FloodWarden TECH
by Pietrucha

Automatic flood barriers

STANDARD / XXL / HEAVY
Three types of self-raising barriers and a wide range of customization possibilities.

- Tightness and reliability in operation
- Safety and convenience of use
- Protection and situational monitoring
- Wide range of customization options
- Unrestricted access to pedestrian and vehicle routes

As cities expand, urban development is encompassing more and more unfavorable terrain, including plots where the groundwater levels are high or those located near water reservoirs.

As a result, the existing or planned buildings are located at the same level as the adjacent water reservoirs or watercourses or at groundwater level. In such cases a heavy rainfall may result in rapid water rise and flooding, which would destroy the property and put human life and health at risk.

When developing new investments located in areas with high groundwater levels or in the immediate vicinity of natural reservoirs or watercourses, it is worth to take into account the risks associated with uncontrolled water activity.

In instances when the planned infrastructure is to be located in the flood risk zone, including appropriate flood monitoring and prevention systems, will facilitate the process of obtaining the decision on the development conditions.

When developing infrastructure located in the flood risk zone, consider the advantages of our FloodWarden Tech system of automatic flood barriers.

The FloodWarden Tech system helps prevent uncontrolled flooding and allows monitoring of the water level at the water courses or reservoirs that could be the source of flooding.

FloodWarden Tech protects sites and buildings from flooding in particularly critical areas, such as communication routes, entrances to underground car parks, warehouses, cellars, etc., while ensuring full and undisturbed accessibility both for pedestrian and vehicle traffic.

Made to fit

- FloodWarden Tech comprises three basic types of barriers which may be further adjusted in terms of dimensions and operating mode to comply with the specific needs of the customer and the property.
- Individual customization of control cabinets, power supply, monitoring and signaling system is also possible.
- Integration with complex property management systems.

Manufactured in the EU, guaranteed quality

- The FloodWarden Tech system is designed and manufactured in accordance with best standards of quality and safety.
- Each barrier leaving our factory undergoes rigorous quality tests and performance drills.

Reliable operation even in the most demanding conditions

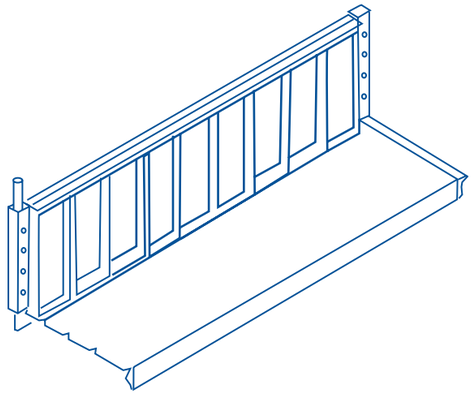
- Each activation of the FloodWarden Tech barriers triggers the audio-visual alerting system.
- To ensure infallible operation in the event of a power shortage or failure, each barrier is equipped with an independent system of actuators, a hydraulic unit and an emergency manual lifting system.
- The specially designed VRG seal guarantees tightness of the barrier. The entire system ultimately tightens under the water pressure.
- In non-emergency periods, the sealing and hydraulic system is protected with special covers.

FLOOD BARRIERS

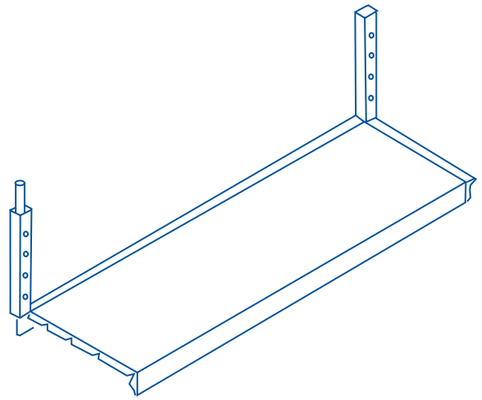
Technical specification

The FloodWarden Tech automatic flood barriers complement the comprehensive FloodWarden offer which also includes composite and aluminum barriers FloodWarden LITE and FloodWarden PRO.

FloodWarden barriers ensure undisturbed pedestrian and vehicular traffic during periods when water poses no threat.



CLOSED BARRIER

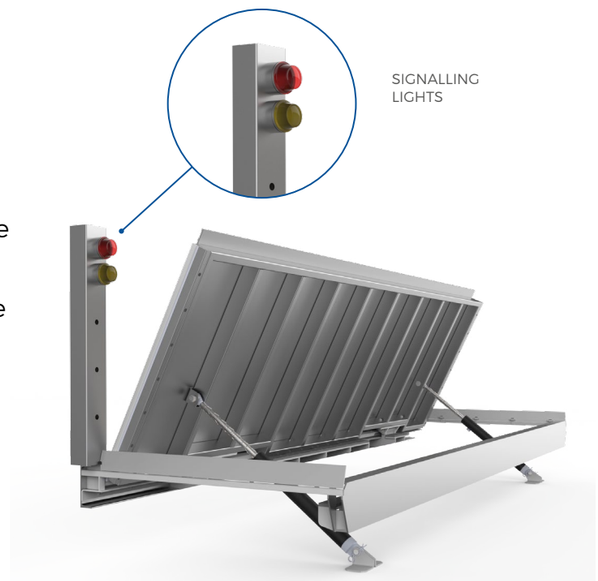


OPEN BARRIER

In the event of a flood threat, the sensor system automatically triggers the barrier closing protocol.

The closing of the barrier and the red signal are always preceded by an orange signal indicating a flood threat.

Each barrier is equipped with a separate alerting scheme installed at the steel profile.



OPTIONAL EQUIPMENT

Sensors monitoring the current status of surface water and automatic emergency self-lifting of the barrier.

Motion sensors and weight sensors, which prevent the barrier from lifting when a vehicle is driving-by or parking or a pedestrian crossing.

Emergency lever, allowing manual lifting of the barrier.

Platform grate, security protecting the recess when the barrier is raised.

Wireless installation, designed for continuous monitoring of the current position of the barrier.

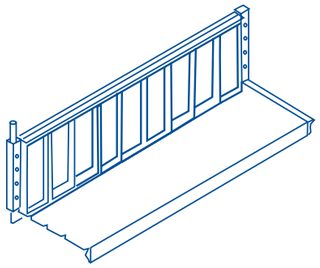
- Barriers designed and manufactured according to the highest quality norms and standards.
- Frame structure lifted by a dedicated independent hydraulic system.
- 120 seconds is the maximum time required for all barriers to fully close.
- The VRG seal ensures tightness of the barrier. The system is ultimately tightened under the water pressure. Special covers protect the sealing elements and the hydraulic mechanism during non-emergency periods.
- The current status of the barriers is monitored by end switches. Information is displayed on the light panel installed in the control room of the Building Management System (BMS).
- The working surface of the barrier is made of non-slip, stainless steel checkered plate. The color scheme of the visible external elements is adapted to match the requirements of the project.

- In special cases, e.g. during repairs and maintenance, each barrier can be closed individually using buttons on the control and distribution boxes installed at the unit casing.
- In the event of a power failure, the hydraulic installation is equipped with PMI type manual pumps. The units are installed in steel cabinets and only trained personnel have access to them.

Three types of barriers with the possibility of further customization

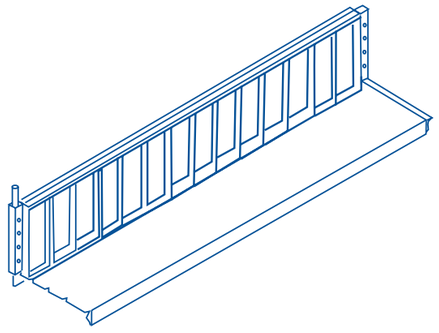
The FloodWarden Tech system consists of three basic models of flood barriers, which may be additionally adapted to comply with the individual requirements of the property and its surroundings.

The barriers may be fully customized in terms of their dimensions and purpose. Specific system elements may be tailor-made, including control can power supply cabinets, monitoring equipment and signaling sensors. FloodWarden Tech can be integrated into the property management systems.



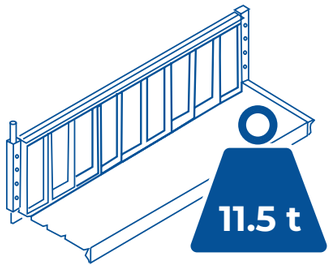
FLOODWARDEN TECH STANDARD

Dimensions	maximum length: 6000 mm maximum height: 2000 mm
Purpose	pedestrian, vehicular traffic
Maximum load	vehicles with a permissible total mass of up to 3.5 t
Barrier coating (ral 7035)	platform – stainless steel



FLOODWARDEN TECH XXL

Dimensions	maximum length: 15000 mm maximum height: 2000 mm
Purpose	pedestrian, vehicular traffic
Maximum load	vehicles with a permissible total mass of up to 3.5 t
Barrier coating (ral 7035)	platform – stainless steel

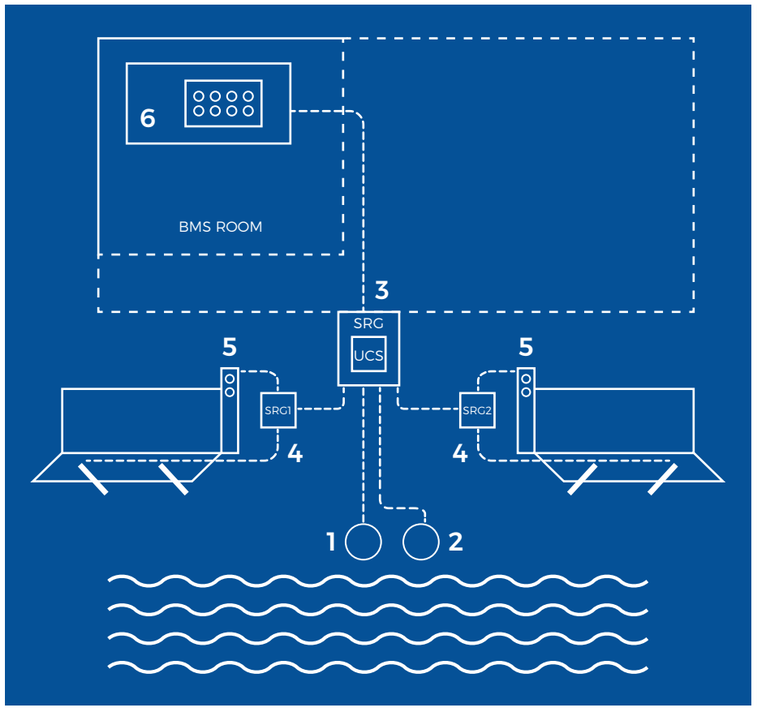


FLOODWARDEN TECH HEAVY

Dimensions	maximum length: 15000 mm maximum height: 2000 mm
Purpose	pedestrian, vehicular traffic
Maximum load	vehicles with a permissible single drive axle load of up to 11.5 t
Barrier coating (ral 7035)	platform – stainless steel

How does FloodWarden Tech barriers work?

1. The water level is monitored with measuring probes installed in the immediate vicinity of the water.
2. If the water level reaches the emergency level, the measuring probe SP-0 alerts the main controller, then to the BMS room – FLOOD WARNING
3. As the water level rises, when the emergency level is exceeded – probe SP-1 / 2 activates the controller which sends an emergency alert to the BMS room – **FLOOD EMERGENCY**
4. At this point, the flood barrier is activated with an audio-visual signal and the message: BARRIER LIFTING
5. The position of the barriers is continuously monitored by end switches and the controller with all alerts displayed on the signaling panel, usually installed in the BMS room.
6. The system is ultimately sealed under the pressure of water.
7. The water level drops below the emergency level.
8. The barrier automatically lowers to its initial position.



OPERATION FLOW CHART

1|2 SP1/SP2 measuring probes

3 the main control and distribution box with CCS – Central Control System

4 distribution and control box contains:
- SRG 1/2
- hydraulic pump

5 voice signalling unit, visual signalling unit

6 SP – signalling panel (installed in the BMS room)

Flood barrier installation

A FloodWarden Tech barrier is installed in specially prepared concrete mounting recesses.

THE STEEL STRUCTURE IS MOUNTED USING EXPANSION ANCHORS.

THE MOBILE PLATFORM IS INSTALLED.

THE BARRIER IN MOUNTED IN THE RECESS.

THE BARRIER DURING INSTALLATION.

MAIN SRG CABINET WITH VISIBLE CONDUIT COVER CONNECTING TO THE BUILDING.

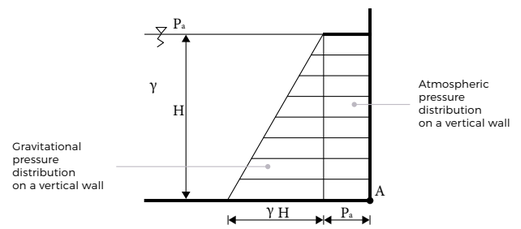
STEEL CABINET WITH POWER AND CONTROL SYSTEMS.

CONTROL PANEL IN THE BMS ROOM WITH BARRIERS ON A STAND-BY MODE.

EMERGENCY LIGHTING AND END SWITCH FOR BARRIER CLOSURE.

Fatigue strength up to maximum stress*

*134 MPa – for STANDARD barrier
(selecting the appropriate fatigue category).
Results are presented in a linear graph according to the PN-EN 1993-1-9:2007/NA:2010 standard.

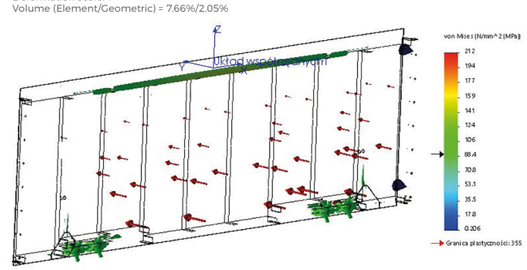


PRESSURE DISTRIBUTION ON THE BARRIER SURFACE

CERTIFICATES

FloodWarden Tech barriers comply with the Factory Production Control System and are manufactured and distributed according to the ISO standards:
ISO 9001:2015, ISO 45001:2018,
ISO 45001:2018

ISO 9001
LL-C (Certification)



AREA OF HIGHEST STRESS

Completed projects

FLOODWARDEN TECH STANDARD
LUBLIN, POLAND

FLOODWARDEN TECH XXL
LUBLIN, POLAND

Our FloodWarden composite, aluminum and automatic barriers compement one another. As a result, we are able to offer comprehensive and bespoke flood protection solutions at the best price, which are made to fit individual project requirements.

The Pietrucha Group – technology, cuttindg-edge materials, innovation. A family company since 1960.

The Pietrucha Group is a Polish family company with 60-years' history, specializing in the manufacturing and distribution of cutting-edge environmentally friendly civil engineering solutions used worldwide in the sector of infrastructure and in hydrotechnical projects indented to mitigate the consequences of climate change, especially draught prevention and flood protection.

Our comprehensive offer comprises vinyl, aluminium, automatic and semi-automatic systems. The quality and efficiency of the FloodWarden system has been proved for many years when battling the forces of nature all over the world.

FloodWarden TECH by Pietrucha

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