

# PLASTIC COATED BOX GABIONS

## GALFAN COATED BOX GABIONS

The box gabion is a structure made of hexagonal double twisted wire mesh (Fig. 1 and 2).

The wire used in the manufacture of the gabion is a mild steel heavily galvanized with GALFAN, a Zn-Al5% - MM (mischmetal) alloy.

The standard combinations mesh/wire are shown in Tab.1.

In order to reinforce the structure, all edges are selvaged with a wire having greater diameter (Tab. 3).

The gabion can be divided into cells by means of diaphragms positioned at 1 m centres (Fig. 1).

Dimensions and tolerances on sizes are shown at Tab. 2.

### Wire

1) **Tensile strength:** both the wire used for the manufacture of gabions and the lacing wire, shall have a tensile strength of 350-500 N/mm<sup>2</sup> according to EN-10223-3. Above values are referred to wire before manufacturing mesh.

Tolerances of wire shown at Tab. 4 meet the requirements of EN-10218.

2) **Elongation:** the test must be carried out before manufacturing mesh on a sample at least 25 cm long.

Elongation shall not be less than 10% as per EN-10223-3.

3) **Galfan coating:** minimum quantities of Galfan, shown at Tab. 4 meet the requirements of EN 10244-2 for Zinc or Zn-Al5% - MM coatings (Class A) and ASTM 856-98 (Class 80).

4) **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 BOX GABIONS WITH PVC SLEEVE

In addition to the galvanization, the steel wire is coated with a PVC sheath of a nominal thickness of 0,50 mm. The technical characteristics and the resistance of the PVC to ageing meet the relevant standards. The main values for the PVC material are as follows:

**Colour:** grey-RAL 7037 according to ASTM D 1482-57T;

**Specific weight:** between 1,30 and 1,35 dN/dm<sup>3</sup>, according to ASTM D792-91;

**Hardness:** between 50 and 60 Shore D, according to ASTM D 2240-91;

**Tensile strength:** not less than 210 dN/cm<sup>2</sup>, according to ASTM D412-92;

**Elongation:** between 200% and 280% according to ASTM D412-92;

**Weight loss:** less than 5% after 24 hours at 105°C, according to ASTM D2287-92;

**Residual ashes:** less than 2% according to ASTM D2124-62T;

**Abrasion resistance:** loss in volume less than 0.30 cm<sup>3</sup>, according to ASTM D1242-56(75), test method A.

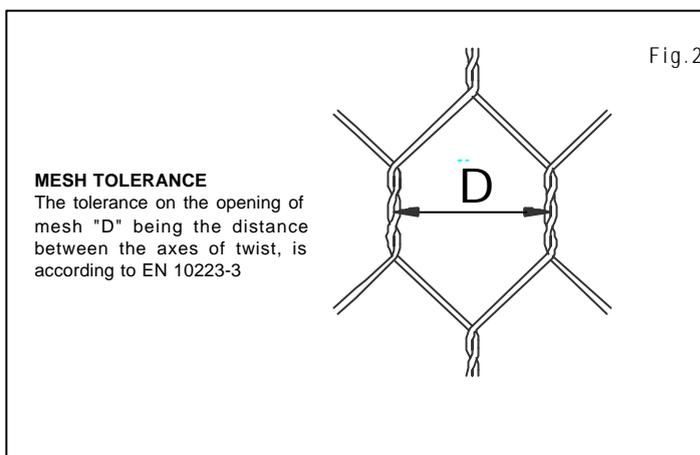
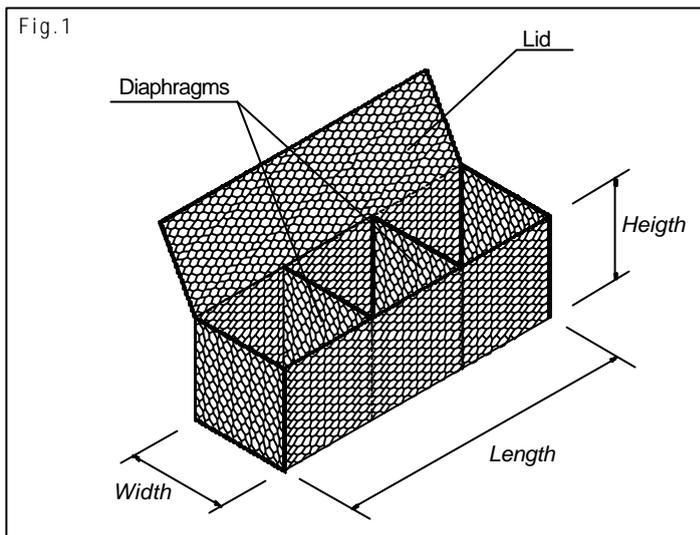
The specific artificial ageing tests are:

**salt spray test:** test period 1,500 hours, test method ASTM-B 117-90;

**exposure to UV rays:** test period 2,000 hours at 63°C, test method ASTM D1499-92 and ASTM G23-93 apparatus type E;

**exposure to high temperatures:** test period 24 hours at 105°C, test method ASTM D1203-89 and ASTM D2287-92;

**brittleness temperature:** Cold Bend less than -30°C test method BS2782-104 A; Cold Flex less than +15°C in accordance with BS 2782-151A (84).

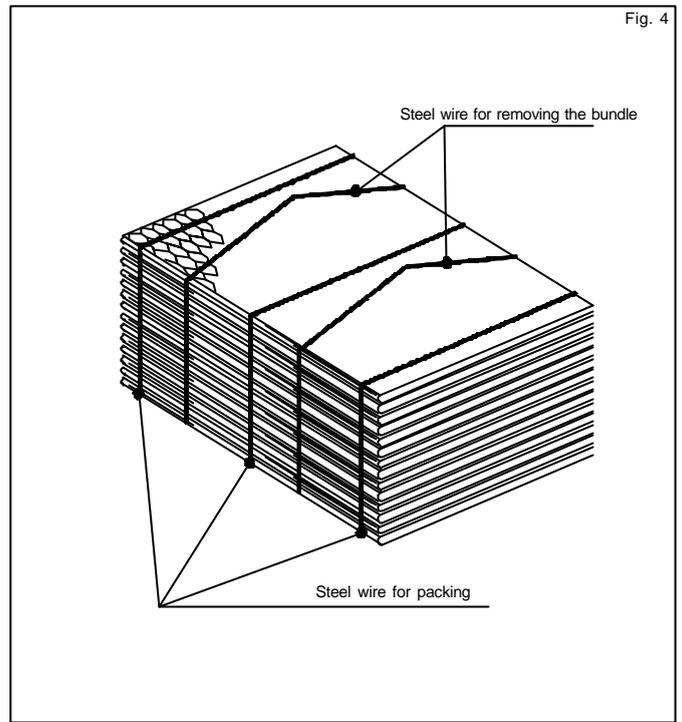
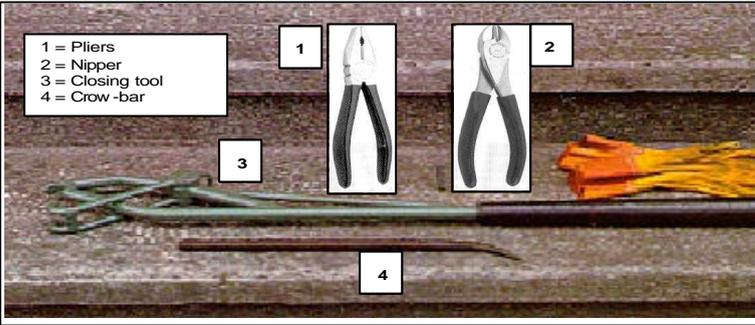
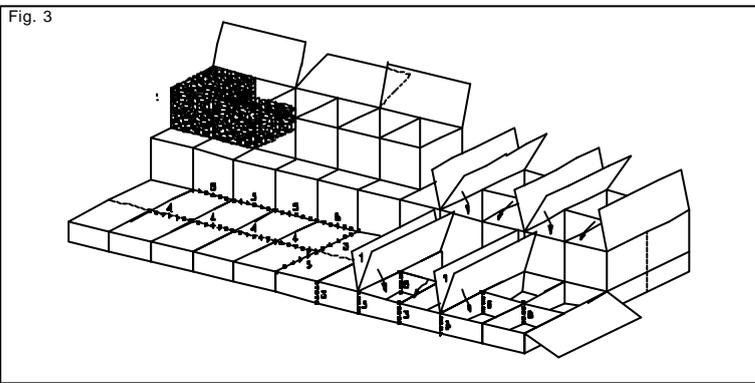


Tab. 1

STANDARD COMBINATIONS MESH-WIRE			
Type	D(mm)	Tolerances	F Wire (mm)
8x10	80	+16% -4%	2.7/3,7 PVC coated

Tab. 2

Length (m)	Width (m)	Height (m)	Tolerances
2	1	1- 0,50	Length ± 5% Width ± 5% Height ± 5%
3	1	1- 0,50	
4	1	1- 0,50	
1,5	1	1	

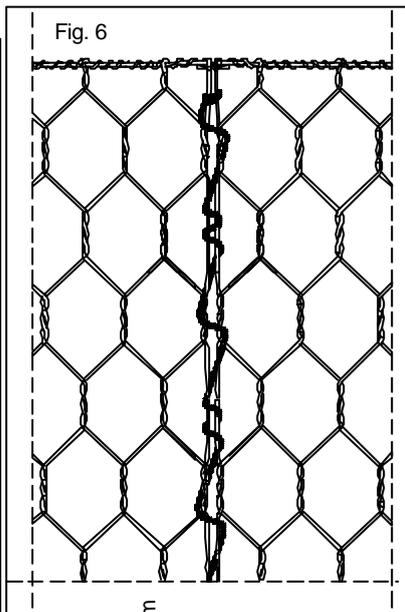


Tab. 3

Mesh wire	Φ mm	2.70
Selvedge wire	Φ mm	3.40
Lacing wire	Φ mm	2.20

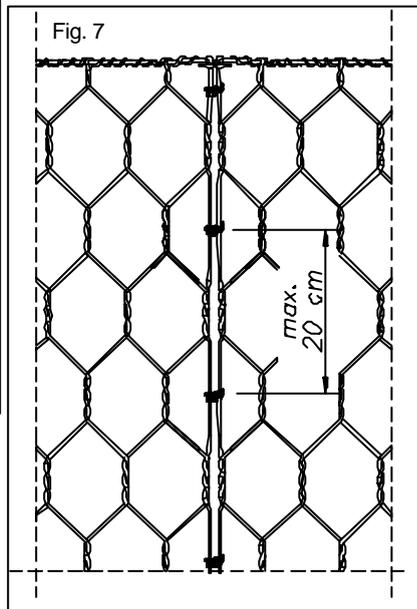
Tab. 4

Mesh wire	Φ mm	2.00	2.20	2.40	2.70	3.00	3.40	3.90
Wire tolerance	Φ mm±	0.06	0.06	0.06	0.06	0.07	0.07	0.07
Quantity of Galfan Zn-Al5% - MM	gr/m <sup>2</sup>	215	230	230	245	255	265	275



### Assembly and erection

- 1) Unfold the units, erect corners and diaphragms and bind them to the side panels. Lacing wire is supplied together with the gabions. For a correct lacing operation, the wire should be passed through each mesh, making a double twist every other mesh (Fig. 6).
- 2) Steel rings can be used instead of lacing wire (Fig.7-8), having the following specifications:
  - diameter: 3,00 mm
  - tensile strength: 170 kg/mm<sup>2</sup>

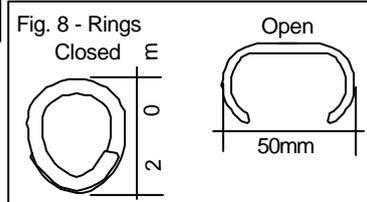


- Galfan coated rings for Galfan coated and for plastic coated products

- 3) 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, provided that their total volume does not exceed 5% of the cell volume. Stones must be durable and, in case of cold climate, non-porous.
  - 4) Check filling at the corners. Compaction is not necessary.
  - 5) Bind the lid down with the usual lacing operation.
- Note: all gabions must be connected to each other along all corners with the same lacing operation.

**Request of offer:** When requesting an offer, please specify: quantities per each size; size of units (lengthxwidthxheight, see fig. 1); type of mesh, wire diameter,

**Example:** No.100 gabions 2x1x1 m - Mesh type 8x10 - Wire Φ 2.7-3,7 mm - plastic coated.



For the optimisation and improvement process of the technical characteristics of the products, the producer reserves the facility to modify standard and characteristics at the product without any warning. The information contained herein is to the best of our knowledge accurate, but since the circumstances and conditions in which it may be used are beyond our control, we do not accept any liability for any loss or damage, however arising, which results directly or indirectly from the use of such information nor do we offer any warranty or immunity against patent infringement.



**Officine Maccaferri SpA**  
 40123 Bologna (Italy)  
 Via Agresti, 6 - P.O.BOX 396  
 Tel. (0039)-516436000 - Fax (0039)-51-236507  
 e-mail: comes.officine@maccaferri.com  
 Web-site: www.maccaferri.com

Quality System Guaranties  
 production, certified internal management and technical  
 assistance in compliance with ISO 9002



Environmental  
 solutions