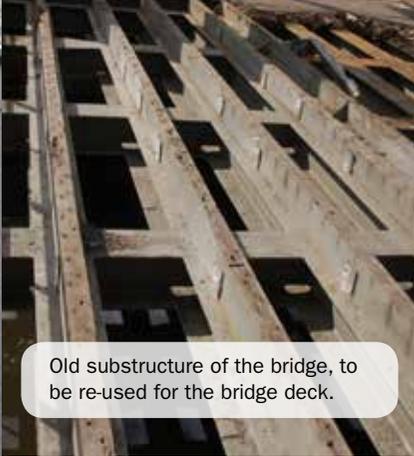


Pedestrian bridges

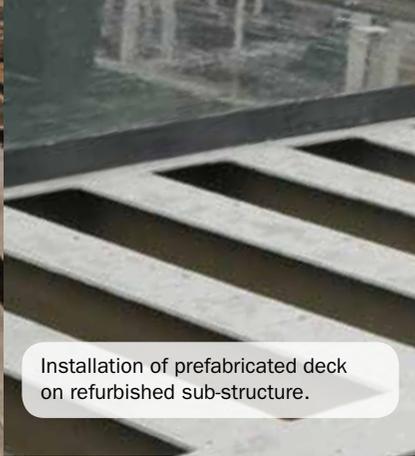
FiberCore Europe has produced over 150 pedestrian bridges, which are placed in the Netherlands, Belgium, UK, United States and China. The bridges are designed to order and are all built with InfraCore® Inside.



Original situation with timber planks seriously decayed.



Old substructure of the bridge, to be re-used for the bridge deck.



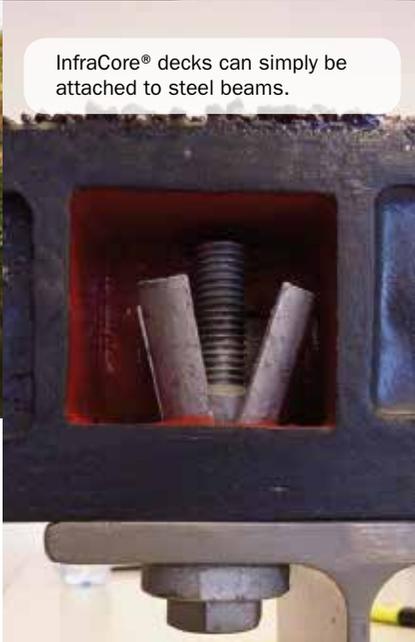
Installation of prefabricated deck on refurbished sub-structure.



Renewed bridge deck (9m x 11m) for the City of Leiden.



The full bridge was refurbished with just three InfraCore® deck segments, the biggest one 15m x 4,2m.



InfraCore® decks can simply be attached to steel beams.



Bridge decks

Old bridge structures can be refurbished with InfraCore® deck segments. These segments come as large prefabricated parts such that their installation is fast and watertight. The segments are lightweight and thus ideal for lifting bridges. They can carry any kind of traffic loading.



Traffic Bridges

The strength of the InfraCore® panels makes them ideal for heavy-duty traffic bridges. InfraCore® panels can carry up to 100 tons traffic.

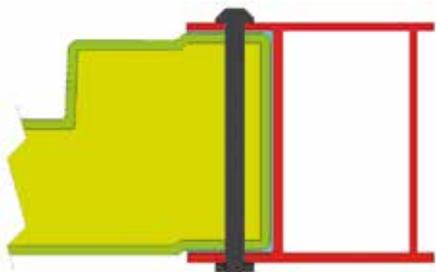


142m long viaduct with lightweight InfraCore® deck.
It was 800 tonnes lighter than the alternative in concrete.



InfraCore[®] inside

FiberCore[®]
europe



InfraCore[®] and steel

InfraCore[®] panels can easily be combined with steel structures, employing the best of both. This was key to the success of the composite bridge deck in the viaduct spanning an 8-lane motorway.

Installation of a bridge with one small crane on each side.



Installation of a bridge of 25 meter span:
15 minutes with only two men and a small crane.



InfraCore® bridges on concrete support.

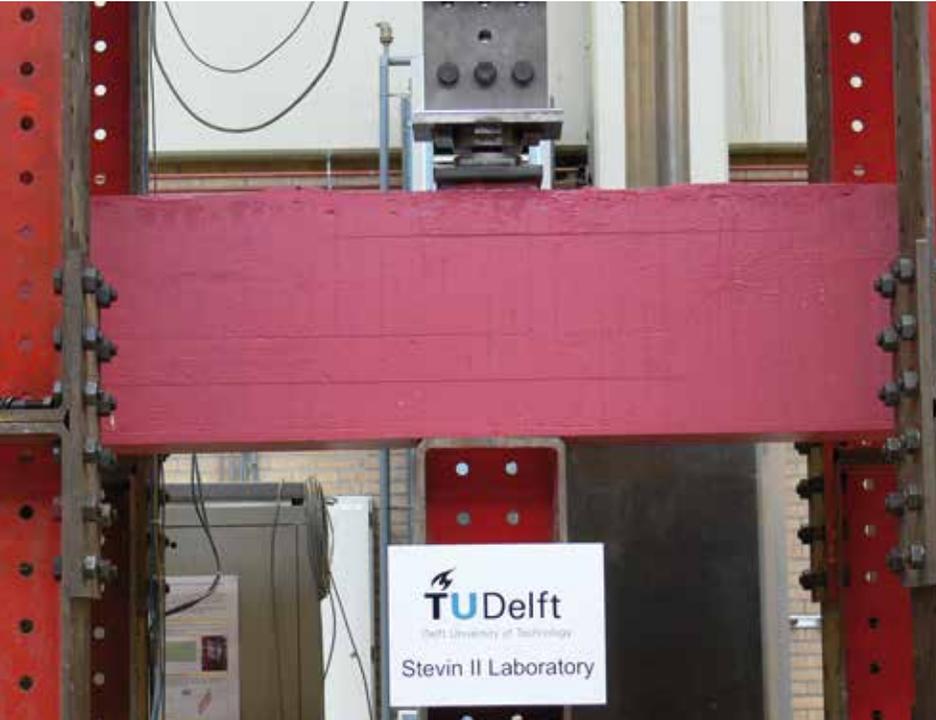
Installation straight from the truck.



Lightweight construction, easy transportation and installation

InfraCore® structures are lightweight and therefore easy to handle and to transport. Transportation by truck is common over land. In addition, most bridges can be containerized or shipped as deck-cargo directly from the facility of FiberCore Europe in the Port of Rotterdam (the gateway to Europe).

A further benefit of low self-weight are the low on-site costs, since less foundation is needed. The InfraCore® bridge can be put into place within one hour and can be done with light equipment on site.



Proven technology

InfraCore® Inside has been frequently tested, with excellent results. The most important measurements have been performed at the Stevin Laboratory of Delft University of Technology, Faculty of Civil Engineering and Geosciences, Structural and Building Engineering, FRP Structures. An overall safety factor of 8,6 was proven, a factor of 4 higher than required by Eurocodes combined with CUR-96 FRP Design recommendations.

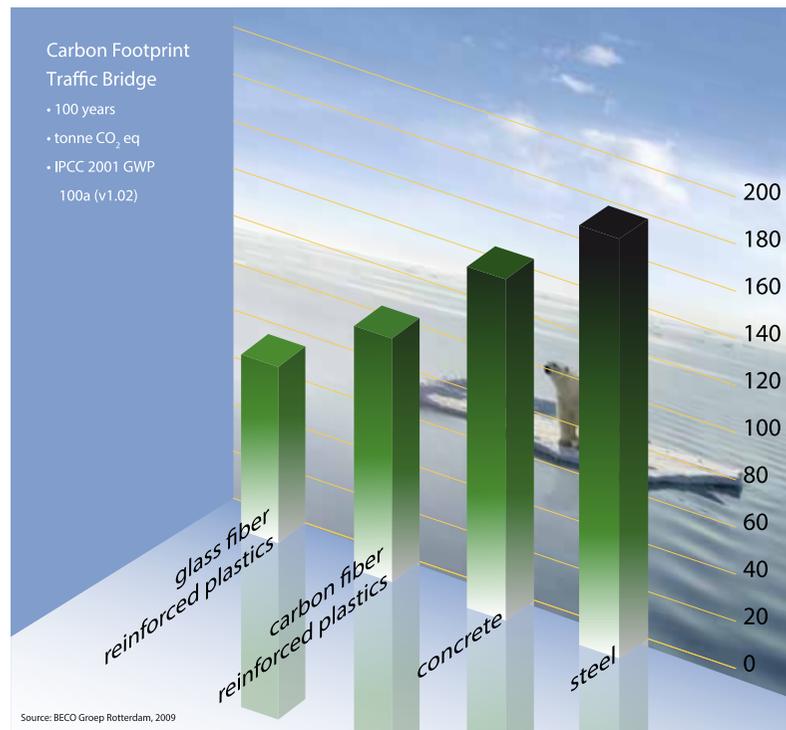
The compressive behavior was better than anticipated, showing ample safety to wheel loads and concentrated point loads. The crushing stress of more than 18000 kN/m² is more than 8 times the safety margin required by Eurocodes and CUR-96. Compressive damage can probably be repaired. Also, fatigue is no issue for InfraCore® Inside in this 600 kN traffic bridge, loaded lengthwise in 3-point bending. Even preliminary impact, followed by fatigue is no issue. No damage was reported after an equivalent of 150 years fatigue loading. No skin-core debonding was found in these tests, confirming InfraCore® characteristic properties and confirming its robustness and its applicability in bridges and bridge decks.



Sustainability

InfraCore® composite structures are produced in closed mold processes. That means no emissions. None of the materials or production methods cause pollution. Next to that, InfraCore® products do not need maintenance.

Also, foundations for InfraCore® products can be light-weight, using up only the smallest amounts of material and saving up to 30 times the amount of energy used by concrete. Therefore, projects with InfraCore® products have very small carbon foot prints.



Zero maintenance

InfraCore® products are maintenance-free. None of the used materials in InfraCore® is affected by moisture, fungi, heat or other forms of decay. That is why InfraCore® structures are provided with a 50-year guarantee.

Because composites are somewhat vulnerable to ultraviolet radiation, the structures are coated with a wearing coat. The outsides of the bridges have been treated with a gel coat or topcoat. This finishing is based on the same polymer used in the bridge's structural parts and is inseparably bound to it. InfraCore® is resistant to almost all forms of vandalism, like graffiti and fires. Maintenance is limited to cleaning for aesthetic reasons and renewal of the wearing coat when needed.



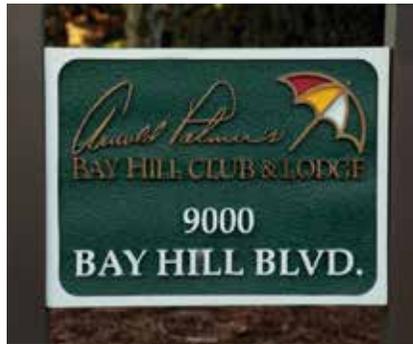
Biobased bridge

The world's first biological FRP (fiber reinforced polymer) bridge has been installed in the Eendragtspolder near Rotterdam (the Netherlands) on October 10 2012.

The biobased resin used to build the bridge improves its environmental performance even further.

FiberCore Europe has applied resin that was developed by DSM, a high strength structural resin partly based on renewable raw materials. The resin can be easily converted through FiberCore's vacuum infusion manufacturing processes into composite components. It contains approximately 50% bio raw materials, in this case derived from corn.

DSM is developing a second generation resin from plant residue to. The leading application for this resin today is composite bridge components. The bio resin allows designing bridge parts with the same high strength and stiffness, low weight, and great resistance to a rainy climate as the usual resin. This ensures safe use and long bridge life.



INFRACORE® GOLF BRIDGES

SUSTAINABLE. STRONG. MAINTENANCE-FREE.

InfraCore Golf Bridges is a standardized product line from FiberCore Europe and FiberCore USA jointly. The bridges are based on InfraCore technology and are optimised for the loading conditions of golf cars and maintenance equipment.

The bridges are entirely pre-fabricated and are lightweight, thus requiring very limited or no contractor's works on site. Since the bridges are maintenance-free, they provide the ultimate fit & forget solution for professionally managed golf courses worldwide.



The way forward

The advantages of fiber-reinforced polymer construction apply worldwide. The interest in the InfraCore-technology from around the globe proves this and it is more than likely that this interest will materialize in the near future. The Netherlands has been leading the way in this.

FiberCore Europe has the ambition to expand and make its technology available to the international market. To do so, it wishes to set up strategic liaisons with international partners that have access to new markets, and are familiar with the way the infrastructure market operates. FiberCore Europe is interested in initiating pilot projects with local partners. The related products would be engineered and supplied by FiberCore Europe, while the local partner would ensure the approvals process. FiberCore Europe will supply and assist in providing all the necessary information.

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2014: the world's biggest FRP lock gates to be built with InfraCore®