

The background is a faded, grayscale photograph showing flood control equipment, including large sandbags and a worker in a white protective suit and helmet. A traffic light is visible in the upper right.

AQUARIWA

flood control

... easy, safe & flexible!

Flooding

Rising water gauges after severe weather conditions cause extensive flooding to exposed areas.

Flood protection activities sometimes less than 24 hours.

Flooding in
Frankfurt am Main
up to 1 meter in
housing areas and
commercial zones



Floods: An Operational View

Relief units are facing recurrent problems after torrential rain, snowmelt or thunderstorms that often end in extensive floods:

- advance warning usually comes less than 48 hours to take appropriate countermeasures
- widespread flooding means to deal with a large number of places of assignment simultaneously
- flood peak cannot be exactly determined beforehand
- availability of human and technical resources is a major challenge in a large-scale disaster
- additional stress for operational staff by adverse weather conditions

Floods: Defence by Sandbags

Piling up sandbags by hand to reinforce levees or to protect buildings is still the most common strategy to fight floods:

- + cheap bag material, sufficient sand supply
- + flexible shape of barriers, high mobility
- limited height of sandbag constructions (about 30 – 40 cm) – “race against time”
- time-consuming and labour-intensive set-up and dismantling of sandbag barriers
- difficult to dispose of moist sand
- effective logistics need large storage, processing and transport facilities

If time is running out...



AQUARIWA Principle

The innovative and trademarked AQUARIWA method fills a decisive gap in the frame of mobile flood control systems. The innovative and fully trademarked AQUARIWA system provides a mobile flood protection system. Unlike traditional systems, it requires minimal manpower and material, and can be mobilised and erected in a short period of time, without the need for tools and equipment. No technical skills are required, the system can be easily assembled by untrained volunteers.

The Solution

The basic principle is a sheet, that is formed into a cylinder. The sheet can be manufactured in different sizes, depending on the requirements of the protection level.



Easiest Assembly



The Locking System



Cylinders are locked tool-free



The bottom of the cylinders



The Waterbag



Setting up a cylinder takes only a minute!



Filling up

Filling up
the cylinders
is done with
water
pumps and
hoses



The last step

The protective film seals the system and in addition prevents the penetration of water into the soil



The Advantage

Each AQUARIWA-Cylinder will replace up to 300 sandbags!

Set up and break down will be learned by anyone within minutes!

Storage

Storage will require only a minimum of space.
The sheets can be stored upright side by side or
staked easily.
A container will hold up to 1.000 m!

Transport

A small truck will take up to 300 sheets, which represents up to 450 m flood protection.



Easy Storage and Transport Solution



Guaranteed Stability

The system was tested far beyond the guaranteed protection height.



Secure Buffer

Tests showed
that the system
is able to resist
floods far
beyond the
guaranteed
protection
heights



The Line

Every line is possible! The cylinders only need to be in touch with each other



Stress Test

Hitting the system by boat does not affect the stability!



The First Mission

First operation in
Frankfurt/Oder,
May 2010 to save
the
neighbourhood
„Winterhafen“



High stability despite rising terrain!



Frankfurt/Oder

The flood didn't come!

An embankment in Poland broke!

But still the AQUARIWA System showed it's remarkable effort.
100 meters of AQUARIWA System where removed within one
hour!

Raising an Embankment



Raising an Embankment



Flood Frankfurt/Main Jan. 2011



Flood Frankfurt/Main Jan. 2011



Test in Cologne, January 2012



Gartow, June 2013

AQUARIWA saved the village of Gartow, Lower Saxony (Germany)

Gartow 2013



Gartow 2013



Gartow 2013



Gartow 2013



Gartow 2013



Applications

The use of AQUARIWA system is not only limited to the traditional flood protection. There are a large number of other applications.

Accumulate a creek

Due to the variability of the system, it is easy to accumulate a creek in a short time.



Benefits

The extremely flexible application is a crucial advantage of the AQUARIWA flood barrier. For a protection level up to 100 cm, filling with water is entirely sufficient.

Being filled with sand or gravel, the system's protection level will even reach the full height of the cylinder at maximum stability.

Should you face a higher peak level than expected and prepared for – just replace water e.g. by sand or gravel and gain extra up to 50 cm plus the option to have an additional sandbag layer on top.

Still not sufficient? Setup a second line of cylinders in parallel, filled with sand or gravel and put a third line on top!

If Floods raise even higher!

With two rows of cylinders holding sand or soil, protection heights can be doubled, or even tripled!



Further Applications

Other, more unusual applications for the AQUARIWA system include the construction of a water-reticulation system for use by fire brigades, the control of contaminated water run-off, or even as a temporary water storage facility.

The draining of flooded areas is also possible, since the open, netted bottom of the cylinders prevents them from “floating” and thus allows them to be placed in already flooded areas. Once the cylinders are filled, the enclosed flooded area can then be pumped dry.

Static loaded tests



Set up of a bulk container



Further Advantage

While other mobile flood barriers are susceptible to sabotage, AQUARIWA flood control – due to its components - is extremely resistant to mechanical damage and very enduring.

So it comes with a guarantee of 5 years!

“After the flood is before the flood.” Simply empty and dismantle the cylinders, pile the room-saving plates - as many as 800 up to 900 fit in a 40' container! – and simply re-use them next time!

Economic Efficiency

Low storage and transport costs

Warranty 5 years

The system will last at least 10 years, if not more!

Prices between \$ 239,- and \$ 599,- according to length and protection heights.

Perspectives

Thank you for your interest in our products!

New ideas how to expand the field of application for AQUARIWA flood control arise every day – we promise to continue research and practical development for our customers to make the best out of their investment.

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