



# GABI BASKETS

RIVER MATTRESSES   GABION BASKETS   GEOTEXTILES   TRAINING

## PRODUCTS OFFERED

- We offer a range of products to solve soil erosion or retention problems.
- **Gabion baskets** or **River mattresses** are offered Class A galvanized or together with a PVC coating to prevent corrosion of the steel wire.
- **Hexagonal woven mesh netting** is offered and used over mattresses for large areas and for rock-fall mesh netting.
- **Geotextiles** are normally used with gabion baskets to prevent/limit movement of soil particles through or underneath the gabion structure.
- **Gabion tool sets** are offered to make the site installation task easier and more productive.

## SERVICES OFFERED

We have the technical knowledge and experience to make your design or structure erection task that much easier and a pleasure to behold.

1. Site assistance, we can visit your site to give advice on the best size baskets and methods used to undertake the installations and provide design assistance for your erosion or retention problem.
2. Gabion structure design and detailing is done to provide advice on the best structure configuration to erect on site to solve a particular problem.
3. Price estimates are provided to assist you in compiling a costing budget for any gabion erection works to be completed.
4. Technical presentations are offered to update your technical team on either the technical design characteristics of our products or practical on site management of their installations.
5. Practical training of site personal is offered to help rural communities participate in infrastructure development projects –'D0 even when construction skills are not available nearby. We also help achieve higher production rates and better quality workmanship on gabion installations.
6. Experienced gabion contractors can be recommended to undertake sensitive and important installations, with the view of transferring their skills to the local community.



## GEOTEXTILES

We recommend the use of an appropriate geotextile placed behind and below the gabion structure at all gabion/soil interfaces. This prevents subsidence behind or below the baskets once fast flowing waters pass through the structure.

A 300mm overlap must be allowed at all joins of the geotextile, and we suggest a product with a minimum mass of 200g/m<sup>2</sup>. It must allow the passage of water through the material and hold back all fine soil particles.

## TOOL SET

The tool set consists of the following items to assist in erecting the gabion structures, it is however not a prerequisite to have these tools.

- Combination pliers
- Gabion frame
- A Stanley knife
- A small wrecking bar
- Tensioning Frame
- Fencing standards
- Gabion tensioner
- Leather gloves

## GABION APPLICATIONS

Gabions have a wide range of uses, we have listed the most common ones below for your information. Contact us for any information or design assistance you may need in regards to any of these uses.

- Mass-gravity walls
- Terrace walls
- Roadway culvert in or outlet structures
- Biofilters
- River diversion structures
- Bridge abutments and protection
- Skin revetment walls
- River canal lining
- Low-level or Irish crossings
- Hydrochambers
- Mine primary crusher walls
- River training structures e.g. Groynes.
- Reinforced soil walls
- Gabion weir or dam structures
- Longitudinal river structures
- Rockfall mesh netting
- Architectural applications



# GABION BASKETS

## Specifications:

Our baskets are made from Class A galvanized mild tensile steel wire in accordance with the SANS 675 specification. The baskets and mattresses are manufactured in strict accordance with the SANS 1580 and site installations are also in accordance with the latest SANS 1200 specification.

## GABIONS:

Our mesh is hexagonal in shape meeting with the 80x100 mm mesh aperture for gabions with a mesh wire diameter of 2.7mm and salvage wire of 3.4mm diameter.

## RIVER MATTRESSES:

Mattresses also have a hexagonal mesh spec. of 80x100mm with 2.5mm mesh wire and 3.0mm salvage wire diameter.

All gabions and mattresses use a Class A galvanised 2.20mm wire diameter lacing wire which is supplied with the baskets and used to lace together the mesh panels during the erection process.

Mattresses and gabion baskets are also available with a 0.5mm thickness P.V.C. coating to enhance the resistance of the baskets to corrosion of the wire mesh. This provides a overall increase in diameter of 1mm to all wires used in the manufacturing process.



# STANDARD SIZES

The sizes offered are shown below together with their volumes, we can make other sizes where required or necessary.

## Gabion Baskets:

All measurements are in metres, (length x width x height)

- 1x1x1 - 1m<sup>3</sup>
- 2x1x1 - 2m<sup>3</sup>
- 3x1x1 - 3m<sup>3</sup>
- 4x1x1 - 4m<sup>3</sup>
- 2x1x0.5 - 1m<sup>3</sup>
- 3x1x0.5 - 1.5m<sup>3</sup>
- 4x1x0.5 - 2m<sup>3</sup>
- 6x2x0.5 - 6m<sup>3</sup>
- 1.5x1x1 - 1.5m<sup>3</sup>
- 2x0.5x0.5 - 0.5m<sup>3</sup>

## River Mattresses:

- 2x1x0.3 - 0.6m<sup>3</sup>
- 3x1x0.3 - 0.90m<sup>3</sup>
- 4x1x0.3 - 1.20m<sup>3</sup>
- 6x2x0.17 - 2.04m<sup>3</sup>
- 6x2x0.23 - 2.76m<sup>3</sup>
- 6x2x0.30 - 3.60m<sup>3</sup>

## ROCK SPECIFICATION

In accordance with SANS 1200, the rock must be unweathered, and can be tested for its suitability using the weathering or durability tests. The rock size should meet the following requirements:

### Gabion baskets:

Using 80x100mm mesh

Min. 100 - 250mm Maximum size

### River Mattresses:

Using 80x100mm mesh

Min. 100 – D0 2/3 of mattress depth maximum size

A minimum density of 2.6ton/m<sup>3</sup> is required – D0 normally allow 1.5 tons of rock per 1m<sup>3</sup> of gabion and approximately 20% for wastage or fines depending on the quality of supply from the commercial rock source (quarry).



BEFORE



AFTER

## ADVANTAGES OF USING GABIONS

- Simple to install using unskilled labor.
- Environmentally acceptable - The use of local rock and soils for backfill is encouraged, with the subsequent rapid growth of vegetative cover.
- Flexible –'D0 Able to settle and move without failure even on unstable soils.
- Economical –'D0 Suitable stone is normally found on site or from a nearby commercial rock supply.
- The gabion basket has a high compressive resistance (rock) and tensile(mesh) strength.
- The baskets allow the free passage of water through the structure, and weep holes are unnecessary.
- Vegetation can be incorporated within or over the structures to blend in with the local environment.
- The integrity of a local ecosystem within a river is unaffected by gabions as they allow the free flow of water and growth of plants through their structure.
- With time the integrity and strength of gabion river protection is enhanced with the subsequent growth of plants and their root systems penetrating the porous gabion structure.

*Kindly call us to acquire any further information you may need or a visit by an experienced technician.*



**Gabion Baskets (Pty) Ltd**

PO Box 174 • Randpark Ridge • 2156 • Johannesburg • South Africa  
Phone +27 (11) 793 1078 • Fax 086 669 7205 • Cell +27 (83) 255 8072  
Website [www.gabionbaskets.co.za](http://www.gabionbaskets.co.za) • E-mail [louis@gabionbaskets.co.za](mailto:louis@gabionbaskets.co.za)  
Durban: Phone +27 (31) 206 2220 • Fax 088 (31) 206 2220  
Email [lionel@gilbertgeos.co.za](mailto:lionel@gilbertgeos.co.za)