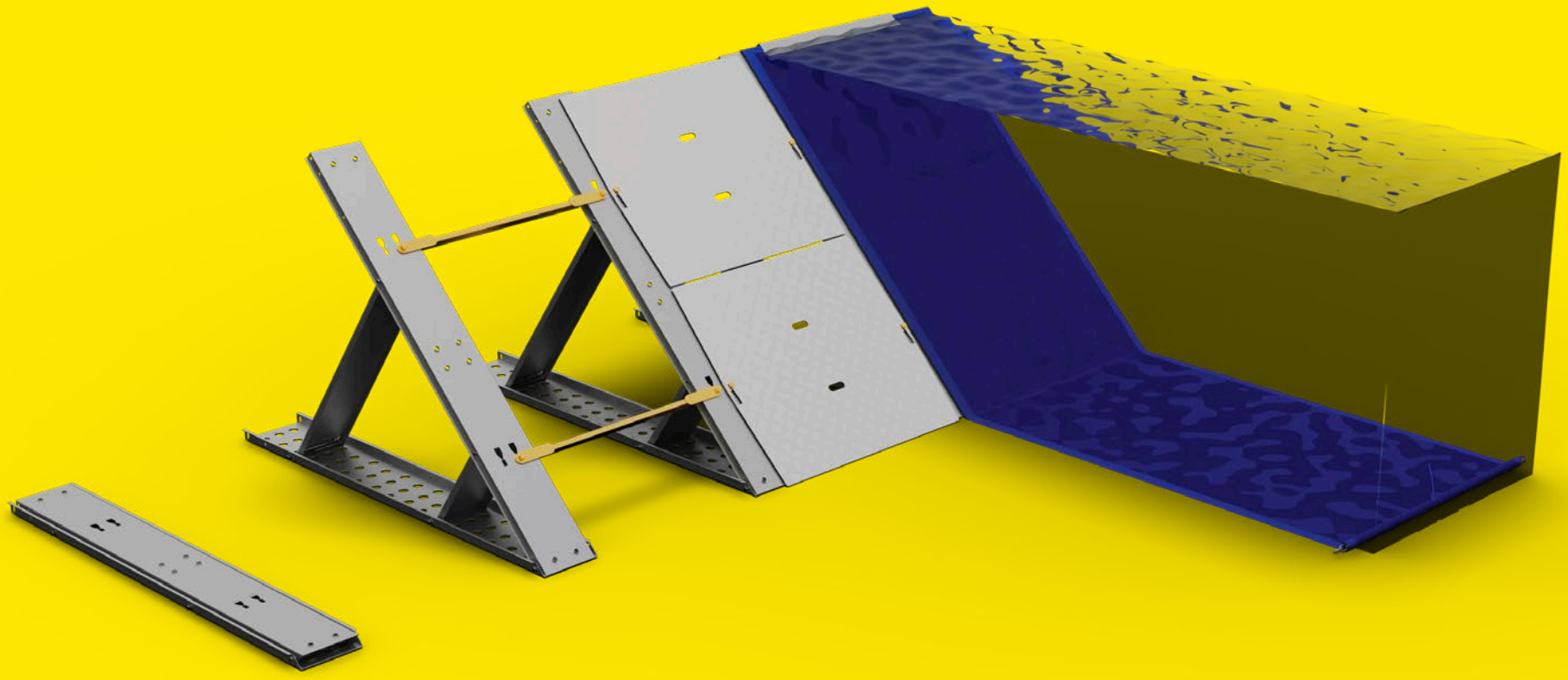
GEODESIGN BARRIERS

Heavy Duty Flood Barrier

Product brochure



BSI Kitemark License PAS1188-2:2014

FM Approval ANSI 2510-2020

ISO 9001-2015, ISO 14001-2015

Easy setup. Extreme capacity.

The Heavy Duty Flood Barrier from Geodesign is engineered to withstand extreme loads under the most challenging conditions. Despite its robust characteristics, the installation process is quick, easy, and requires no tools or machinery.

1

PLACE, UNFOLD & LOCK STEEL SUPPORTS

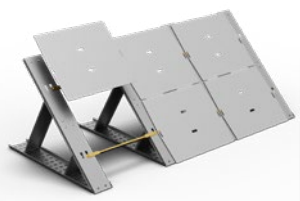
Place the frames 1.22 m apart to form your intended barrier line. Unfold the a-frame and secure the upright position with the snap lock.

2

CONNECT STEEL SUPPORTS USING LINK BARS

Attach the Link Bars to the frames by sliding them into the self-locking slots.

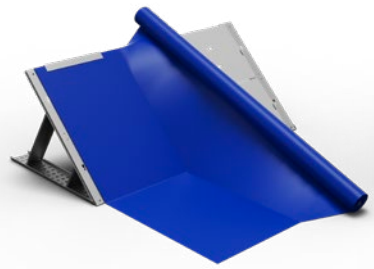
3



MOUNT ALUMINUM PANEL

Mount the Aluminum Panels by sliding the key hole cut outs over the protruding strips on the Link Bars.

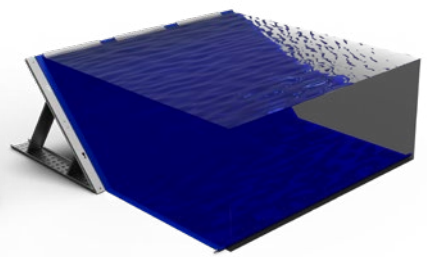
4



LINE WITH MEMBRANE

Roll out the poly membrane along the barrier and come onto the liner on the face of the barrier. Add chains as ballast to manage windy conditions.

5



ANCHORED WITH WATER

Allow water to come onto the liner and the face of the barrier and let it anchor itself using the forces exerted by the flood water.


JDM
ACCORD

Design Features

The Heavy Duty Flood Barrier consists of a-frame metal supports, steel linkbars and marine grade aluminum alloy plates, lined with a poly membrane which is fixed and weighted down by clips, chains and zip ties. The first version of this barrier was used to fight floods over 25 years ago and has since evolved, through continuous dialogue between clients and engineers, into the top notch flood protection tool it is today.

The Heavy-Duty Barrier is manufactured in high-strength steel from SSAB, Sweden, and holds both the Kitemark for Flood Protection Equipment and the FM Approval for Flood Abatement Products.

ANCHOR COLLARS WITH POINTS

Protruding steel collars underneath the bottom beam to establish a grip and increase friction between the self-anchored barrier and the ground surface.

SLIDE-AND-LOCK FUNCTION

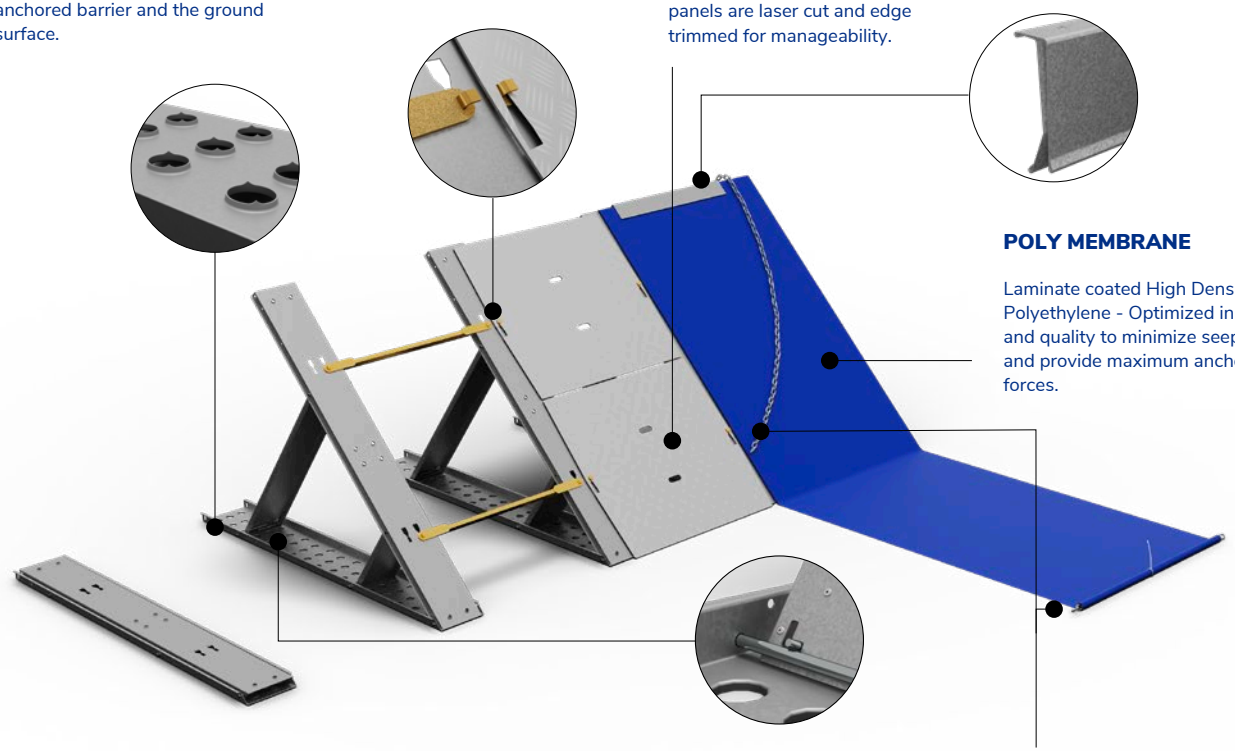
Smart and innovative solution to speed up assembly and enhance flexibility. No tools or other lose parts needed.

ALUMINUM PANEL

Corrosion resistant aluminum tread plate for the ultimate combination of strength, durability, and flexibility. All panels are laser cut and edge trimmed for manageability.

PANEL CLIP

Fixates the liner and strengthens the structure.



POLY MEMBRANE

Laminate coated High Density Polyethylene - Optimized in size and quality to minimize seepage and provide maximum anchoring forces.

A-FRAME STEEL SUPPORTS

The barrier frames are collapsible and stackable for better usability and storage properties between floods. In their upright positions, the supporting beams transfer forces from the hydrostatic pressure to the friction-optimized bottom beam, thus increasing the barrier's stability as it absorbs more load.

ULTRA HIGH STRENGTH STEEL

All load-bearing components of the Industrial Barrier are manufactured in high strength and ultra high strength steel with micro-alloy elements. Both steels are hot-dip galvanized with a zinc coating to provide optimal corrosion protection.

SPRING-LOADED SNAP LOCK

Quick and easy snap-in-place lock to fixate the supporting beam in the right angle and prevent the structure from dispositioning in the event of any unforeseen impact to the barrier's dry side.

CHAINS - DIN 763

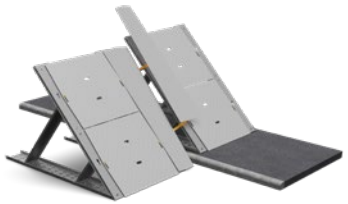
12 mm x 5 m Galvanized Steel Chain with carabiners as ballast and to weigh down the membrane before water has come onto the barrier.

Modular flexibility around obstacles.

With the convex trapezoid elements and telescopic link bars, the Heavy Duty Flood Barrier can be installed around or over almost any obstacle and in almost any terrain. It is seamlessly compatible with other Geodesign Barrier models, making it adjustable in height, and can connect to walls, foundations, or other barriers to fit all situations.

ADJUSTABLE LENGTH

The width of a section can be shortened to fit into the surrounding environment better. The trapezoid elements function as panels and can be turned vertically when needed.

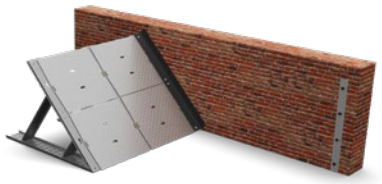


UNEVEN GROUND

Immovable obstacles, curbs and uneven ground are easily overcome by installing one support on either side of the challenging area, connecting them with the adjustable link bars and patching the section with the trapezoid elements. Drape with poly liner to seal.

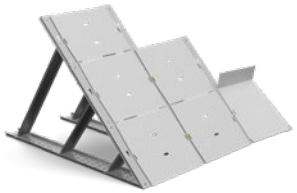
SHARP CORNERS

Inner and outer corners are swiftly assembled using telescopic link bars and trapezoid elements. The supports are deployed in a fan-shaped pattern and the barrier from 0 to 270 degrees.



CONNECTION TO WALL

Deploy a starting section with its side flush against the wall and seal the gap with the rubber strip. Use an adjustable section to tie into the approaching barrier if this is an endpoint. Build out from the wall if it is a starting point. Mount the steel batten board to hang the liner on the wall.



COMPATIBILITY

All Geodesign Flood Barrier models connect seamlessly to each other which allows for height variations to match with the needs determined by the topography.

EXTENDABLE

The Heavy Duty Flood Barrier can be extended with a 15 cm vertical add-on that fits all models.


W&J

5 different models. One unified family.

The Heavy Duty product family consists of five different models, based on the same sturdy design but with different dam heights. All models share the same link bars, have the same section widths and are easility combined to tailor to the needs of a site or situation.

C122	
Maximum water column:	1.22 m
Section width (ctc):	1.22 m
Setup time: (100 meter / 6 men)	50 min
Footprint with poly liner:	4.4 m
Barrier footprint:	1.8 m
Weight / section:	66.5 kg
Storage volume, weight: (One set 33 sections)	5.6 m³, 2.5 ton

C152	
Maximum water column:	1.52 m
Section width (ctc):	1.22 m
Setup time: (100 meter / 6 men)	55 min
Footprint with poly liner:	4.4 m
Barrier footprint:	2.2 m
Weight / section:	78.4 kg
Storage volume, weight: (One set 33 sections)	6.1 m³, 2.9 ton

C184	
Maximum water column:	1.84 m
Section width (ctc):	1.22 m
Setup time: (100 meter / 6 men)	1 h 25 min
Footprint with poly liner:	6.7 m
Barrier footprint:	2.7 m
Weight / section:	101.1 kg
Storage volume, weight: (One set 33 sections)	6.9 m³, 3.7 ton

C213	
Maximum water column:	2.13 m
Section width (ctc):	1.22 m
Setup time: (100 meter / 6 men)	1 h 45 min
Footprint with poly liner:	6.9 m
Barrier footprint:	3.1 m
Weight / section:	117 kg
Storage volume, weight: (One set 33 sections)	10.4 m³, 4.3 ton

C245	
Maximum water column:	2.45 m
Section width (ctc):	1.22 m
Setup time: (100 meter / 6 men)	2 h 10 min
Footprint with poly liner:	9.3 m
Barrier footprint:	3.7 m
Weight / section:	140.8 kg
Storage volume, weight: (One set 33 sections)	13.3 m³, 5.2 ton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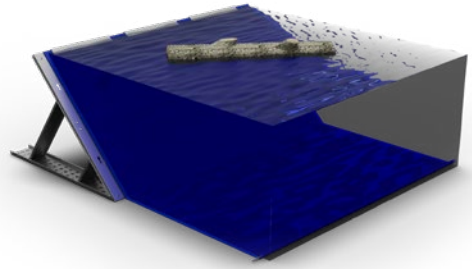
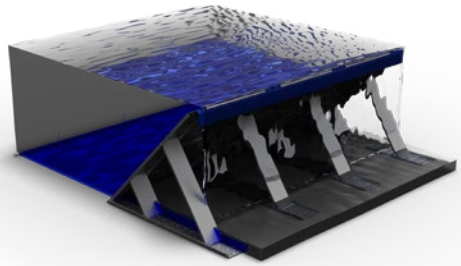
Stable under dynamic loads.

Floodwaters exert immense forces on structures that come in its way. The Heavy Duty Flood Barrier has been engineered to withstand these forces with a high factor of safety and to withstand additional unforeseen impacts from debris and high waves. The system is certified in Europe and the United States with documented lab testing of waves, overflow and heavy debris impacts at high velocity.



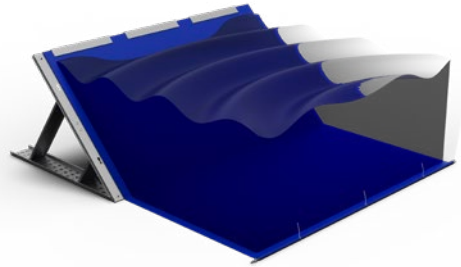
DEBRIS IMPACT

Heavy and sometimes sharp objects can float astray in uncontrolled flood waters. A temporary barrier needs to be able to handle these impacts as the failure to do so could result in catastrophic collapse and immediate danger. in order to guarantee Geodesign's Heavy Duty-models have been continuously lab-tested for these events which guarantees the safety of everyone and everything protected by the barrier.



OVERTOPPING

When the water is rising faster and higher than expected all flood walls, levees and temporary flood barriers are at risk of overtopping. The Heavy Duty-series from Geodesign is designed to handle overflowing water which can cause both land erosion and buoyancy effects on the barrier.



WAVES

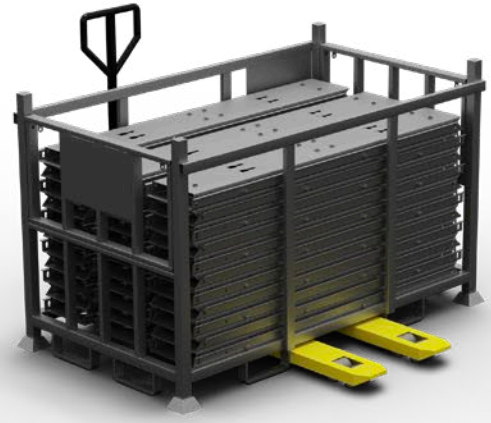
Large waves are often a risk factor in coastal flooding. Geodesign's Heavy Duty barrier has therefore gone through testing and certification that includes significant hydrodynamic loads in the form of waves over long periods of time. The sturdy construction and high factor of safety of the Heavy Duty-series ensures that these forces do not pose a threat to the barrier's stability.

IN-WATER INSTALLATION

The Heavy Duty-barrier can easily be installed in water. This a significant feature since an emerging flood then can be reversed in these areas and lead to valuable protection and openings of vital roads and other infrastructure. The weight of the steel elements and the smart interlocking fixtures make the assembly manageable in fully submerged conditions.

COMBI CRATE

Link bars
Panel clips
poly membrane
Chains



SUPPORT CRATE

C - Metal supports

ALU CRATE

Aluminum panel

Packed neatly in durable metal crates.

The logistical advantages of the Geodesign Flood Barriers saves money every day in storage and in every deployment through fewer transports to and from the flooded site. All barriers come flat packed in stackable steel crates with forklift pockets and side gates for easier packing and unpacking on site. The single items are light enough to be carried by two workers and each crate can be pulled with a manual forklift.

One set contains 33 sections of fully deployed Geodesign Flood Barrier (40 meter) and the parts are packed in three crates.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