

Aqua Barrier – A Pallet Barrier Flood Fighting System

What the innovation is?

A simple technique for protection against floodwater up to 1 meter deep using standard pallets, a metal support, and a waterproof geomembrane. The inexpensive pallets are designed to withstand heavy loads and are available worldwide. They may be rented or purchased and returned after use. The pallet supports are made of galvanized steel sheet and can be folded together to minimize storage space. They require no special anchorages. Because the pallet is inclined, the support is anchored through friction and pressure on the ground. Today prototypes are developed for extension to water depth 1.80 meter (6 ft), equivalent to two pallets on top of each other. The same system can also be used for building temporary basins for contaminated water, slurries, fishing ponds etc.

Why it is innovative?

The major advantage with the system is its simplicity. Pallets are available almost everywhere and are quickly assembled with little effort. Only a small space is required for storing the metal supports and plastic membrane. One pallet plus one support are equal to the use of approximately 1.5 tons of sand, when protecting from flood by sandbagging. The pallet barrier is erected about 50 times quicker than sandbagging. The support and pallet can be reused many times. Assembly and disassembly are simple. No heavy machines are required for erecting the barrier. The system anchors itself, which make it so quick and easy to erect.

What it changed or replace?

It replaced the use of sandbagging for protection of floods. It changed the strategy for flood fighters, as it is 50 times quicker to erect. It can protect buildings and properties that prior to this invention had to be abandoned during floods.

Where and when it originated, has been used, and is expected to be used in the future?

The system was invented by Sten-Magnus Kullberg, Linköping, Sweden, during summer 1995 after big floods in Germany, Holland, and Sweden. In patent was applied for in August. During 1995 and beginning of 1996 it was developed to what we have today. The first delivery was to Holland 1996 and Sweden 1996. Next year, 1997, was the first delivery to Germany. The pallet barrier has been in real flood fights and protected property as follows: August 1998 – Åsele, Sweden; September 1998 – De Vlieer outside Den Hauge, Holland; February 1999 — Cologne, Germany; June 1999 – Konstanz, Germany; July 2000 – Bollnäs/Ovanåker, Sweden, August 2000 – Åsele, Sweden. A total of 6132 pallet supports have now been sold in Sweden, Holland, and Germany. The system can be used in every country where floods exist.

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PALLET BARRIER - protects buildings and property

During 1998 and 1999 the PALLET BARRIER flood fighting system was tested in tough rescue situations. The barriers were assembled in only a few hours and withstood the flood water.

Speed is the essence of success!
This was one of the houses being saved.



ÅSELE



THE HAGUE



COLOGNE



KONSTANZ



=



+



+



Pallet barrier

"Das wunder von Rodenkirchen!"

... instead of sandbags



In Cologne, 500 metres of Pallet Barrier were assembled in a few hours during a day in February 1999 when the Rhine river broke its banks. The barrier protected the district of Rodenkirchen and its 3300 inhabitants for five days and nights. The effectiveness of the system was amazing. For the first time in the history of Cologne an entire city district had been saved.

Had sandbags been used, some 58000 sandbags of 20 litres (totally 1100 tons) would have been needed. An impossible equation according to the city engineers of Cologne, who on former occasions helplessly looked on as flooding water damaged houses and homes.