

# Secutex® HB - Pile dwellings at Rapperswil-Jona

World cultural heritage protection

- **Project Name**  
Pile dwellings at Rapperswil-Jona
- **Client**  
Archaeology Section of the Canton of St. Gallen
- **Project management**  
HSR University of Applied Sciences, Rapperswil, Competence centre for plastics in construction KIB
- **Naue's sales partner**  
SYTEC Bausysteme AG
- **Contractor**  
Kibag Bauleistungen AG
- **Product**  
Secutex® HB





## Challenge

The pile dwellings in upper Lake Zurich, Switzerland originated 4000 years ago and were awarded the status of a UNESCO World Heritage Site in 2011. Natural erosion and the turbulence created by the busy shipping were endangering these unique structures in the shallow water zone. With the help of Secutex® HB geotextile filter and protection sand mats they were secured for posterity.

Prehistoric buildings are an irreplaceable source for research work. At Lake Zurich it became clear that only if we are successful in protecting these sites in the long term, future researchers will also have a chance of using new technologies to shed further light on the history of mankind.

## Solution

The archaeologists of the Canton of St. Gallen were therefore looking for ways to secure the pile dwellings over an area of 1,400m<sup>2</sup> in the long term without damaging delicate objects in the lake mud. After numerous investigations and loading tests the solution was found at SYTEC Bausysteme AG, the Swiss partner of Naue GmbH & Co. KG: the Secutex® HB sand mat. This geocomposite material with its geotextile components and a sand ballast layer was easily placed directly from the roll over the areas to be protected. It was then covered with 20cm of gravel.

Secutex® HB is a fibre-reinforced, polypropylene sand mat which is mechanically bonded over its entire surface area. The sand entrapped between two nonwovens is held firmly in place by the fibres. The high specific weight of the encapsulated sand layer is responsible for a good sink behaviour, enabling speedy, controlled placing under water and ensuring high positional stability. In addition, the Secutex® HB sand mat has excellent filter characteristics. This geocomposite was originally developed for the prevention of the underwater erosion of slopes and of river, lake and seabeds, especially under turbulent flow conditions.

Thanks to an impressive range of products for a wide variety of applications, and the expertise and experience acquired over many years with countless projects, SYTEC was able to propose a practically feasible and affordable solution for this unusual challenge.