

Expansion of the Terminal de Contenedores de Barcelona

Project overview >

The remarkable growth of container traffic in the Port of Barcelona (the third largest Spanish container port, and the ninth in Europe) in recent years, together with its strategic geographic location, has led to the development of a new and modern container terminal at the Port of Barcelona. On completion, the terminal will be capable of serving multiple mega-vessels simultaneously and will open a new Mediterranean corridor for European trade. A key feature of the ArcelorMittal Fibres offer to its construction customers is the provision of our solutions specification for steel fibre reinforced concrete. In 2013 ArcelorMittal Fibres was contracted to provide solutions expertise on steel fibre reinforced concrete for the expansion of the Terminal de Contenedores de Barcelona Container Terminal.

Project title: Container Terminal, Ampliación Terminal de Contenedores de TCB, Muelle Sur, Fase 2, Puerto el Prat de Barcelona

Client: Terminal de Contenedores de Barcelona (TCB)

Construction partners: Copisa Constructora Pirenaica S.A

Location: Port of Barcelona

Working environment: Saltwater quayside

Area: 90,000m²

Fibre type: HE+ 1/60

Dosage: 35kg/m³

Volume: 850 tons

“The Barcelona Container Terminal slab is subjected to particularly heavy loads. Our dedicated technical team focused on many factors including load combinations, panel sizes and the local bearing capacity. This enabled us to propose, and then deliver, the best possible technical solution in a very efficient way.”

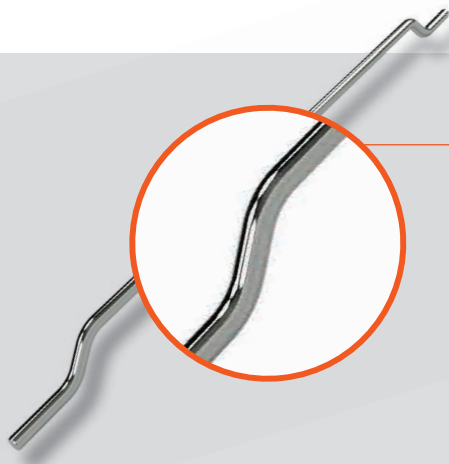
Sébastien Wolf

Head of Engineering, ArcelorMittal Fibres

The challenge >

Terminal de Contenedores de Barcelona, is Spain's most important maritime operator of port terminals and it is the main maritime engineering and consultancy services provider for container movement and general cargo.

The main challenge of the project was to deliver a quay side flooring solution that would meet the challenges of daily, year round movement of very high loads in a very aggressive and corrosive environment.



SPECIFICATION

Fibre type:
HE+ 1/60
Dosage:
35kg/m³
Slab thickness:
25cm
Concrete class:
C35/45
Surface area:
90,000m²

The solution >

The successful solution was delivered with the support of the ArcelorMittal Fibres team. The high performance HE+ 1/60 fibre, dosed at 35kg/m³ provided excellent workability, (even with this high dosage rate), and provided a quayside that serves the static, dynamic and high impact loads associated with one of the largest container terminals in Europe.



The result >

Port capacity has increased from 2.6m to 5.5m TEUs. According to the Barcelona Port Authorities, the new terminal contributes to the economy not only by increasing trade in Barcelona, but also by creating 600 direct and 2,000 indirect jobs. Barcelona Port Authorities also estimate that the revenues of this new capacity will exceed €300 million annually.

The ArcelorMittal Fibres team provided expertise on the project specification, the most appropriate fibre type to comply with the specification, dosage rates to guarantee performance, advice and support on the concrete mix and design optimisation, on-site support and advice on dosing and mixing as well as the installation of onsite dosing equipment.

The world is building on our expertise.

Contact: fibresupport@arcelormittal.com

Visit: www.arcelormittal.com/steelfibres