



Mönkebude: defence against the Baltic Sea. Steel sheet pile walls harmonising with the landscape.

The coast of Mecklenburg-Western Pomerania is 1712 km long; 354 km of that borders the sea, 1358 km lagoons. When we compare the maps of 100 years ago with those of today, we see that not only has the shape of the coast changed, but also that the land mass has retreated somewhat.

Sheet pile walls can be used in a variety of ways for providing flood defences, especially when communities around coastal lagoons have to be protected against storm tides. Responsible for this is the State Agency for Environment & Nature (StALU), which acts on behalf of the Mecklenburg-Western Pomerania Environment Ministry.

In principle, sheet pile walls can provide sealing, stabilising and also loadbearing functions. They are used successfully for upgrading

dykes and in autonomous combinations with dyke sections and demountable flood protection elements, e.g. at dyke openings.

Wherever space is at a premium, building a dyke would result in the loss of valuable biotopes and short construction times are necessary, steel sheet pile walls represent an excellent solution.

An additional permanent elastic seal in the interlocks, using the HOESCH system, plus a polyurethane coating (film thickness 320 µm) on the visible part of the wall increase the durability of the structure. Furthermore, a coloured coating improves the appearance of the plain steel sheet pile wall, allowing it to harmonise better with the landscape. The many years of experience with the seemingly placid waters of Szczecin Lagoon urge caution when it comes to flood defences for the nearby settlements. With a high

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level in the River Oder, but also in the case of a strong north-east wind, the water level rises to such an extent that the popular tourist destinations of Ueckermünde und Mönkebude can suddenly find themselves flooded. Such dangers have now been averted thanks to the construction of extensive flood defences.

Flood defences in Mönkebude on Szczecin Lagoon.

For reasons of space, it was decided to provide flood defences in the centre of the holiday resort of Mönkebude in the form of a sheet pile wall over a length of approx. 400 m. The sheet pile wall consisting of 5.50 m long LARSEN 603K sections projects between 1.50 and 2.20 m out of the ground and is provided with a four-coat protective paint system consisting of UV-resistant materials. This coloured coating has a total thickness of 320 µm and extends down to 80 cm below ground level.

A green final coat means that the wall fits in well with the shrubbery planted directly in front of the wall and is hardly noticeable. The patented HOESCH interlock sealing system guarantees an impervious wall.

In order to reduce noise levels, and because the sheet pile wall is very close to existing buildings, the sheet piles were installed with a GIKEN F3 press. One opening for vehicles and another for pedestrians guarantees access to the beach, the campsite and the port facilities. When there is a risk of flooding, these openings in the flood defences are closed off reliably with a double row of TKR stop logs. The Dortmund-based Hartmann company carried out the preparatory work on the sheet piles (profiled seals and SIKA protective paint system). Thyssen Krupp GfT Bautechnik, Rostock Branch, supplied approx. 250 t of HOESCH sheet piles, the TKR stop log system and the sheet pile pressing plant.

HOESCH sheet pile walls were installed to form further flood defences at Kühlungsborn (stabilising the base of the promenade), at Dassower Lake, at Heiligendamm (Conventer Lake) and at the outfall works for the Stromgraben in Graal-Müritz on the Baltic Sea coast.

Facts & figures.

Client:	Federal state of Mecklenburg-Western Pomerania
Developer:	State Agency for Environment & Nature (STAUN), Ueckermünde
Planning:	Prowa Eppler Ingenieurgesellschaft mbH, Stralsund/Greifswald
Contractor:	Colcrete- von Essen GmbH & Co.KG, Niederlassung Ueckermünde
Materials supplier:	ThyssenKrupp GfT Bautechnik, Rostock Branch
Materials:	sheet pile wall L603K single pile, grade S270GP, 5.50m long; embedment depth 4 m for 1.50 m projection above ground level (= HN +2.50 m as highest design water level) approx. 250 t sheet piles fitted with HOESCH seals (PU lips)
Flood defences:	Double stop log closure with the TKR system SH100
Plant:	Pressed installation with pile-supported Giken type F3 press
Project duration:	Spring 2006
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