

# FLOOD DEFENCE

SKU - 40030015

**AQUA-SAC®**

## Description

AQUA-SAC® S.O.S. Bags are used for flood control in a similar way to traditional sandbags. Inflated S.O.S. Bags contain water absorbed in SAP. Compared to traditional sandbags, they are lighter and easier to handle. A number of S.O.S. Bags can be used to form a dam to divert a flow of water.

Each AQUA-SAC® comprises of a heavy duty jute sack with a cotton liner containing a super absorbent polymer which weighs only 440g, this means that a pack of 25 bags weighs less than one sandbag !

After soaking in water for 3 -5 minutes, the S.O.S. Bag self-inflates to over 30 times its original size.

Uninflated bags are so lightweight and compact that 1000 can be stored on one standard pallet compared to only 25 traditional sandbags.

After inflation, the AQUA-SAC® S.O.S. Bag can be used in the construction of flood defences such as dams.



## SPECIFICATION

### Uninflated Bag

(L) 60 cm X (W) 37 cm  
0.4Kg

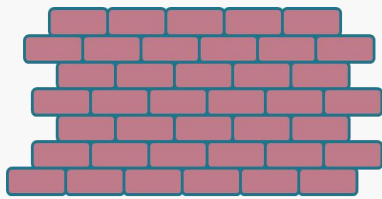
### Inflated Bag

(L) 54cm X (W) 31cm (D)10.5cm  
13 Kg

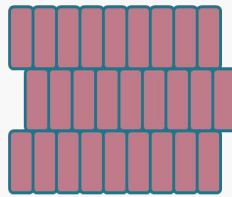
# FLOOD DEFENCE

## AQUA-SAC®

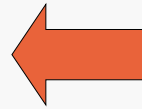
### There are two ways of laying AQUA-SAC - Headers & Stretchers



Headers (viewed from the top)

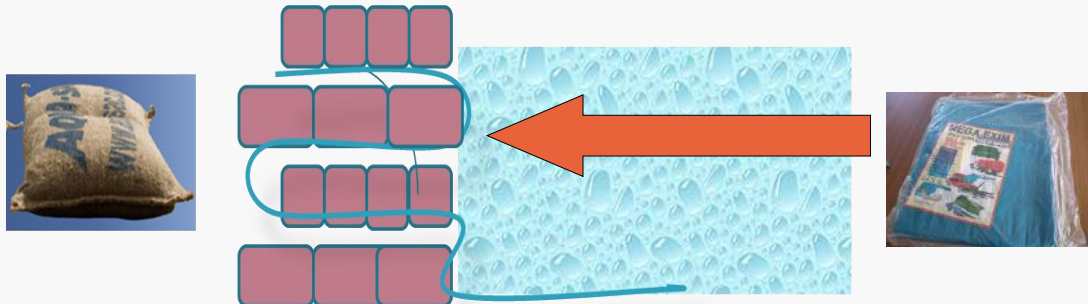


Stretchers (viewed from the top)



**Headers should be used on the first, third and fifth courses etc, whilst**

**Stretchers should be used on the second, fourth and sixth courses**



### Procedure for building an AQUA-SAC® wall and dams

- \* Building an AQUA-SAC® wall up to 63cm high by 93cm deep and 1 metre long requires approximately 36 inflated AQUA-SAC® bags
- \* To build an AQUA-SAC® wall identify firm and level ground, free from obstructions
- \* If the wall or dam is going to be in place for a long period of time PVC sheeting should be used to form a barrier on the wet side of the wall
- \* The area must be hosed down afterwards to prevent slipping hazards



## FLOOD DEFENCE

AQUA-SAC®

### TECHNICAL SPECIFICATION

**Shelf Life** - AQUA-SAC® are contained in sealed packs with a shelf life in excess of 5 years

**Environmental Impact** - The bags have little impact on the environment as both the jute sack and the cotton liner are biodegradable. The super absorbent polymer is benign with no toxic effects ensuring that the bags can be safely disposed of in landfill or by incineration. Alternatively the super absorbent polymer can be used as a hydrating medium by adding it directly to soil

**Use** - The bag is simply submerged in water for approximately 5 minutes after which time 13 litres of water will have been absorbed creating an inflated sandbag. The fully inflated bag weighs 13kg thus conforming to UK health and safety legislation for a single lift (Max. 15kg) and measures 10.5cm high, 54cm long and 31cm wide

### **Environmental Considerations**

The AQUA-SAC® S.O.S. Bag contains three components: a jute sack, a cotton inner bag, and a super-absorbent polymer (SAP). None of these components is considered toxic to the environment. Over 60% of the dry weight of the S.O.S. Bag comprises jute and cotton. These natural fibres are easily biodegradable.

SAP (cross-linked sodium polyacrylate) comprises about 33% of the dry weight of the S.O.S. Bag. This material is similar to that used in baby nappies and adult incontinence pads; it is also added to soils and composts to improve moisture retention.

Ecotoxicity - SAP is non-toxic to aquatic or terrestrial organisms at predicted exposure levels.

Environmental Fate – SAP is relatively inert in aerobic and anaerobic conditions, with practically no degradation.

It is effectively immobile in landfills and soil systems, with over 90% retention; the mobile fraction shows some biodegradability.

SAP is easy to eliminate in water-treatment plants due to its insolubility. Therefore, incidental down-the-drain disposal of small quantities of SAP will not affect the performance of wastewater treatment systems.

Elimination (persistence and degradability) information is available on request.



# FLOOD DEFENCE

AQUA-SAC®

## TECHNICAL SPECIFICATION

### Health and Safety

The components of this product are not considered hazardous, as no particular hazards are known. AQUA-SAC® S.O.S. Bags contain sodium polyacrylate, a superabsorbent polymer (SAP), the same absorbent material used in disposable nappies.

### Disposal

SAP is a non-hazardous waste suitable for disposal in an approved solid waste landfill or incineration plant, in accordance with local regulations.

Therefore, unused (dry) and used (wet) S.O.S. Bags can be sent to landfill or incineration.

Another possibility for disposal of limited numbers of AQUA-SAC® S.O.S. Bags is so-called greening, whereby bags are buried under a tree during planting to provide a water reservoir.

If greening is impractical, bags may be cut open to remove the SAP, which can be dug into soil to improve moisture retention.

### General Fire Hazards

No recognised fire hazards are associated with the AQUA-SAC® S.O.S. Bag or SAP.

Hazardous Combustion Products - None known

Extinguishing Media - Dry chemical, foam, carbon dioxide, and water fog. Extremely slippery conditions are created if SAP is spilled out of the bags and comes in contact with water.

Fire Fighting Instructions - Firefighters should wear full protective clothing including self-contained breathing apparatus.

Avoid inhaling dust during clean up: see Inhalation above.

Any small residual amount of SAP may be flushed with water into the drain for normal biological wastewater treatment.

Seepage - the outer surface of the bags can be slippery when wet, and the ground under an inflated bag will sometimes be slippery. To limit the damage, lay a few S.O.S. Bags flat on the floor around the inside of doorways and other openings to avoid the surface becoming wet.

### Bag removal and Clean up after flood:

Once the bags have been removed from site it is essential to power jet to remove any residue that may be left behind before walking on the wet surface.



### TECHNICAL SPECIFICATION

#### Potential Health Effects

**Eyes** - SAP dust may cause burning, drying, itching, etc. resulting in reddening of the eyes.

**First Aid** – If SAP dust is formed, wear protective goggles. If SAP dust gets in the eyes, immediately flush with plenty of water. Remove any particles remaining under the eyelids. Get medical attention if irritation persists.

**Skin** - Exposure to SAP dust, may aggravate existing skin conditions due to drying effect.

**First Aid** - Remove SAP dust from skin using soap and water. Take off contaminated clothing.

**Ingestion** - Tests have shown that SAP is nontoxic if ingested. First Aid - As in any instance of non-food consumption, seek medical attention immediately if there are any ill effects.

**Inhalation** - Inhaling SAP dust may cause respiratory tract and lung irritation and may aggravate existing respiratory conditions. If SAP dust exceeds the 0.05 mg/m<sup>3</sup> limit, wear an appropriate respirator, and ensure sufficient workplace ventilation.

