

# Dock

Palma de Mallorca



Platzierung der Abstellelemente mit herkömmlichen Hebemitteln  
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## Type of building:

### Clients and Developers:

Autoridad Portuaria de Baleares  
<http://www.portsdebalears.com/>

### Building contractor:

ARGE FCC Construcción-Amer e Hijos

### Completion:

2019

**MAX FRANK supplied Stremaform® permanent formwork for construction joints, assembled on the seabed, for the extension of the "Muelle Poniente Norte" dock in the harbour of Palma de Mallorca.**

Palma de Mallorca has the largest harbour and airport in the Balearic Islands. To better manage the increasing number of tourists, it became necessary to expand the "Muelle Poniente Norte" dock in the harbour by more than 36,000 square metres.

The project involved the placement of nine prefabricated concrete boxes, each with a length of 42.50 m, a width of 15.50 m and a height of 15.90 m, on the seabed. A total of 4,200 m<sup>3</sup> of underwater concrete was poured in layers of 1.05 m in height.

For the dock, MAX FRANK supplied Stremaform® permanent formwork units as substantial L-sections with a height of 2.10 m, a width of 2.20 m and a base of 0.80 m. Special elements were developed and manufactured for corner applications.

The pre-assembled Stremaform® units were positioned on the seabed using conventional lifting equipment. Due to the self-supporting construction and the weight of the fresh concrete during the concreting process, Stremaform® securely fixes itself to the substrate, withstanding the concreting pressure.

One of the major advantages of using Stremaform® is the reduction of working time under water (diver hours), resulting in significant cost-savings. Since most of the shuttering and assembly work is carried out before the formwork is submerged and dismantling of the elements is not required.

**Stremaform® permanent, self-supporting formwork for underwater construction joints**

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- Stremaform® jointing formwork for underwater base slabs is a prefabricated self-supporting system.
- Stremaform® sections are connected and assembled at the construction site.
- The supporting foot of the L-section and the diagonal braces, which are fitted on site, allow the installation of dimensionally stable formwork under water.
- The weight of the concrete stabilises and fixes the Stremaform® jointing formwork to the seabed during concreting.

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## Products used:



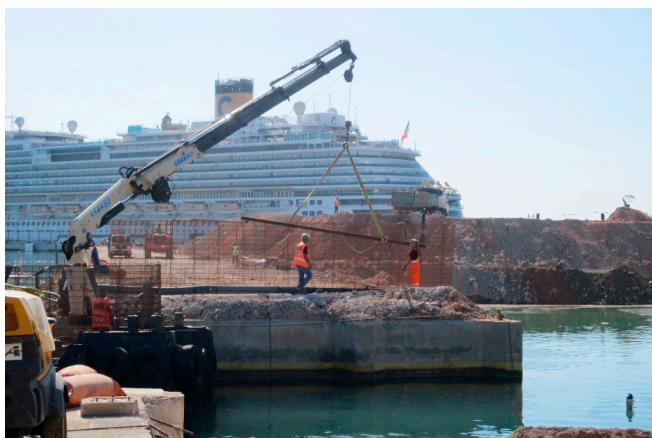
Stay-in-place formwork for  
working joints Stremaform®



Formwork elements Stremaform® for underwater concreting  
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Stremaform® formwork elements in L shape  
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Placement of the elements with conventional lifting equipment  
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Concreting against prefabricated caissons  
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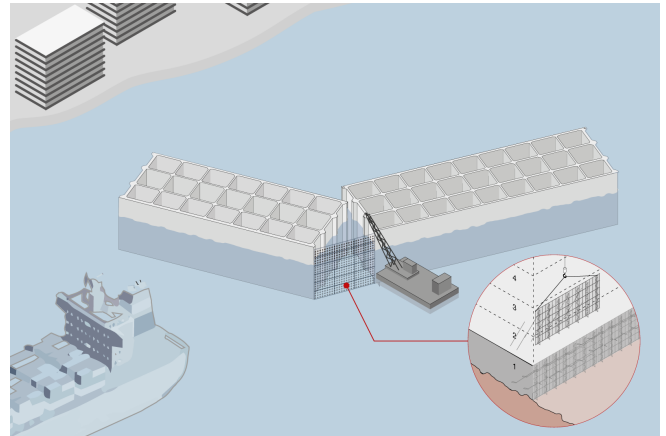


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Last concreting process  
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How to: Permanent formwork for underwater construction joints  
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