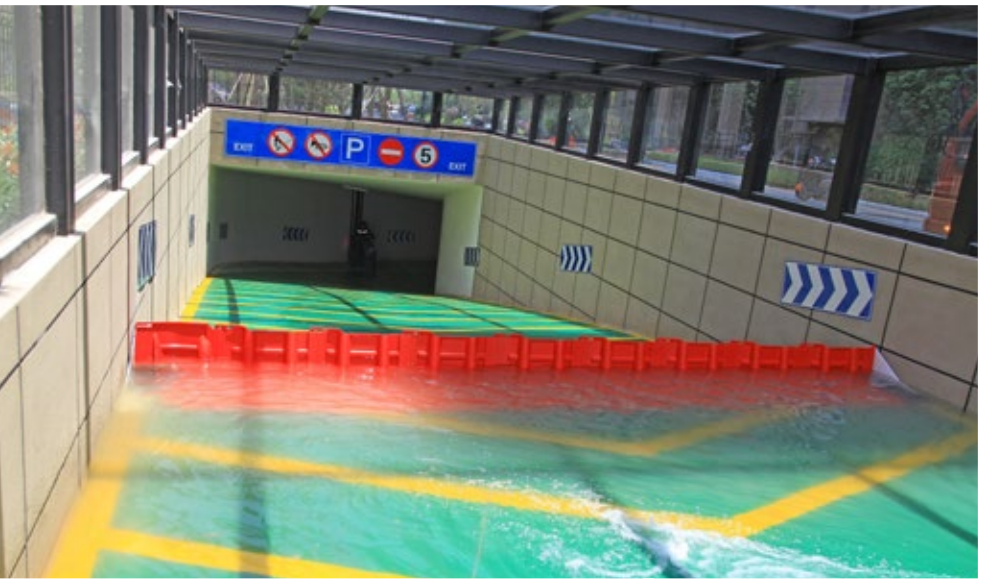
GARRISON
FLOOD CONTROL



Garrison Means Defense

Garrisons are stationed in towns to defend against attack. We like to think of ourselves as your garrison, helping you defend what's important to you against water damage.

www.garrisonflood.com

MAYIM MODULAR FLOOD BARRIER

HAMMERHEAD ALUMINUM FLOOD PLANKS

GUPPY WATER FILLED FLOOD TUBES

SERPENT INFLATABLE FLOOD CONTROL TUBES

minnow WATER ACTIVATED FLOOD BAGS

BELUGA CONCERTINA FLOOD PREVENTION SYSTEM

GARRISON TRADITIONAL SANDBAG

WHO WE ARE

Flooding is the most common natural disaster in the world. Every year there are homes, municipalities, commercial buildings and more that are damaged by severe flood threats resulting in billions of dollars in repairs.

Garrison® Flood Control provides a complete line of flood control products. This line of flood protection was established to meet the flood protection needs of property managers, homeowners, municipal public works departments, facility managers, and emergency service departments.

Throughout the career history of founder Arnon Rosan, he has provided emergency response products for disaster relief efforts with the Asian Tsunami and Hurricane's Katrina, Ike and Sandy. Garrison Flood Control has a history of assisting with severe weather events, so we have made it our goal to make flood protection solutions more available to those who need them.

Traditional solutions have not kept up with the severity of today's flood threats and growing climate change. Modern flooding requires modern solutions. Here at Garrison Flood Control, we are the modern solution to help you stay protected.

Our Mission

Protect

Protect the places and things that are most important

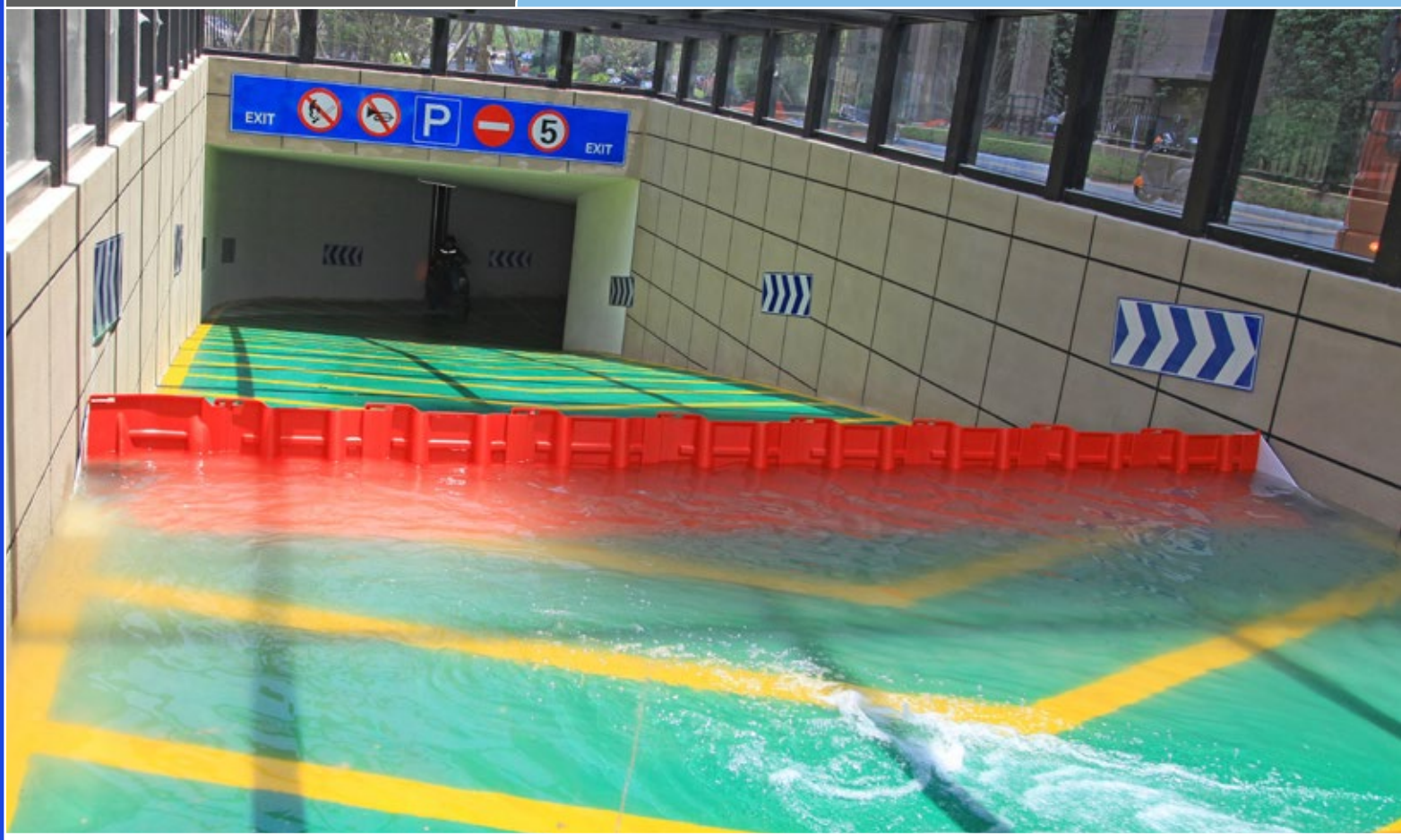
Block

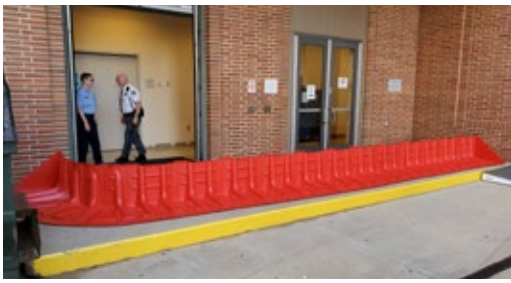
Stop flooding in its tracks with a variety of solutions

Prepare

Become a trusted resource for all things flood preparedness and protection

MAYIM
MODULAR FLOOD BARRIER





Modular Flood Control System

The Mayim™ Flood Control Barrier is an easy to deploy flood control system that installs quickly and stores compactly.

www.garrisonflood.com

Rapidly Deployable

Mayim Water Diversion Barriers are easily transported and can be installed by one person. It's unique connection system allows for dozens of barriers to be deployed in minutes.

Contains

Because the Mayim Barrier is ballasted by water, rising waters actually increase the ability of Mayim Barriers to hold back flood waters providing damming abilities.

Easy to Store

Mayim Water Diversion Barriers are designed to nest, saving space for transport and storage. When nested, each section takes up an added 3/4" of height and widens the nested stock by 3/4".

Durable

The Mayim Barrier is manufactured using high-quality ABS materials that is injection molded to create each solid flood barrier. All Mayim Barriers are UV protected against degradation and color fading.

The Mayim™ Flood Control Barrier is ideal for rerouting flood water away from important assets and holding back water from various types of floods. Sections are laid next to each other and connected using our unique insert and lock connection system. There is no fill material required.

The underside and overlaying edges of each Mayim Barrier has a foam seal that prevents slippage and stops water from penetrating beneath and in between barriers. The more water rises and ballasts the barriers, the stronger the seal.

When configured, Mayim Barriers can withstand water levels within 1" of its top surface. Mayim Barriers are relatively suited for level surfaces, but are flexible and will contour slightly to the varying ground below, particularly when ballasted by sandbags or water.

Mayim Barriers are not only suited to providing flood protection and water diversion, it is ideal for creating water and chemical containment pools (with a liner added).

The Mayim Barrier is simply hosed down after use and stacked for future deployment.

Why Protect Against Flooding With Mayim™ Flood Control Barriers?

- Compactly stores and takes up minimal space
- Easily deploy as mobile flood barriers when minutes matter the most
- Stop and redirect flood water to prevent damage
- Stands tall against rising water and a variety of flood types
- Supports the emergency flood plan for your building, facility and municipality
- No extra tools or materials required
- Flexible flood panel design allows for curving around obstacles or other building features
- Reusable for future flooding events

Parkland Flood Protection

Residential Property Flood Protection

Street Flooding Diversion Barrier & Containment

Flood Water Diversion Barrier

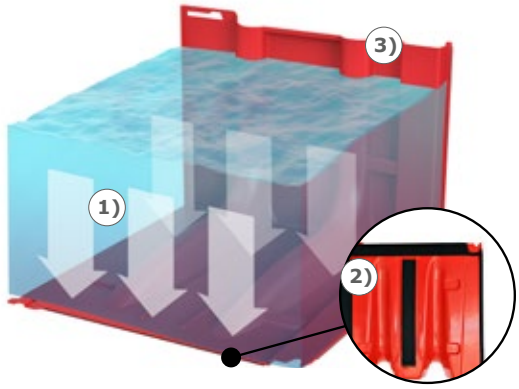
Property Perimeter Flood Protection

Sewer & Drain Overflow Containment

Warehouse Garage Flood Protection

Commercial Building Flood Prevention

Transit Flood Diversion Barrier



How Mayim™ Works

1) Pressure Creates Support
Mayim is anchored down in place through a direct correlation between flooding water pressure on the standing Mayim wall and bottom foundation. The bottom foundation allows for the diversion of leaking water which eliminates counter productive pressure.

2) Sealing Off Leakage
The foam seals on the front underside of Mayim helps to minimize potential leakage and seepage of water while deployed.

3) Damming Ability
The supporting wall of Mayim comes in 20in and 30in heights. The walls are designed to absorb water impact and support significant protection against severe flood threats.

Be Protected Against a Flood Disaster

Mayim portable flood barrier panels protect a variety of sites and applications such as:

- Complete Property Perimeter Protection
- Flood and Emergency Response
- Property and Facility Management
- Home and Office Perimeters
- Loading Dock and Warehouse Entryways
- Public Transit and Municipal Buildings
- Power Plants and Electrical Substations
- Agricultural Operations and Field Protection
- Infrastructure Protection
- Museums and Public Assembly Facilities
- Electric Vehicle Fire Submersion Pools

Mayim™ Components

The Mayim Flood Control System consists of a straight main barrier section that is supplemented by 30 degree curved pieces (Inward and Outward), allowing you to create a customized line of defense against floods.

Curve Barriers enable installation around obstacles and can change the barriers' direction and shape. For example, if you need to turn around a square property, each Outward or Inward Curve section creates a 30 degree outward or inward curve. 3 curve sections connected creates a 90 degree turn.

If you need to handle an L-shaped configuration, use two Inward Curve sections at the inside of the "L".

How Many Barriers Do I Need?

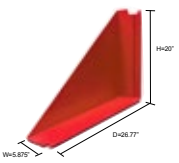
When connected, each Mayim™ panel overlaps roughly 2-4", depending on the specific angle utilized. Though angled pieces do add some length, they are typically used to round an obstacle or make a turn and shouldn't be considered when calculating the quantities for your barrier.

Mayim™ Flood Barrier (MB1) - 20" Height

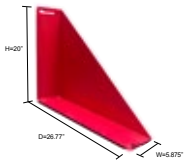
MB1-S: Straight Flood Barrier

MB1-IC: Inward Curve Barrier

MB1-OC: Outward Curve Barrier



MB1-GER: Gable End Right

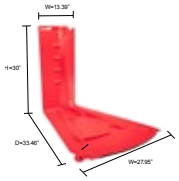


MB1-GEL: Gable End Left

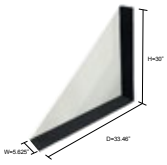
Mayim™ Flood Barrier (MB2*) - 30" Height

MB2-S: Straight Flood Barrier

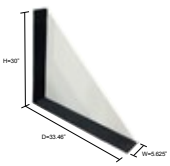
MB2-IC: Inward Curve Barrier



MB2-OC: Outward Curve Barrier



MB2-GER: Gable End Right



MB2-GEL: Gable End Left

**MB2 is Available in Red or Hunter Green*

Inward Curve

Outward Curve

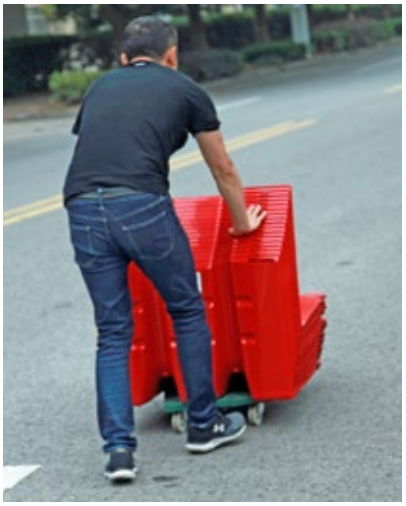
Flexible Design

Mayim™ Installation

Mayim Barriers are designed to be deployed rapidly. Each barrier weighs between 6 and 21 lbs, allowing nearly anyone to move sections into position. The locking mechanism is easy and intuitive, allowing for deployment of approximately 3 sections per minute, or roughly 15 minutes for 100ft of flood water protection.

When standing behind Mayim barriers, each barrier has a female receiver at the bottom right of the barrier and a male connecting tab on the bottom left. Each barrier also has a female receiver at the top right and a male connecting tab on the top left.

To connect panels, simply tip the newest barrier at an angle and insert the bottom male connecting tab into the female receiver. Set the panel down and press the male connecting tab into the female receiver.



Staging Barriers

Positioning

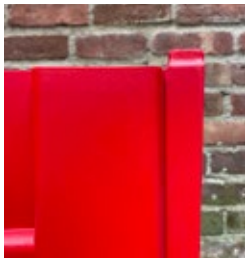
Connecting

Locking Sections

Connection Components

Bottom Male Connector Tab

Bottom Female Receiver



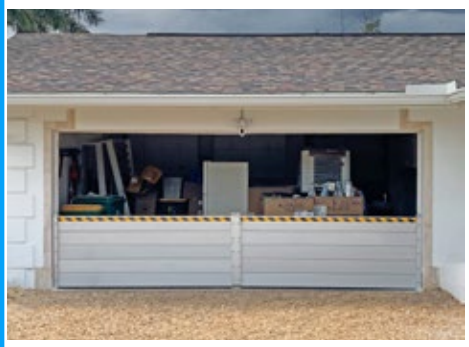
Top Male Connector Tab

Top Female Receiver

Neoprene Strip

Optionally add neoprene strips to the backside of the end Mayim Barrier closest to the wall to create a stronger seal.

HAMMERHEAD
ALUMINUM FLOOD PLANKS



Aluminum Flood Plank Protection

Durable aluminum flood panel system designed to protect entryways, garages, bay doors and more from flooding.

www.garrisonflood.com

The Hammerhead™ aluminum panel flood barrier system is a durable flood barrier that enables you to protect doorways and other openings against flooding.

U-Channel posts are installed on either side of the opening to be protected. These unobtrusive posts remain in place permanently and when flooding is expected are designed to receive a series of aluminum planks, which are stacked as needed to the height required.

The Hammerhead™ stackable "stop log" flood barrier is able to withstand water up to 6 feet and will protect your building, residence, or facility against all types of flooding.

This flood gate system is also ideal for areas where high wind or debris is expected as the fixed posts and clamped planks are durable and rigid and designed to handle heavy stresses.

Simple Installation

Hammerhead™ plank system is designed to fit your specific entryways with minimal adjustments to your property. Once U-channel posts are installed, planks are easily slid down to build your optimal height of protection.

Durable Flood Protection

Hammerhead™ planks are made from a durable 6063-T5 Aluminum able to withstand heavy stress brought on by flood water.

Rapid Deployment

When a flood is expected, insert planks into the U-channels on either side of the door opening and tighten down.

12'+ Wide Width

Hammerhead™ provides plank widths up to 12' wide without additional supports. Unlimited length is achieved with center posts for even more protection.

Protect Entrances and Doorways from Flooding

When you need durable flood protection, Garrison's Hammerhead™ aluminum flood plank barrier is the right flood gate choice for your residential or commercial property.

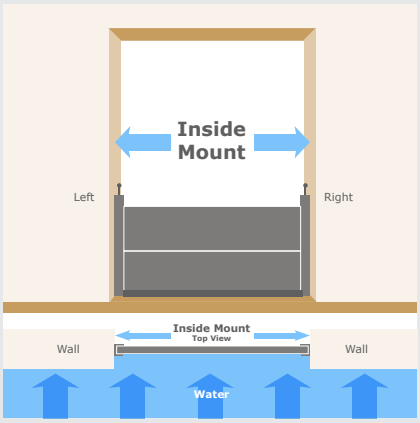
- Doorways and Window Wells
- Loading Docks
- Basement Stairwells
- Perimeter Opening Protection
- Garages and Ramps

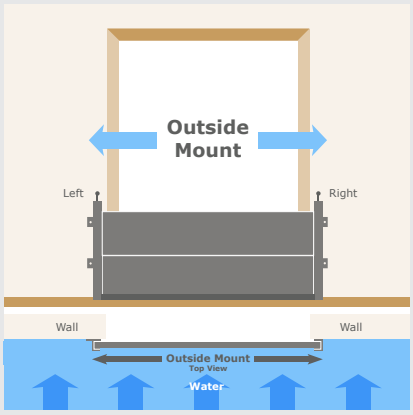
Why Hammerhead?

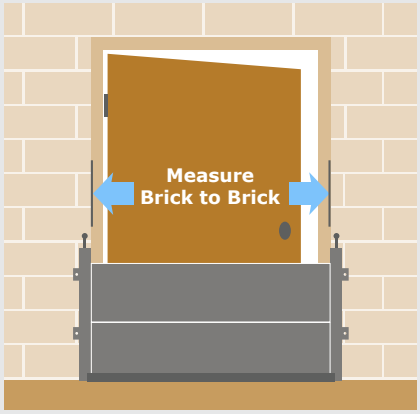
- Serious protection against severe flooding up to 6ft
- Customizable heights and lengths depending on your specific needs
- Reusable and long lasting durable aluminum construction
- Compactly stores and stacks and takes up minimal space when not in use
- Easily deployed by unskilled labor
- Durable enough to handle high winds and debris

Flood Barrier Mounting

Decide if you prefer to install posts inside or outside your opening and measure the opening accordingly. Precise measurements should be made for internally mounted posts. Use a hammer drill to drill mounting holes into concrete, cinder block, cement walls or metal frames. Place posts and insert and tighten mounting bolts. Posts remain in position permanently.







Product Details

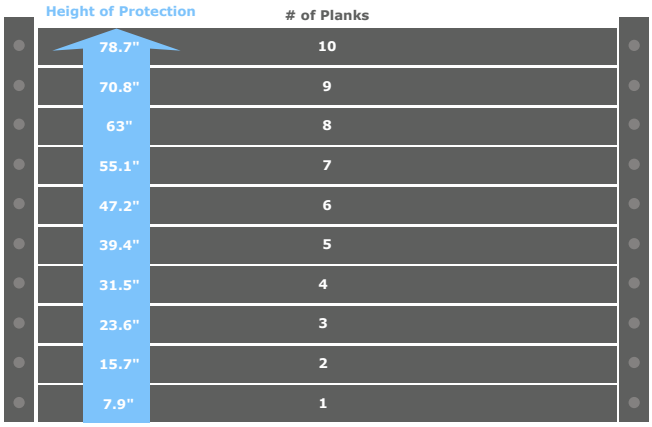
Planks

- Plank Material: 6063-T5 Aluminum
- Plank Width: Varies Depending on Opening Size
- Individual Plank Height: 7.87” (20cm)
- Plank Weight: 2.016lbs per ft.
- Plank Depth: 1.58” (40mm)
- Plank Wall Thickness: 0.0787” (2mm)
- Sealing Strip Material: Rubber EPDM
- Tallest Protection Height: 6.6ft (10 planks)

Posts

- Post Material: 6063-T5 Aluminum
- Post Height: Varies depending on number of planks
- Post Weight: 3.025lbs per ft.
- Post Depth: 3.94” (10cm)
- Post Width: 2.36” (6cm)
- Middle Post Width (Double Channel): 5.12” (13cm)
- Middle Post Weight: 6.05lbs per ft.
- Sealing Material: Rubber EPDM

Protection Height



System Components


Aluminum Planks


Support Post (L/R)


Double Support Post (Middle Post)


Corner Post (L/R)

Accessories


Plank Support Buttress


Center Post Kicker

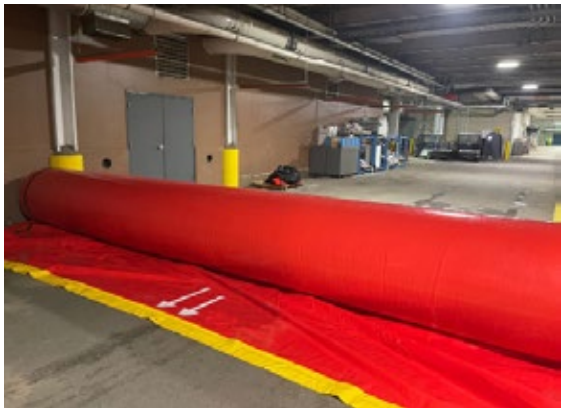

Expanding Post Wall Anchor

SERPENT
INFLATABLE FLOOD CONTROL TUBES

Inflatable Flood Tube Protection System

Inflatable flood control system that deploys quickly and provides flood protection for up to 3ft in height.

www.garrisonflood.com



The Serpent® Inflatable Flood Control Tube is an inflatable flood control system that deploys quickly and provides flood protection for up to 3ft in height.

Each flood control tube incorporates an inflation valve that allows inflation of a 30ft length of tube in 12-18 minutes. To prevent water seepage and to create a continuous flood control barrier, individual inflated sections can be placed side by side and fastened together using the Velcro Tube Connector Sheet.

Like a berm, the Serpent® flood control system can be placed in front of and around sensitive infrastructure or buildings and property, protecting them against water damage from rising flood waters. Two sizes of Serpent® are available, depending on your specific requirements: 30ft Tube and 15ft Tube.

The Serpent® inflatable flood control tube is reusable. Once a flood event is over, it can be simply deflated, rolled up and put back in storage for future use.

Serpent® tubes are stored compactly on pallets and may be transported to a flood site quickly, or between sites for evolving emergency situations.

Deploys & Inflates Quickly

Once Serpent® tubes are unrolled, they can be inflated in 5 minutes, using a simple hand-held blower. Sections can be staked to the ground in back for greater strength, while integrated skirting on the water facing side is ballasted by rising water levels. Sections can be deflated with the reverse setting on the inflater.

Sections Connect

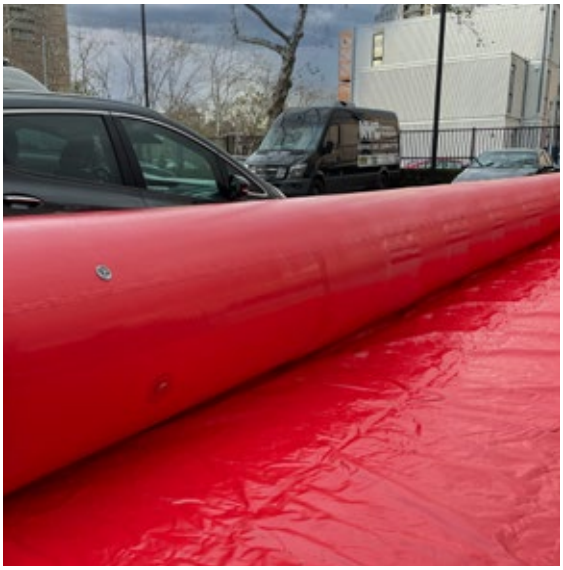
Serpent® inflatable tubes are placed adjacent to each other and when inflated, are sealed together using a seaming sheet with velcro strips to prevent water seepage. This allows for water dams to be created in nearly any configuration (i.e. around a property, etc.)

Available in 2 Lengths

The Serpent ™inflatable flood control tube is available in 2 lengths: 15ft and 30ft.

Stores Compactly

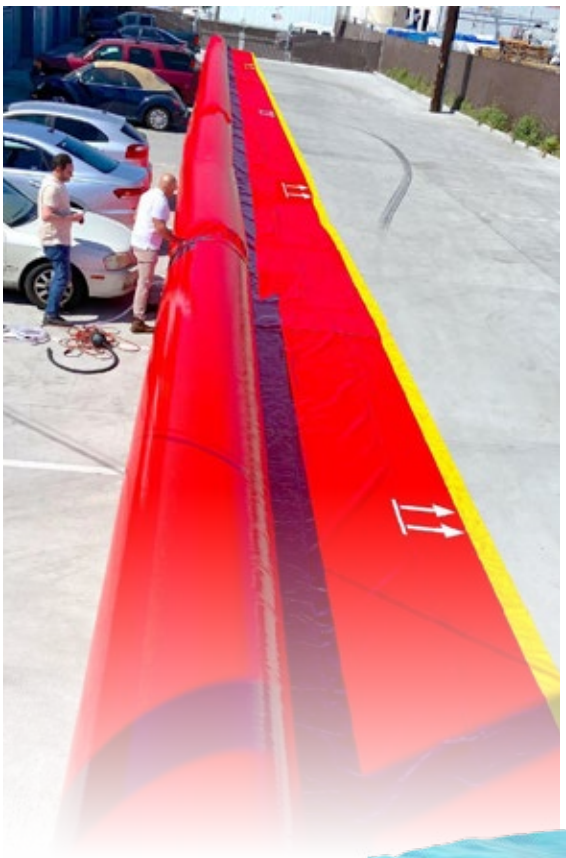
The Serpent® inflatable tube stores compactly on a pallet when deflated and can be moved onsite and rolled out into position for inflation. Serpent® barriers are ideal for remote or onsite storage and are ideal for use in rapid emergency response type scenarios.



Be Protected Against a Flood Disaster

Homes, businesses, municipal buildings or facilities all need to have flood protection plans in place for whenever a threat arises. Serpent® inflatable flood tubes, have the ability to protect a variety of properties and can be used for many applications including:

- Perimeter Building Protection
- Swelling River Diversion
- Equipment Protection
- Cofferdams
- Infrastructure Protection
- High Value Home Protection

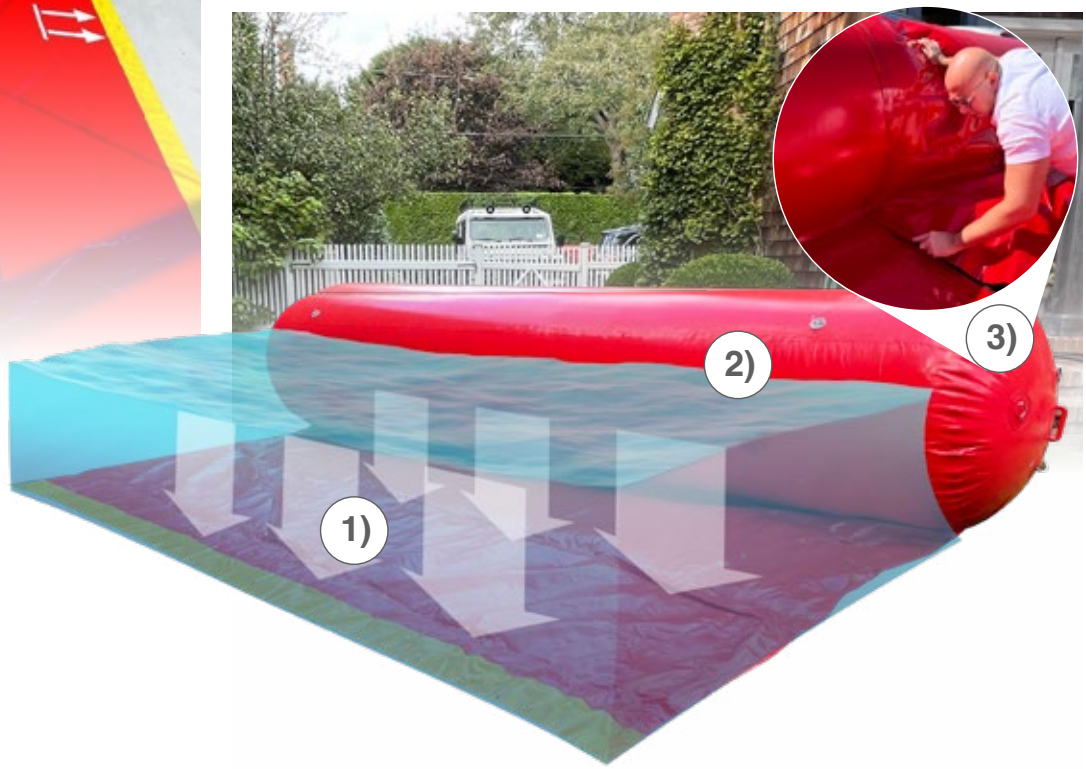


How Serpent® Works

1) Pressure Creates Support
Flowing water over the skirt of the Serpent® will create pressure, keeping the Serpent® positioned securely when protecting against flooding.

2) Damming Ability
We recommend damming to within 2" of the top height of the barrier, such that each 40" tall barrier is suitable to protect against floods of roughly 38".

3) Ability to Connect
Serpent® tubes can be fastened together using the velcro tube connector sheet for added protection length.

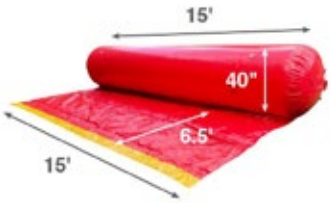


Specifications

The Serpent® Inflatable Flood Control Tube is manufactured using high-quality composite PVC mesh material that is UV treated, anti-static, waterproof, and chemical and oil resistant. Each tube has incredible tear and tension strength.

- Material: Composite PVC Mesh
- Material Thickness: 0.9mm +/- 0.02%
- Construction: Whole Thermal Bond Molding
- Fire Resistance: EN13501-B1
- Usage Temperature: -22°F to 158°F

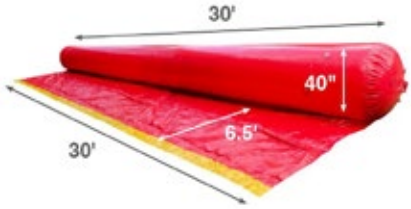
Serpent® Inflatable Flood Tube - 15ft



ST-1 Serpent Flood Tube (Small)

- Main Tube: 15ft L x 40” D
- Skirt (extends tube on water side): 6.5ft L x 15ft D
- Weight: 60lbs. +/- 5%

Serpent® Inflatable Flood Tube - 30ft



ST-2 Serpent Flood Tube (Large)

- Main Tube: 30ft L x 40” D
- Skirt (extends tube on water side): 30ft L x 6.5ft D
- Weight: 115lbs. +/- 5%

Accessories Included:

- 2 Pieces of Rope
- 5 Staking Nails
- 1 Velcro Tube Connector Sheet
- 2 Puncture Repair Patches
- 1 Transport Bag
- 1 Inflation Pump

Simple Set Up

Roll Out

Inflate

Stake Down (dependent on surface)

Attach Sections as Needed

GUPPY
WATER FILLED FLOOD TUBES

Water Filled Flood Tubes

Provides an easy and effective water barrier that will help protect against a variety of flood threats.

www.garrisonflood.com

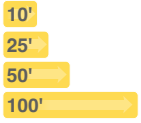
Stores Compactly

The Guppy Water Filled Flood Tube is lightweight and stores compactly. Several hundred feet of tube can fit in a standard backpack and thousands of feet can be transported in the bed of a pickup truck.

Rapidly Fills with Water

Once Guppy Flood Tubes are unrolled, they can be filled with a standard garden hose in 3-5 minutes. Simply unroll each Guppy Tube and use the integrated fill-port to fill with water. Each port has backflow protection, preventing water from flowing out of the tube when removing the hose.*

Combine Sections



Various lengths and heights available to accommodate your needs. Achieve your optimal length of protection by staggering the seam by placing one barrier tube in front of the other,overlapping just the ends. Guppy Tubes can also be stacked and placed back-to-back for even greater flood protection.

**Do not overfill the tube, leaving some flexibility, so that sections can better contour to the ground below, creating a more secure seal.*

The Guppy® Water Filled Flood Tube is an easy to fill and deploy water barrier that will redirect water and provide protection for homes, municipal buildings, infrastructure and equipment.

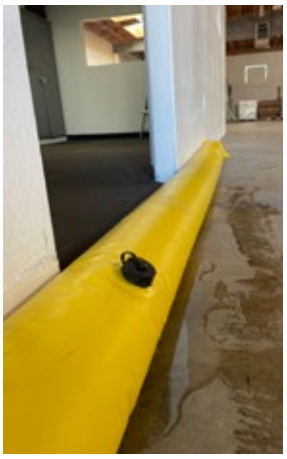
Each water filled flood control tube becomes heavy with water when filled, creating a durable berm that protects against rising floodwaters.

Guppy is available in 6” and 12” diameters and in 10ft, 25ft, 50ft and 100ft lengths. Choose the right Guppy size, depending on your specific water diversion requirements.

Each Guppy water filled tube is reusable. Once a flood event is over, it can be simply drained of water, rolled up and put back in storage for future use.

Select Guppy models are available in yellow or white

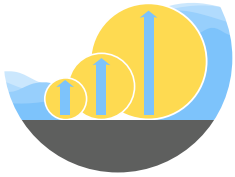


Be Protected Against a Flood Disaster

Guppy® is an economical, yet effective, solution that protects your assets against flooding. Whether it's for homes, municipal buildings, commercial facilities or other valuable infrastructure, the Guppy® is there to provide Garrison level protection. Protect and prevent flooding:

- Doorway And Loading Dock Protection
- Driveway And Garage Protection
- Stairwell And Basement Protection
- Redirect Harmful Spills And Leaks
- Equipment And Infrastructure Protection
- Full House Or Office Perimeter Protection
- Creek, Canal Or River Overflow Protection
- Tent And Event Flood Protection



6", 12" & 24" Heights

Choose the protection height that best meets your flood control needs.

Damming Ability

We recommend damming to within 2" of the top height of the barrier, such that each 12" tall barrier is suitable to protect against floods of roughly 10".

Specifications

The Guppy® Water Filled Flood Control Tube is manufactured using high quality composite PVC mesh material that is UV treated, anti-static, waterproof, and chemical and oil resistant. Each tube has incredible tear and tension strength.

- Material: Composite PVC Mesh
- Material Weight: 18oz. / 610 GSM
- Construction: Whole Thermal Bond Molding
- Fire Resistance: EN13501-81
- Usage Temperature: -32°F to 158°F (RV anti-freeze is recommended for below freezing temperatures. Tubes should be no more than 3/4 full if freezing is expected).

Flood Tube Sizes	Item Number	Length	Color Option
 6" Flood Tube	G6-10	10ft	Yellow
	G6-25	25ft	Yellow
	G6-50	50ft	Yellow/White
	G6-100	100ft	Yellow/White
 12" Flood Tube	G12-10	10ft	Yellow
	G12-25	25ft	Yellow/White
	G12-50	50ft	Yellow/White
	G12-100	100ft	Yellow/White
 24" Flood Tube	G24-50	50ft	Yellow
	G24-100	100ft	Yellow

Simple Set Up

Unroll Guppy® in Desired Location

Fill Guppy® with Garden Hose

Drain the Guppy® After Flood Event

minnow
WATER ACTIVATED FLOOD BAGS

Water Activated Gel filled Flood Control Bags

The Minnow sandbag alternative offers compact storage, incredible water absorption, and a no-mess clean up after a flood.

www.garrisonflood.com

The Minnow® sand-less sandbag contains a super absorbent gel, which absorbs water and inflates, creating a solid barrier against flooding.

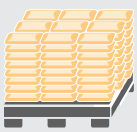
Minnow bags can be stored flat, transported quickly to flood sites, and installed quickly, using minimal labor.

As flood water rises, the Minnow Flood Bag will inflate and absorb water, creating a barrier. Water absorption typically occurs in under 3 minutes, as water levels rise and is absorbed.

The permeability of the swelled material is considered semi-pervious, once activated it is ideal for retaining and diverting flood water as well as for managing low to moderate floods.

Why Minnow®?

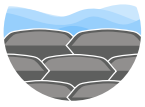
1Pallet holds
60 Sandbags



or 1200 Minnows™

Inflates Quickly In Water

Minnow Flood Bags inflate quickly when submerged in water. Each SAP gel filled bag will swell to 38-40lbs. within 3-4 minutes, ready to deploy. We recommend pre-inflating bags prior to deployment.



Easy To Deploy

Minnow Flood Bags are deployed with 1-2 people, laying rows of bags and staggering them in a brick-lay pattern. As bags swell to 40lbs., the Minnow Bag with handles is a good option for easier transport.

Stores Compactly

Five Minnow Bags are shipped vacuum packed flat in a seamless bag, keeping the super absorbant polymer material dry and ready f or use. When deflated and vacuum packed, bags are incredibly compact.

Material

The secret to the sand-less Minnow Flood Bag is its non-woven polypropylene outer construction, filled with a hydrophilic SAP (Super Absorbent Polymer) material, capable of absorbing 39-441bs. of water. Once inflated, the bags provide great resistance and diversion to rising and flowing flood water.

Be Protected Against a Flood Disaster

Minnow flood bags help mitigate flood damage by keeping water away from the things you care about. Some uses for Minnow include:

- Levee And Berm Construction
- Equipment Protection
- Spill Cleanup
- Property Perimeter Protection
- Sewer Grate Seal Off
- Doorway And Loading Dock Flood Protection
- Driveway And Garage Flood Protection
- Instant Dams

Installation & Placement

Remove Minnow Bags From Vacuum Sealed Pouch

Place Minnow Bags in Fresh Water Pool For Inflation

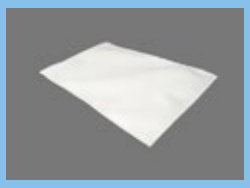
Place First Row of Bags Down, With the Long Side Parallel to Water

Continue to Add Rows & Layers as Needed

Minnow® - MW1

Standard Minnow® Gel Filled Bag

- Shape: Pillow Shape
- Dimensions: 23.62”L x 15.75”D x 4.72”H (when filled)
- Weight: 9.6oz Unactivated / 39-44lbs. Activated



MW1 Gel Filled Minnow Bag Before Water Absorption

MW1 Gel Filled Minnow Flood Bags After Water Absorption

Minnow® - MW2

Square Shape Minnow® Gel Filled Bag w/ Handle

- Shape: Square / Box Shape w/ Handles
- Dimensions: 15.75”L x 14.17”D x 4.72”H (when filled)
- Weight: 11.6oz Unactivated / 39-44lbs. Activated

MW2 SAP Gel Filled Minnow Bag (w/Handles) Before Water Absorption

MW2 Gel Filled Minnow Flood Bags (w/Handles) After Water Absorption

Specifications

The Minnow® sand-less sandbag is manufactured using high quality non-woven polypropylene material that contains an SAP (Super Absorbent Polymer) gel, which is activated and becomes absorbent upon contact with water.

All Minnow Bags are UV protected to protect against material degradation and color fading.

- Exterior Material: Non-Woven Polypropylene with UV Protection
- Interior Material: 100% Sodium Polyacrylate
- Colors: White & Black

Choose The Minnow® That’s Right for You

	MW1-Black	**MW1**	**MW2**-Black	**MW2**
				
Stackable	✓	✓	✓	✓
Designed for Stacking & Line Making			✓	✓
Longer Length	✓	✓		
High Visibility		✓		✓

GARRISON
TRADITIONAL SANDBAG

Traditional Sandbags

Sandbags for flood control, water redirection, water retention and containment.

www.garrisonflood.com

The Garrison® Sandbag is a 14” x 26” sandbag that is designed for use in flood control, force protection, and ballast applications.

Garrison® Sandbags are suited for all types of flood control needs. From water redirection and holding back rising waters to water retention, our sandbags are an economical option for flood prevention.

Our bags are manufactured using a heavy duty 6mm thick, 10 x10 thread, Polypropylene fabric that incorporates a 2.5%, 1600 hour UV protection.

Each bag is stitched at the bottom for durability and strength. All Garrison® bags incorporate tie strings.

The Garrison® Sandbag comes stored flat for easy storage and transport. Simply bring a box or pallet of Garrison® Sandbags on-site for fill and deployment by staff or volunteers. We ship in various sized packs, from 10 sandbags to 5,000 sandbags per pallet.

Use Garrison® Sandbags in conjunction with other Garrison® flood control products such as Mayim™, Beluga® and Serpent® to help fill gaps, prevent seepage, and to provide additional ballast.

Durable

All Garrison Sandbags are manufactured using 6mm thick,10 x10 weave fabric. All sandbags are double stitched at the bottom and incorporate integrated tie strings.

Economical

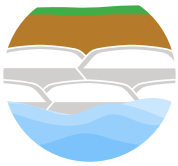
Sandbags provide the most cost effective method of protection against flooding and other uses.

UV Protected

2.5%, 1600 Hour UV Protection, providing you with an extended time you can leave sandbags in direct sunlight before they start to degrade.

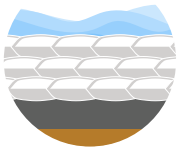
Where Can I Use Sandbags?

Flood Control
Stop flooding in its tracks and protect vulnerable property areas.



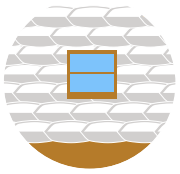
Erosion Control
Use as a long term solution for coastal and agricultural areas to prevent erosion.

Force Protection
Well suited for military fortification with their durability and use of local fill.



Levees, Dikes and Berms
Construct levees, dikes and berms quickly and effectively using sandbags.

Ballast
Sandbags are 35-40lbs when full, providing ballast and support.



Earthbag Homes
Use sandbags to create earthbag and earthen homes.

Product Material Specifications

- Material: Manufactured using high quality 6mm thick, Polypropylene with a 10x10 fabric weave
- Fabric: Incorporates 2.5%, 1600 hour UV protection
- Warranty: Standard 2-year warranty against manufacturer's defects

GSB1 (Standard Garrison® Sandbag)

- Traditional Sandbag Shape: 26" L x 14" W x 4" H (when filled)
- Includes: Integrated tie strings
- Weight: 35-40 lbs. when filled to recommended fill level & 60-70 lbs. when completely filled
- Shipping: The Garrison sandbag is shipped flat for easy storage and transport

Multiple quantity packs available

Number of Sandbags Needed

Get a sense in advance of how long and how tall of a dike you may need to build.

We recommend having enough sandbags and a source of sand readily available in advance of any flood situation or to respond to flood emergencies.

Bags Required for 100 Linear Foot Wall

Wall Height w/Base 2x Height	Number of Sandbags
1ft Tall	600
2ft Tall	1700
3ft Tall	3000
4ft Tall	5500

Wall Height w/Base 3x Height	Number of Sandbags
1ft Tall	600
2ft Tall	2100
3ft Tall	4500
4ft Tall	7800

Amount of Sand or Fill Needed

For erosion control applications, we suggest using gravel, however for flood control applications, sand is considered the best fill material.

- 1 cubic yard of sand will fill approximately 100 sandbags sizes 14” x 26”
- We recommend filling to a weight of 30 pounds (around 1/2 to 2/3 full)
- Do not overfill sandbags or they will not conform to environment and be difficult to handle

Fill Required for 100 Linear Foot Wall

Wall Height w/Base 2x Height	Cubic Yards of Sand
1ft Tall	6
2ft Tall	8
3ft Tall	38
4ft Tall	65
5ft Tall	100

Wall Height w/Base 3x Height	Cubic Yards of Sand
1ft Tall	7
2ft Tall	25
3ft Tall	54
4ft Tall	95
5ft Tall	145

BELUGA
CONCERTINA FLOOD PREVENTION SYSTEM

Large Sand Filled Barrier Bags For Flood Control

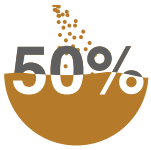
A concertina style big bag flood control system that is ideal for protection of important property and infrastructure.

www.garrisonflood.com

Installs More Quickly

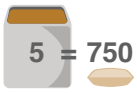
Beluga® Bags install more quickly than traditional sandbags, because they can be placed and expanded quickly and filled in bulk versus small sandbags which must be filled and tied individually, bag by bag. This means that standard material handling equipment can be used to transport and fill Beluga's with sand.

Uses Less Sand



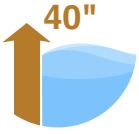
Beluga® Barriers use approximately 50% less sand, because they provide the ability to gain height, without the need for a widened base that is 2x the height for typical sand bags stacked to 40" (the Beluga® bag's height). Beluga also eliminates dead space associated with stacked sandbags.

Requires Less Labor



5 Beluga® Bags replace roughly 750 sandbags and fill in bulk in about 15 minutes, there is significantly less labor, time and work to create an equivalent height and strength flood barrier. Two people can fill 15 traditional sandbags per hour. That's 50 hours to build an equivalent Beluga® dike from traditional sandbags.

Protection Height



Beluga® barriers achieve 40" of heavy duty flood protection height when filled and can be stacked to a 9ft high barrier for even greater protection.

The Beluga® Bag Barrier is a unique flood control system that is ideal for protection of important property and infrastructure.

The Beluga® bag barrier is a concertina style big bag system, consisting of an integrated heavy duty bag, divided into 5 distinct chambers (BG5), ready to receive sand or other aggregate or fill material.

Each individual compartment is incredibly strong and can hold over 5,000 lbs. of fill.

Beluga® Bags ship flat on pallets, ready to be opened, positioned and filled. Beluga Bag Barriers use roughly 1/2 the amount of sand required for an equivalent sandbag barrier and significantly less labor to position and fill.

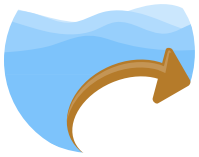
Each Single Bag (BG1) is 3ft long, 3ft deep and 40" high and replaces approximately 150 standard sandbags. Each 5-Compartment Bag (BG5) is 15ft long, 3ft deep, and 40" high and replaces approximately 750 standard sandbags.

Beluga® Bag Barriers can be installed and fulfilled by a small crew. When full, Beluga bags can be moved using traditional material handling equipment, or using a heavy duty spreader bar, for lifting a full 5-compartment version (BG5).

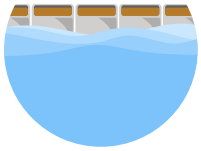
Be Protected Against a Flood Disaster

Beluga® big bag flood protection barriers can rapidly deploy against major flooding events. Beluga® FIBC bags can be used for a variety of applications and can help in the protection of municipal buildings, homes, construction sites, commercial properties, coastlines, infrastructure and more. Use Beluga® bags along riverfront paths, lakefronts, canals, oceanfront sea walls, on bays, around a building or facility and anywhere floods can occur.

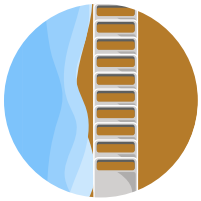
Beluga® Bags are exceptionally effective for the following uses:



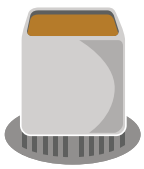
Water Diversion
Use Beluga® barriers to divert water away from sensitive infrastructure and to protect property from rising flood waters.



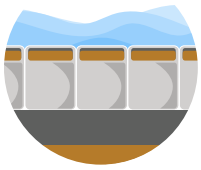
Cofferdams
Keep water contained in a particular area by blocking its flow and preventing its migration to other areas.



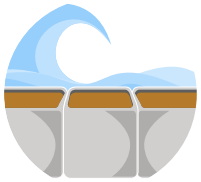
Coastal Erosion
Use Beluga® bags, filled with sand or cement, to protect against coastal erosion. Efficiently deploy bags, without extensive site prep. Reinforce waterfronts, river fronts, and other erosion prone areas.



Sewer Drain Sealing
Place oversized Beluga® bags on top of sewer drains and outlets to prevent sewage back flow from sewer back ups or rising flood water levels.



Levee Heightening
Reinforce and heighten levees by adding Beluga® barriers on top of existing levees. Fill gaps in the levee or repair breaches.



Storm Surge Protection
Beluga® stands up against heavy storm surges. The bag's heavy fill and 40" protection height keeps Beluga® Bags in place and stops flood waters in its tracks.

Product Material Specifications

- Material: Constructed using a durable 5.6oz, coated (impermeable) polypropylene fabric on 1 side, and an uncoated 5.0 oz (water permeable) fabric on the other sides (allowing slow water drainage)
- Fabric: 170 GSM Fabric / RIC Code 5 / SIP Code PP / 100% Polypropylene
- Classification: NAICS Code 314910
- Properties: 2200 Hour UV Protection
- Bag Capacity: Seams are double-stitched for added strength & durability. Bags have a capacity of 30 cubic-feet of sand (filled to the top) per section x 5 sections = 150 cubic feet of sand per 5-compartent bag.
  - 4,500lbs. Safe Working Load Weight Per Bag
  - 22,500lbs. Safe Working Load Weight Per BG5 Bag

BG1 (Beluga®
Single Bag)

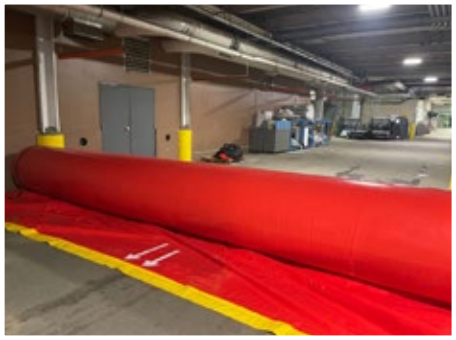
	Description	Size	Empty Weight	Filled Weight	Includes
BG1	Single Bag	3ft L x 3ft W x 40" H	2.5 lbs	2,630 lbs	4 Lifting Straps
BG5	5 Compartment Bag	15ft L x 3ft W x 40" H	12 lbs	13,150 lbs	20 Lifting Straps

- We recommend designing your system around the BG5 bag (shown right) and supplementing with BG1 as needed.
- BG1 is also great for use as a super sack for bulk materials, or FIBC bag.
- Each Bag section includes 4ea. 2” x 10” double loop lifting straps for simple transport, or 20 lifting straps per 5-compartment bag (BG5)

BG5 (Beluga®
5-Compartment Bag)



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GARRISON FLOOD CONTROL