



Container terminal Altenwerder

As technical leader of a joint venture, HOCHTIEF Construction Civil Engineering and Marine Works built a quay wall for four super container vessels in Hamburg-Altenwerder from 1999 to 2002.

By realizing a special proposal, the business unit improved both design, construction and the construction method. With a length of 1,562 meters, the quay wall in the Süderelbe harbor-section is the longest of its type at Hamburg harbor. Its height of 24 meters—from the top of the quay wall to the bed of the River Elbe—makes it almost as tall as an eight-story house.

In 1998, we and our partners first were commissioned with executing the first construction phase of the “Ballinkai” quay wall, one of Europe’s most modern autonomous container terminals. We built two 350-meter berths for super container vessels and a feeder ship berth of over 100 meters in length. The quay wall was

designed for a water depth of 16.70 meters below mean sea level. The terminal area was raised to a flood-free level of 7.5 meters above mean sea level and is fit for the application of state-of-the-art transshipment technology. After a construction period of 22 months, we handed over the 950-meter-long quay wall to the client in early 2001.

In 2001 and 2002, HOCHTIEF worked as technical leader on the second construction phase and extended the Altenwerder quay wall by some 600 meters. Our competence center for harbor construction, waterfront and coastal structures improved the construction method for the combined suspension-supported diaphragm/pile-driven wall.

Project data

Client:

City of Hamburg, Economy and Labor Department, Hamburg Port Authority

Execution:

HOCHTIEF Construction AG
Civil Engineering and Marine Works
(structural design and technical processing)
Fr. Holst GmbH & Co. KG
F+Z Baugesellschaft mbH
(2nd construction phase)

Technical data:

Total length 1,562 m
Water depth 16.70 m below MSL
Design depth 20.80 m below MSL

1st construction phase:

Total length 947 m
Quay wall 800 m
Head wall length:
North 70 m
South 85 m
Diaphragm slot d=1.20 m
suspension-supported 27,000 m²

Sheet-pile wall steel:

Installation elements 10,000 t
Sheet pile apron 1,200 t

Steel pipes (fender piles) 3,000 t
Tension piles 2,300 t
In-situ driven concrete piles 1,300 pcs.
Reinforced concrete 32,000 m³
Rebars 3,500 t

Construction period:

1999 – 2000

2nd construction phase:

Total length 615 m
Quay wall 533 m
Head wall length:
South 82 m
North 59 m
Diaphragm slot d=1.20 m
suspension-supported 16,500 m²

Sheet-pile wall steel:

Installation elements 5,300 t
Land-side sheet pile apron 800 t
Steel pipes (fender piles) 2,300 t
Tension piles 1,100 t
In-situ driven concrete piles 800 pcs.
Reinforced concrete 20,000 m³
Rebars 2,400 t

Construction period:

2001 – 2002

Competence in maritime construction

The team used coupled, 2.3-meter-wide installation elements consisting of bearing piles and intermediate piles. At the end of 2002, we handed over the second construction phase on schedule. Both construction projects were followed by additional contracts from the operator, HHLA, and completed in record time.

The quay wall of the Altenwerder container terminal was executed as a combined sheet-pile wall with fender piles, in-situ driven concrete piles and raking piles. It provides four berths with a length of 350 meters each and carries 14 container bridges which each have a gauge of 35 meters and protrude some 60 meters over the seaside. Four super container vessels of the latest generation can be unloaded here simultaneously.

HOCHTIEF Construction AG

Civil Engineering and Marine Works

Eiffestraße 585
20537 Hamburg
Germany

Telefon: +49 40 21986-0
Telefax: +49 40 21986-200

www.hochtief-construction.com/cem-marine-works@hochtief.de

