FLOODCONTROL
INTERNATIONAL

SELF CLOSING FLOOD BARRIERS

The Self Closing Flood Barrier has been in use globally since 1998. Its design uses the approaching floodwaters to automatically raise the barrier. The automatic operation, along with its minimal footprint with no need for steps or ramps makes this type of defence ideal for unmanned sites, for where aesthetic considerations mean that a permanent barrier is not acceptable, or where there would be insufficient warning and manpower to use manually installed barriers.
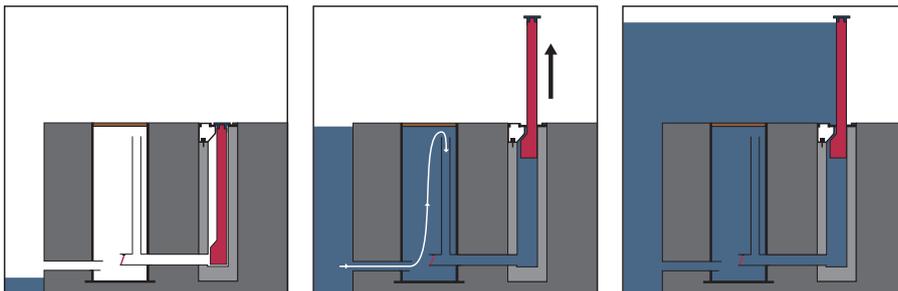
Single barriers are available up to 10m in length and 2.5m in height. Multiple units can be linked together to create long runs where required, with permanent or removable intermediate posts.

OPERATION OVERVIEW

The barrier usually resides below ground in a vertical position within a steel or concrete trough. The barrier consists of a rigid foam core and a GRP outerlayer. When floodwater rises to a pre-determined level, the water spills into service pit and then through a pipe into the trough and causes the barrier to float and raise fully. When the trough is filled, an angled support block locks the barrier into place, sealing it and making it watertight. The barrier is now fully effective and watertight to its full height.

As the floodwater recedes, the barrier lowers to its resting position again. The trough can be 'pumped out' also to lower the barrier before the adjacent groundwater levels recede fully.

USES

The Self Closing Flood Barrier can be used to protect areas such as:

- Underground garages
- Riverside defences
- Coastal defences
- Railway defences
- Unmanned sites, such as utility stations
- Building openings such as roller shutter doors.

BENEFITS

- Uses the floodwater itself to operate the barrier - no manual intervention required.
- No storage required - the barriers recesses fully into the ground when not in use.
- Fast action - with a fast flood the barrier will close within a minute.
- Easy to test - the pit can be filled with water which automatically lifts the barrier ready for inspection.
- Unlimited lengths - from 1m to 1km or more.

Permanent Flood Protection - Barriers rise as the floodwaters rise.

SPECIFICATION

Initially we require site plans, cross sections and the flood heights required, as well as a brief to describe the proposed operation of the barrier. It may be prudent for one of our engineers to attend site to discuss the proposed barrier to ensure that the correct barrier is specified. The location of buried services is vital and should be identified before the project has begun. The barrier needs to be connected to a drainage system; gravity drainage is simplest, or the barriers can be specified with pumped removal of floodwater.

REQUIREMENTS

- A site survey is required to obtain dimensions and flood heights. Also, the location of buried services needs to be determined.
- The barriers need to be connected to a drainage system; either by gravity or by pumped removal of floodwater.

CONFIGURATIONS

The Self Closing Flood Barrier configuration is in straight lengths from 1m with the overall flood barrier wall designed into suitable section lengths of up to 10m each as standard. Sections can be linked together using angled guide-posts for changes in direction.

Trough
There are two types of trough available in which the floating wall operates:

(1) Steel:
- utilised for single barriers up to 7m in length.
- Mild steel Grade S235 to BS EN 10025-2: 2004.
- Cathodic Protection designed depending on water type
- Four layer paint protection system applied

(2) Concrete: can be precast or cast in-situ to any length.

Service Pit
The invert of the service pit must be lower than the trough. The connection to the storm water drainage is for removing the floodwater only and uses a stop-valve to prevent water entering the trough before the trigger level is reached. If the storm water drainage is shallower than the service pit, a pump is required to empty the trough and pit post-flooding. An electrical connection will be required if this is the case.