



# WaterGelSacks

## Instructions

### The new generation of sand-less bags

The original water-absorbing inflation bag

### How to use WaterGelSacks™

You are about to use WaterGelSacks, an innovative self-inflating flooding defense system, set to revolutionize the way we control damage due flooding. WaterGelSacks is also becoming a very popular product for many other solutions.

WaterGelSacks is so easy to carry, to store, and deploy, that anyone can use it -from military, to commercial property managers, and throughout households.

Please read carefully the following deployment instructions:

- 1.- Take WaterGelSacks to the scene and unwrap it from the original packaging of cardboard box and plastic bag.
- 2.- Immerse the bag in water nearby or directly by the floodwater if necessary; it can also be inflated with a hosepipe.
- 3.- WaterGelSacks will expand by absorbing water during 3-4 minutes and will be ready to use; after 4 minutes will be saturated.
- 4.- Use it for the purpose you need it for.

Before using the WaterGelSacks, it should be stored in an indoor dry place in the original plastic bag and cardboard box, away from air, moisture, sunlight and heat. Extreme weather conditions such as desert heat or freezing temperatures will not affect the useful life of the product if stored properly.





**Use it in combination with plastic sheets underneath to ensure a watertight seal.**

In order to create a flood barrier, place the bags as you would do with standard sandbags. Please note that WaterGelSacks is more effective in use than a standard sack.

WaterGelSacks will remain effective for several months (depending on the weather conditions in each case/country). Once use it should be storage, you have to keep them to be used again during the next few weeks, they should be storage protected with plastic indoors (like in a garage) until the next use. It won't leak or release any water from inside. When in use again the WaterGelSacks may evaporate some of the water, so you can soak it again and it will inflate again. This can be performed several times, depending only on the outside temperature.

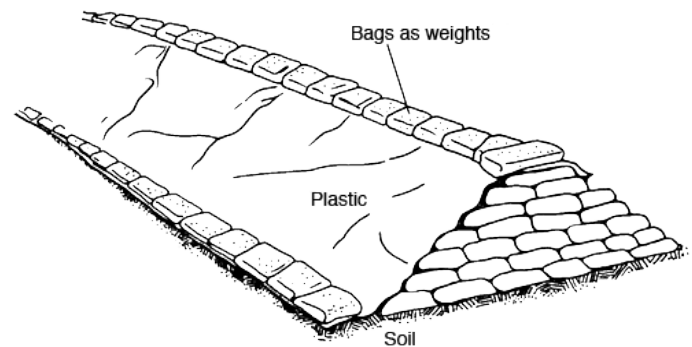
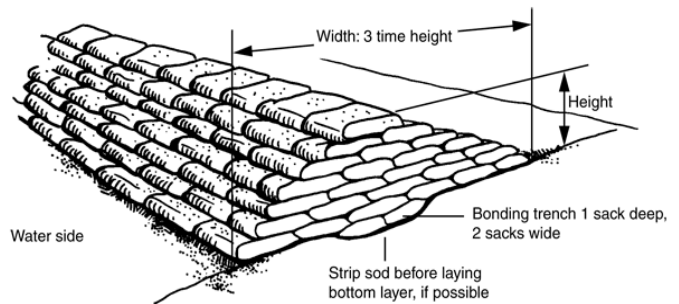
## How to build a dike

1.- Select the site for the dike. Avoid trees or other obstructions, which would weaken the structure. If possible, try not to build the dike against a wall; leave about 8 feet (one and a half meters) of space to maneuver between the dike and buildings.

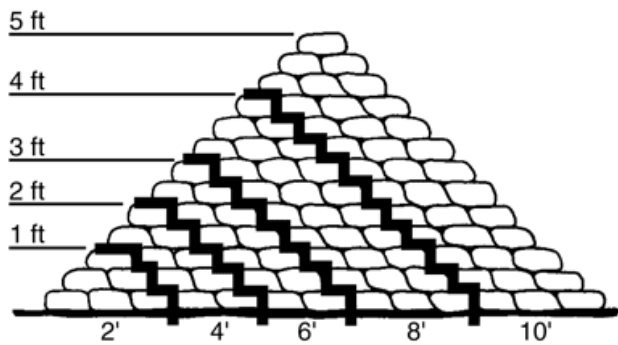
2.- Build the dyke base three times width of the height of the protection wall.

3.- Each layer should be laid in alternative formations; one lay lengthwise parallel to the flow and the next lay with the narrowest side of WaterGelSacks parallel to the flow.

4.- To seal the finished dike to increase its water tightness, lay plastic sheeting so that the bottom edge extends 1 foot beyond the bottom edge of the dike and place a row of tightly-fitting WaterGelSacks along the edge to create a watertight seal along the water flow. The upper edge should extend over the top of the dike. Place another row of tightly-fitting WaterGelSacks along the edge, on the top of the plastic, to keep it from moving.



WaterGelSacks can be used against seawater but they are not suitable to be refilled with it.



(\*) Estimated bags needed to build 100 linear feet dike (about 30 meters length), base on width-to-height ratio 2:1

- 1 foot high (about 30 cm): 600 bags
- 2 foot high (about 60 cm): 1700 bags
- 3 foot high (about 90 cm): 3000 bags
- 4 foot high (about 1,2 m): 5500 bags
- 5 foot high (about 1,5 m): 9000 bags



WaterGelSacks should be placed very tight, creating seal, and stair stepped.  
NOTE: Some SAP dust may escape from the bag due handling and unpacking.

## Disposal of WaterGelSacks™

In case the bags have been inflated with contaminated water, we recommend early disposal according to the Authorities regulation.

After the flooding or any other use, WaterGelSacks can be disposed in different ways, as follow:

- In authorized landfills.
- Cutting the bag to remove the SAP inside and place it around plants and trees. The two bags (jute and cotton) can be disposed as regular waste.
- WaterGelSacks can be disposed as greening, buried under trees or plants as them will provide water reservoir and improve moisture retention.
- SAP can be decomposed by sunshine.

Do not put the SAP throughout the drainage systems because it might block it; however, incidental small quantities down the drain, will not affect the performance of the wastewater treatment system. All the materials are environmental friendly, innocuous, odorless, non- toxic, flavorless, pollution-free and biodegradable in nature. They can be decomposed naturally, without causing any pollution.

**IMPORTANT:** SAP is slippery when wet. We suggest washing the surface where WaterGelSacks has been used or place temporary signs saying “Wet floor, take care to avoid slipping”.

(\*) To know the estimate WaterGelSacks needed to build a dike, use the following equation based on width-to-height ratio of 3:1 per lineal foot (about 30 m length).

$$W = [(3 \times H) + (9 \times H \times H)] / 2$$

W = Number of WaterGelSacks required per lineal foot.

H = Dike height in feet.

1 foot = 0.31 meter.

(\*) Estimated bags needed to build 100 linear feet dike (about 30 m length), base on width-to-height ratio 3:1

- 1 foot high (about 30 cm): 600 bags
- 2 foot high (about 60 cm):: 2100 bags
- 3 foot high (about 90 cm):: 4500 bags
- 4 foot high (about 1,2 m):: 7800 bags

(\*) Indicative amounts

## SAP, Material Safety Data Sheet.

**1.- Substance.** Super Absorbent Polymer.

**2.- Composition.** Sodium polyacrylate, cross-linked 100%.

**3. Hazards identification.** No hazardous effect known.

**4. First AID measures.** Remove contaminated clothing and laundry before re-use. In case of inhaled: if difficulties occur after dust has been inhaled, breathe fresh air and go for medical attention because it might cause respiratory tract irritation. In case of contact on skin: wash thoroughly with soap and water. In case of contact with eyes: wash affected eyes for at least 15 minutes under running water with eyelids held open and go for medical attention. In case of ingestion: rinse mouth and then drink plenty of normal saline and go for medical attention. Note to physician: treat according to symptoms (decontamination, vital functions). No known specific antidote.

**5. Fire fighting measures.** Hazardous combustion product: none known. Suitable extinguishing media: water, carbon dioxide, foam fire—extinguisher. Additional information: avoid whirling up the material. Special protective equipment: wear a self-contained breathing apparatus. Further information: contaminated extinguishing water must be disposed of in accordance with local regulations. The degree of risk is governed by the burning substance and the fire.

**6. Accidental release measures.** For large amounts of SAP powder or granulate manipulation, breathing protection required.

**7. Handling and storage in accordance with good industrial hygiene and safety practice.** Breathing must be protected when large quantities of SAP are decanted without local exhaust ventilation. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge. Do not release untreated into nature waters.

**8. Exposure controls / Personal protection.** Components with workplace control parameters. A safe working level of 0.05 mg/m<sup>3</sup> has been established for respirable superabsorbent polymer. Dust in accordance with international industry standards. Personal protective equipment respiratory protection: breathing protection if dusts are formed. Hand protection: chemical resistant protective gloves (EN 374) Nitrile rubber (NBR) – 0.4 mm coating thickness. Chloroprene rubber (CR) – 0.5 mm coating thickness. Eye protection: safety glasses with side-shields (frame goggles) (EN 166). General safety and hygiene measures: handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

**9. Physical and chemical properties.** Form: granulates or powder. Color: white. Odor: odorless. PH value: approx. 6.2. Bulk density: approx. 700 kg/m<sup>3</sup>. Solubility in water: insoluble, only capable of swelling (22°C).

**10. Stability and reactivity.** Hazardous reactions: the product has no dust explosion risk as supplied. However, the build-up of fine dust can lead to a risk. No hazardous decomposition products if stored and handled as prescribed / indicated.

**SAP presents a minimal risk of fire and reactivity, similar to that of the jute bag; as a result, an MSDS is not required.**

**11. Toxicological information.** LD<sub>50</sub>/dermal/rat: > 2.020 mg/kg. Primary skin irritation/mouse: non-irritant (Center for Disease Control and Prevention). Primary irritations of the mucous membrane/mouse: non-irritant (Center for Disease Control and Prevention). Sensitization: No sensitizing effect. Additional information: The statement was derived from products of similar composition.

**12. Ecological information.** The product is not very soluble in water and can be removed from water mechanically in suitable effluent treatment plants. Additional information: Add. Remarks, Fate & pathway: due to the consistency of the product, dispersion into the environment is impossible. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge. Other eco-toxicological advice: do not release untreated into nature waters. The ecotoxicological effect of the product has not been tested. The information on this was derived from products of similar structure or composition.

**13. Disposal consideration.** Observe national and local legal requirements.

**14. Transport information.** Proper shipping name: not applicable. UN Number: None Hazard Class: None ADR/RID: None Symbol: None Packing Group: None. IATA/DGR limits: None

**15. Regulatory information.** Warning symbols: none. Warning words: none. Risk Phrases: none. Safety Phrases: none.

**Other information: SAP is not considered hazardous, as no particular hazards are known. As a result, an MSDS is not required.**

**DISCLAIMER:** The information is intended to serve as a guide to the safe handling of the product mentioned. It is based on our current state of knowledge and typical values are quoted. However, it should not be construed as a Technical Specification or Warranty for the product.