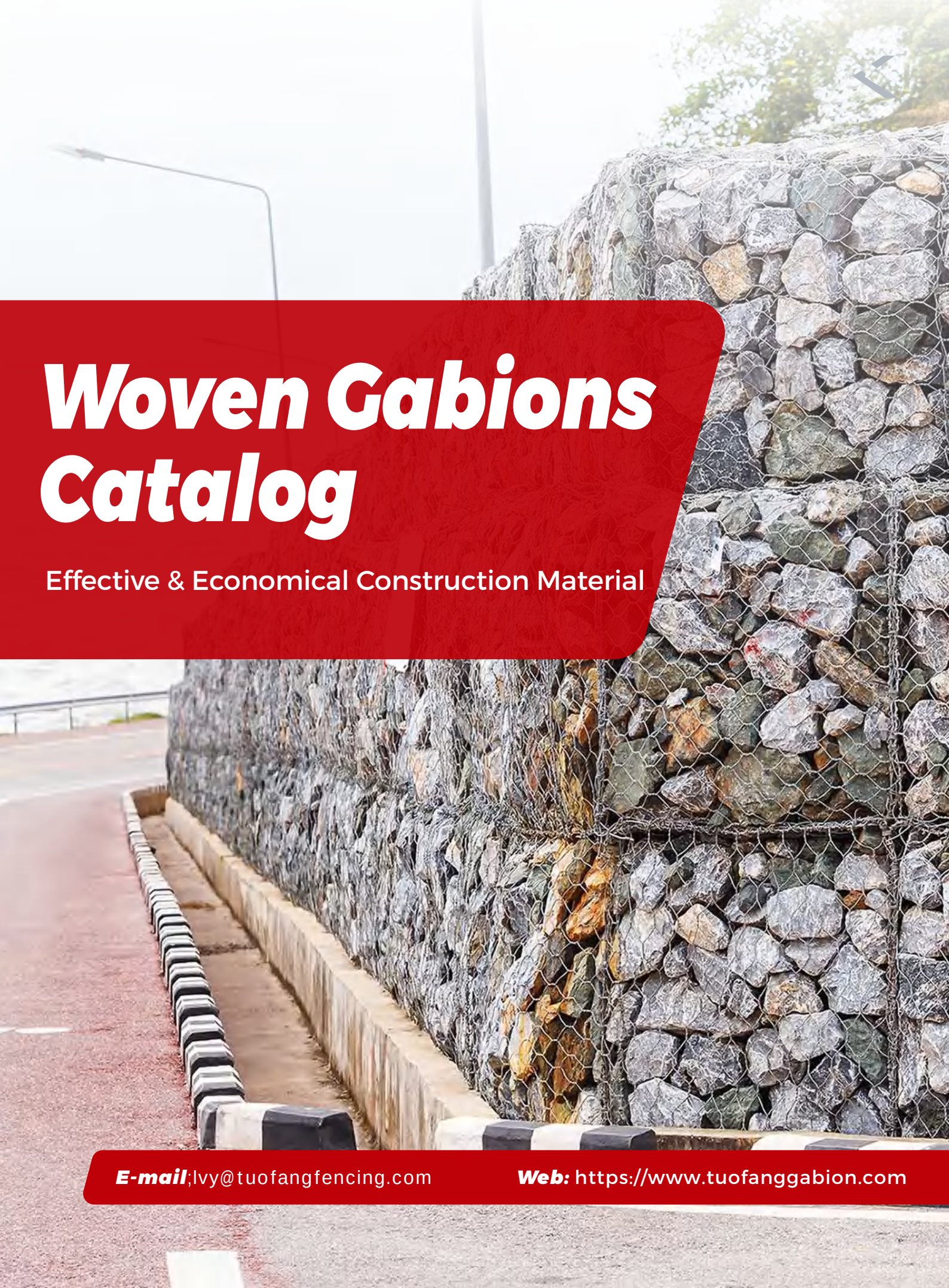


Woven Gabions Catalog

Effective & Economical Construction Material

E-mail;lvy@tuofangfencing.com ***Web:*** https://www.tuofanggabion.com

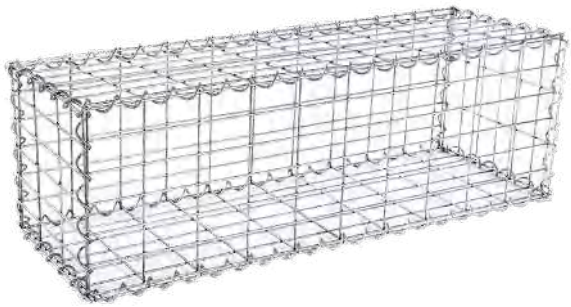
CONTENTS

Company Profile

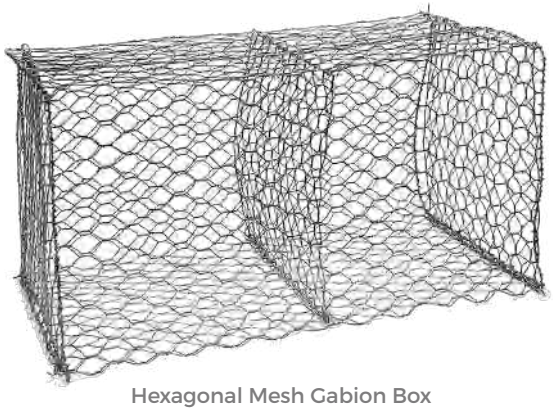
Anping TuoFang Metal Products Co., Ltd. is a professional gabion meshes supplier in China. We are professionally engaged in the production and export of all kinds of woven and welded gabions for defense and decoration.

Our company has owned all kinds of weaving and welding machines of over 160 sets and more than 100 staff members ensure high production efficiency and low production loss. More than 20 research and development department workers have been developing more products suitable for customers' requirements and market trends.

Gabion mesh box is a woven or welded wire container like cylinder and box that can be filled with stones, rocks, gravels and concrete. Woven gabion mesh is mainly used for soil erosion control, bank stabilization and river training in civil engineering. And welded gabion mesh is mainly used to decorate gardens, yards and homes in landscape architecture. The rustic appearance of gabion mesh wall brings a special and comfortable feeling to citizens who are bored with concrete structure.



Welded Gabion Box



Hexagonal Mesh Gabion Box

The lifespan of the gabion structure depends on the durability of the wire. The wire that we commonly used is galvanized wire, which has good properties of corrosion resistance and rust resistance even in wet environment. Except for that, the performance of PVC coated wire and galfan coated wire is better than galvanized wire, and the lifespan is also longer.

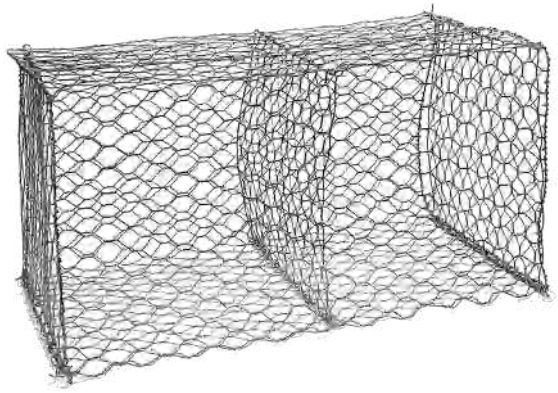
In addition, according to the different height, no matter welded gabions or hexagonal mesh gabions both can be divided into gabion box and gabion mattress. Gabion mattress is a short gabion basket with flat shape, it is mainly used in the low-lying areas such as rivers and dams.

E-mail: samuel@enzarindustry.com ***Web:*** https://www.gabionbarriers.com

Hexagonal mesh Gabion Box

HEXAGONAL MESH GABION BOX is a container that made by weaving the wire into hexagonal mesh. It is divided into several cells by inserting diaphragms every meter. The different parts of it are connected by the lacing wire. And the hexagonal mesh is reinforced by the thicker selvedge wires for higher bearing capacity and longer lifespan. In addition, hexagonal mesh gabion box has huge deform ability, so it can be easily amended on site to suit project requirements.

Hexagonal mesh gabion box is mainly used for protecting river and dam from the losing of soil and water. Because compared with welded gabion box, there are no welding point on hexagonal mesh gabion box, which can resist the erosion from flood and sea water. Additional, the twisted structure can supply higher tensile strength to be used in the heavy duty applications.



Hexagonal mesh gabion box

In our 11000 square meter gabion production workshop, Tuofang Metal has 6 sets of advanced machines for gabion mesh weaving. All our machines are in good condition and efficient. We can deliver 150 tons of gabion mesh within a week time. Urgent order request will be proper treated in our production arrangement.

Raw material

Weaving

Cutting

Assembling

Feature

- Galvanized wire makes it possible exposed to water without rusting.
- High bearing capacity, edges will not unravel or unzip.
- Huge deform ability to suit special space.
- Excellent performance in accommodating different settlements.
- Easy and quick installation.

Specification

Regular Specification of Hexagonal Mesh Gabion Box

Item	Materials	
	Galvanized	PVC Coated
Mesh (mm)	60 × 80, 80 × 100, 100 × 120	60 × 80, 80 × 100, 100 × 120
Mesh Wire (mm)	2.2, 2.7, 3.0, 3.2, 3.7	2.2, 2.7, 3.0, 3.2, 3.7
Selvedge Wire (mm)	3.0, 3.4, 3.8	3.0, 3.4, 3.8
Lacing Wire (mm)	2.2	2.2

Regular Size of Hexagonal Mesh Gabion Box

Item	Lengthm	Widthm	Heightm	Cell Nos	Volume
	m	m	m		m^3
HGBT-01	2	1	1	2	2
HGBT-02	3	1	1	3	3
HGBT-03	4	1	1	4	4
HGBT-04	2	1	0.5	2	1
HGBT-05	3	1	0.5	3	1.5
HGBT-06	4	1	0.5	4	2
HGBT-07	2	1	0.3	2	0.6
HGBT-08	3	1	0.3	3	0.9
HGBT-09	4	1	0.3	4	1.2

Standard

ASTM Standard

- **A975 - 11**

Standard Specification for Double–Twisted Hexagonal Mesh Gabions and Revet Mattresses.

- **A641 / A641M - 09a**

Standard Specification for Zinc–Coated (Galvanized) Carbon Steel Wire.

- **A856 / A856M - 03**

Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire.

BS Standard

- **BS EN 10223-2**

Steel wire and wire products for fencing and netting. Hexagonal steel wire netting for agricultural, insulation and fencing purposes

- **BS EN 10223-3**

Steel Wire And Wire Products For Fencing And Netting - Part 3: Hexagonal Steel Wire Mesh Products For Civil Engineering Purposes.

- **BS EN 10244-2**

Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire.

- **BS 1052:1980**

Specification for mild steel wire for general engineering purposes.

Our Tolerance Standard: on the hexagonal double-twisted wire mesh, size of opening should not exceed ± 5% on the nominal dimension.

Technical Parameter

Wire

- **Tensile strength.**
  The tensile strength of the wire used for the production of gabion and the lacing wire should be 350–500 N/mm2 according to EN 10223-3.

- **Tolerance.**
  Tolerance of wire shown at Tab.2 meet the requirements of EN-10218.

- **Elongation.**
  Elongation shall not be less than 10% according to EN 10223-3. (The test must be carried out before a sample at least 25 cm long is made into mesh).

- **Galfan coating.**
  The minimum quantities of Galfan shown at Tab.2 meet the requirements of EN 10244-2.

- **Adhesion of Galfan:**
  The adhesion of the Galfan coating to the wire should be such that, when the wire is wrapped six turns round on a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers.

Galfan Coated Gabion Box

- **Material.**
  Mild steel heavily galvanized with Galfan (a Zn-Al 5%–MM (mischmetal) alloy.)

- **Structure.**
  hexagonal double twisted wire mesh, and it is divided into cells by means of diaphragms positioned at 1 m centers. (Fig 1 and Fig.2)

- **Standard combinations mesh/wire.**
  Type: 80 mm × 100 mm.
  Wire diameter: 2.7 mm, 3.7 mm (PVC coated).
  D: 80 mm
  Tolerance: +16%, -4%.

- **Diameter.**
  Mesh wire diameter: 2.7 mm
  Selvedge wire diameter: 3.4 mm
  Lacing wire diameter: 2.2 mm.

- **Dimensions and tolerances on sizes** are shown at Tab.1.

Galfan Coated Gabion Box with PVC Sleeve

- **Colour**

grey-RAL 7037, according to ASTM D2244-16.

- **Specific weight**

between 1.30 and 1.35 dN/dm3, according to ASTM D792-13.

- **Hardness**

between 50 and 60 Shore D, according to ASTM D2240-15e1.

- **Tensile strength**

not less than 210 dN/cm2, according to ASTM D412-16.

- **Elongation**

between 200% and 280%, according to ASTM D412-16.

- **Weight loss**

less than 5% after 24 hours at 105 °C, according to ASTM D2287-12.

- **Residual ashes**

less than 2%, according to ASTM D2124-99.

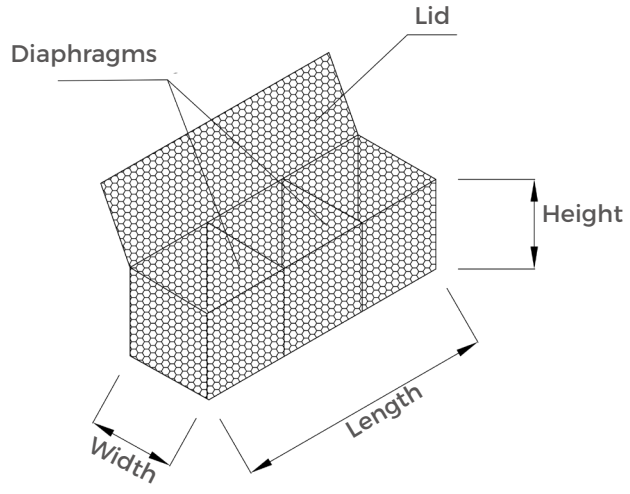
- **Artificial ageing tests**

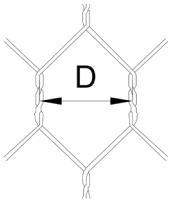
Salt spray test: test period 1500 hours, test method ASTM B117-16.

Exposure to UV rays: test period 2000 hours at 63 °C, test method ASTM D1499-13 and ASTM G152-13 apparatus type E; exposure to high temperatures: test period 24 hours at 105 °C, test method ASTM D1203-16 and ASTM D2287-12.

Length(m)	Width(m)	Height(m)	Tolerance
2	1	0.5–1	Length: ± 5% Width: ± 5% Height: ± 5%
2	1	0.5–1	
4	1	0.5–1	
1.5	1	1	

Mesh Wire Diameter mm	Tolerance of Wire Diameter	Quantity of Galfan Zn-Al 5% – MM gr/m2
2.00	0.06	215
2.20	0.06	230
2.40	0.06	230
2.70	0.06	245
3.00	0.07	255
3.40	0.07	265
3.90	0.07	275

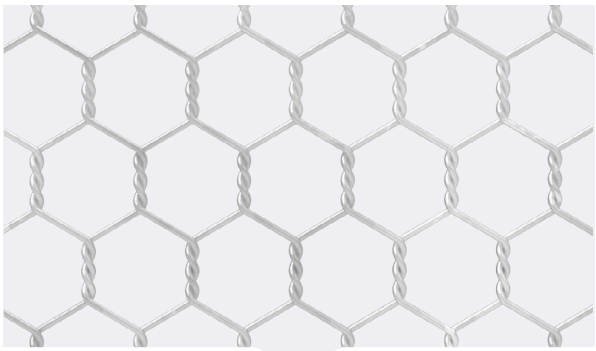




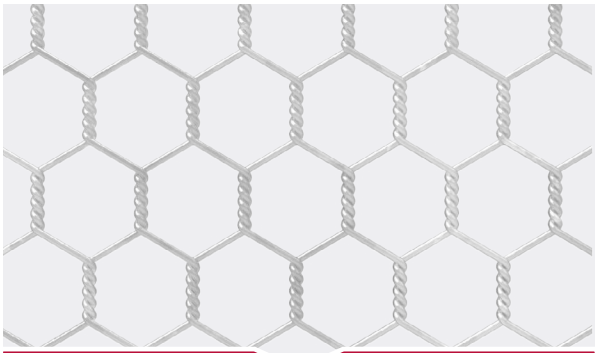
MESH TOLERANCE
The tolerance on the opening of mesh "D" being the distance between the axes of twist, is according to EN 10223-3

Different classification

- **According to the twist type**

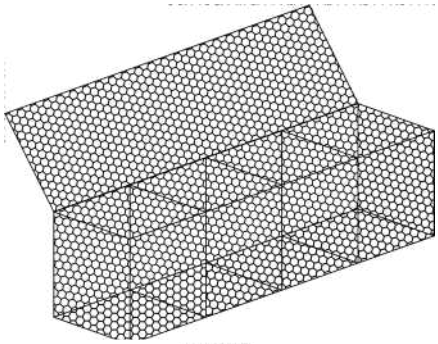


Double twisted hexagonal mesh

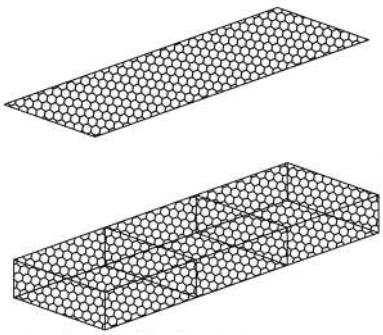


Triple twisted hexagonal mesh

- **According to the height**



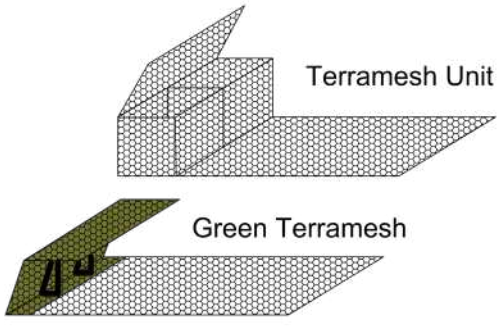
Gabion box



Gabion mattress

- **Extended products**

Terra mesh: this type is particularly applied as slope forming. Faced by gabion and reinforced by roll mesh, terra mesh gives the slope project firm soil stabilization property.



The drawing of terra mesh

Terra mesh application

Assembly and Erection

ASTM Standard

- Unfold the panels, erect corners and diaphragms and bind them to the side panels.

- Lacing wire is supplied together with the gabion. For a correct lacing operation, the wire should be passed through each mesh, making a double twist every other mesh (Fig.3).

- **Steel rings can be instead of lacing wire (Fig.4-5), it has the following specifications:**
Diameter: 300 mm.
Tensile strength: 170 kg/mm^2.
Galfan coated rings for Galfan coated and for plastic coated products..

- Fill the gabion with stones, whose minimum size is not less than dimension "D" of mesh, and maximum size is about 2.5 times "D". Bigger stones are accepted if their total volume does not exceed 5% of the cell volume.

- Check filling at the corners. Compaction is not necessary.

- Bind the lid down with the usual lacing operation.

Note: all gabion must be connected to each other along all corners with the same lacing operation.

Fig.3

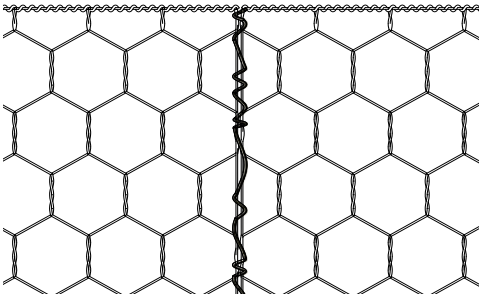


Fig.4

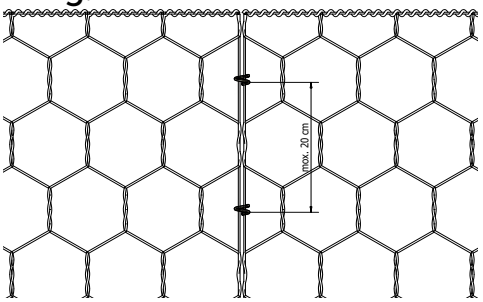
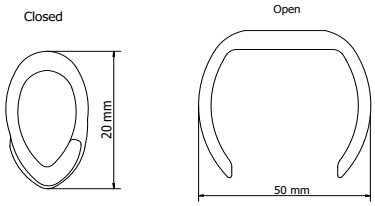


Fig.5

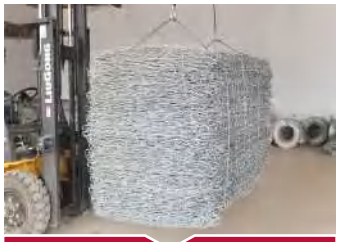


Package and loading

For easy handling and transportation, gabion box is usually shipped in bundle. First, the gabion box is folded and pressed into bundle, and then strapped with steel or nylon bandage. In this way, the gabion box package is in smallest dimension with suitable unit weight. Gabion is usually placed into 40 ft. container to maximize the freight cost.

Folded and pressed into bundle

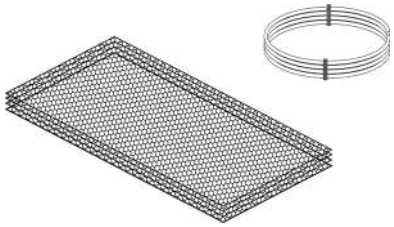
Strapped with bandage



Loading

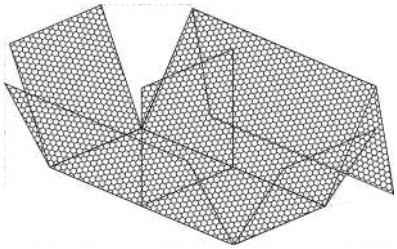
Transportation

Installation process



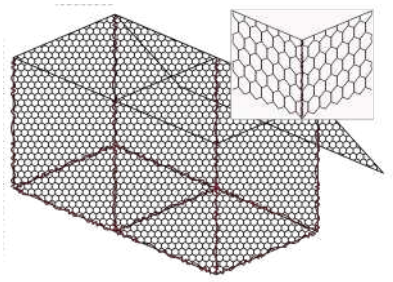
Prepare Materials

1 Prepare all needed gabion panels and lacing wires.



Erect Each Section Up

2 Erect front, back and all diaphragms vertically.

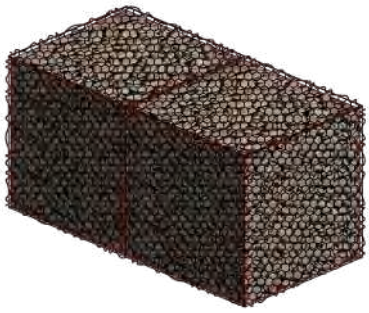


Fasten with lacing wire

3 Fasten and secure each panels together with lacing wires.

Fill Gabions with stones

4 Gabion box is filled with stones by hand or with a shovel.



Cover lid with lacing wire

5 When gabions are filled with stones, cover the lids with lacing wire.

Continue construction

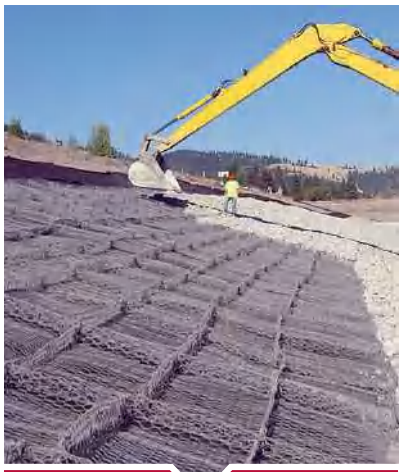
6 Combine gabion mattress and gabion boxes step by step to build your projects.

Application

Hexagonal mesh gabion box is widely use in the coastal embankment works and hydraulic structures, such as dams and culverts to do the following things:

- Soil erosion control to strength soil structure.
- Protect the roadway and bridge.
- Flood control.
- Retaining wall.
- Protect the engineering of seaside area.
- The control and guide of water.

Protect the river bank



Soil erosion control

Protect the engineering of seawater area

Protect the roadway

Control and guide for water

Retaining wall

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