

**TELE**  
**TEXTILES AS**  
Industrial Fabrics and Geotextiles



**FlexiTex**

“Quality and Strength in every Fibre”

# FlexiTex

Textile shuttering for use at the water-side and underwater concrete work

## Product

### FlexiTex: Textile Shuttering

During the last twenty years there has been a significant increase in the use of textile shuttering in concrete work, particularly at the water-side and underwater projects. The most important reason for this increased interest has been the introduction of woven fabrics made of high-strength multifilament synthetic fibre. Coupled with simplified installation working procedures, this results in reduced working times.

The most important areas of application for FlexiTex are:

- Mattresses for erosion control stabilization of embankments and steep slopes
- Mattresses for constructing reservoirs
- Recasting of and repairs to piles
- Sacks and other woven "containers" for underwater concrete works
- Various designs for supporting/covering pipes
- Other design's for carrying out repair work and sealing concrete walls to make them watertight etc.

### The concrete

The quality of the concrete used in projects of this type is extremely important. The principle applied to remove excess water is based on pressure excavation, whereby the pressure exerted by the concrete as it is pumped in, causes rapid evacuation through the fabric. The fabric acts like a sieve and is designed to prevent particles from getting through it. It is important to use well pumpable concrete of the right quality and strength.

### Typical mixing ratio

The mixing ratio of sand and cement will vary between 2:1 and 4:1 from project to project depending on the type of work being undertaken. It is recommended that it should contain up to 30 % fly ash. Sand with a grain size of 0,3-0,8 mm is recommended, since a major requirement of the concrete is that it is easy to pump.

Other possible admixtures include a material that will aid the formation of pores through which air can pass, plus a plasticizer in a proportion equivalent to between 0,4-0,8 % of the concrete's total weight.

The above mixture will produce:

- homogeneous concrete
- good compression and high density
- rapid hardening
- silt-free surface
- high wear resistance

The typical water/cement ratio on hardening will be between 0,3-0,4.



Stockholm harbour



Injection of concrete

# FlexiTex

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## Tele Textiles AS can supply three types of FlexiTex

### *Type 1: FlexiTex filter mattress*

This double-weave mattress has been woven together at regular points which act as filters to even out water pressure. When using double-weave mattresses with concrete it is important to level the supporting bed. The mattresses can tolerate unevennesses of up to +/- 0,15 m per m<sup>2</sup>. The mattresses, which are supplied in widths of 5,3 m, can be attached in advance to panels for rapid installation in the area to be protected. In this instance they are usually fitted with industrial quality zip fasteners for easy joining below the water level.

Plastic funnels for casting the concrete are often stitched to the mattress. However, some small on-site adjustments have to be made.

The fabric is available in roll form and can be prepared on site, either by hand or using a stitching machine if the area to be covered is large.

It is generally necessary to stitch the panels on site to accommodate awkward corners etc.

A common error when laying the mattresses is the failure to protect a sufficient distance along the quay / embankment, thus causing erosion to take place beneath the mattress. In addition to adequate length, it is important to secure the end edges of the mattress. This can be done by digging a trench along the outer edge of the mattress, which is filled with concrete and placed in the trench.

Filling starts at the outermost point in the embankment by means of iron rods and rope (loops which fit over the iron rods may be stitched to the mattresses).

It is easy to repair any rips in the mattresses occurring for example when having too high pump pressure.

### *Type 2: FlexiTex concrete mattress*

This double-weave mattress does not have any filter points. The upper and lower sections are connected by means of spacing yarns to ensure that the concrete-filled mattress is of even thickness. Installation is carried out following the same procedure as for filter mattress (see above).

Those mattresses are supplied in 3,75m width as standard

### *Type 3: FlexiTex sacks/geotubes*

FlexiTex can also be woven into sacks of different sizes for specific applications. Please consult us for more details.

## Application areas

Erosion problems are to be found in extensive ways world wide. The use of reinforced concrete revetment is limitless.

## Advantages of using FlexiTex mattresses

- Economical solution compared to traditional concrete-made reinforcements
- Easy installation following the geographical contours
- Short installation times up to 700 m<sup>2</sup> per day
- FlexiTex is very resistant during installation as we use high tenacity polyester yarns
- Roll widths from 3,75 up to 5,3 m
- Numerous projects delivered, experienced team
- Tele Textiles is a ISO9001 certified producer



*At the river, Donau in Romania*



*FlexiTex used as ballast on pipes*



*Landfill in Italy*

Type	Design	Total width (m)	Average thickness(cm)	Approx. weight (kg per m <sup>2</sup> )
78305	Double weave filter point mattress with rectangular points	5,30	10	220
78310	Double weave filter point mattress with rectangular points	5,30	13	290
78415	Double weave concrete mattress with distance threads	3,75	7	150
78422	Double weave concrete mattress with distance threads	3,75	10	220
78450	Double weave concrete mattress with distance threads	3,75	22	500
78475	Double weave concrete mattress with distance threads	3,75	33	750

- Standard roll length is 100m
- Other dimensions on request.

The values given are indicative and correspond to average results obtained in our laboratories and testing institutes. The right is reserved to make changes without notice at any time.

Tele Textiles AS also offers a complete range of products for reinforcement and erosion control products:



**TeleVev®**

TeleVev high strength woven polyester for soil reinforcement



**TeleGrid®**

TeleGrid high strength woven polyester geogrid coated with PVC for reinforcement



**EroNet®**

Grass reinforcement for erosion control

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