

**GABIONS**  
ZINC

Gabions are baskets manufactured from double twisted hexagonal woven steel wire mesh type 8x10, made of Class A zinc coated wire in compliance with SANS 1580 and EN 10223-3.

The management and production system is certified in compliance with ISO 9001, ISO 14001 (related to the environmental management system) and ISO 18001 (Occupational health and safety).

Gabions are used for the following purposes: retaining structures, river works, erosion control, noise barriers and architectural works.

Gabions are filled with stones at the project site to form flexible, permeable, monolithic structures including retaining walls, channel linings and weirs for erosion control projects.

In order to reinforce the structure, all mesh panel edges are selvaged with a wire having a greater diameter (Table 3). Dimensions and sizes of zinc coated gabions are shown in Table 1.

**Steel wire mesh**

The nominal tensile strength of the wire mesh is as per Table 2. Tests carried out as per EN 10223-3.

**Wire**

The steel wire used in the manufacture of the unit is heavily galvanized. The standard specifications of mesh-wire are shown in Tables 2 and 3. All tests on wire must be performed prior to manufacturing the mesh.

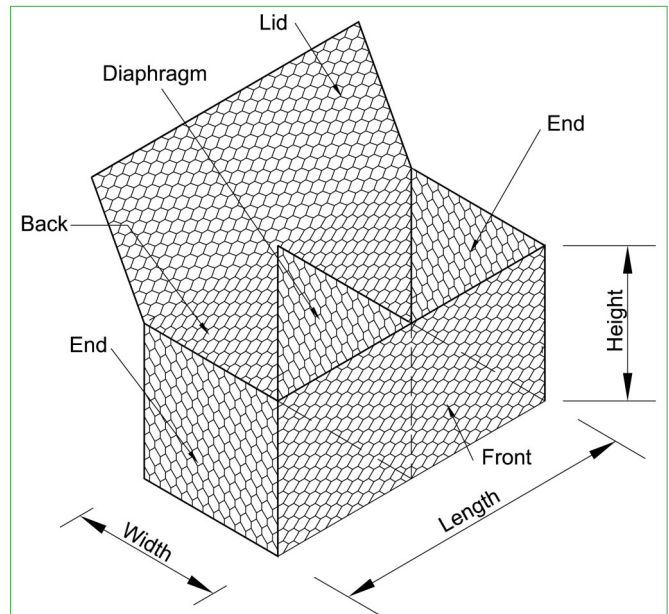


Figure 1

1. **Tensile strength:** the wire used to manufacture gabions has a tensile strength between 350-375 N/mm<sup>2</sup> in accordance with SANS 675. Wire tolerances are shown in Table 3 as per EN 10218 (Class T1).
2. **Elongation:** Elongation at fracture not less than 8%, as per EN 10223-3.
3. **Zinc coating:** minimum quantities of Zinc shown in Table 3 meet the requirements of SANS 1580.
4. **Adhesion of Zinc:** the adhesion of the Zinc coating to the wire is in accordance with SANS 10244-2.
5. **Outwearing accelerated aging test** when subjected to test in sulphur dioxide environment (ISO 6988) after 28 cycles of discontinuous test the mesh shall not show more than 5% of DBR (Dark Brown Rust).

The tolerance on the mesh size 'M' being the distance between the axis of two consecutive twists, is according to EN 10223-3

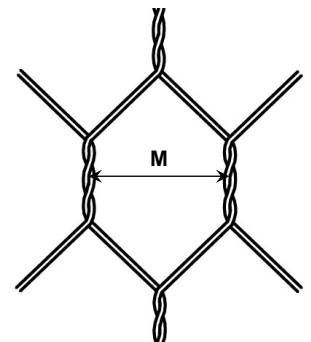


Figure 2



Figure 3: Gabion Zinc coated

Length (m)	Width (m)	Height (m)
1.0	1.0	1.0
1.5	1.0	1.0
2.0	1.0	1.0
3.0	1.0	1.0
4.0	1.0	1.0
2.0	0.5	0.5
2.0	1.0	0.5
3.0	1.0	0.5

All sizes and dimensions are nominal. Tolerances of  $\pm 5\%$  shall be permitted. Other sizes are available but variation to these standard sizes are only manufactured on request and are uneconomical unless manufactured in large quantities.

### Lacing Operations

Binding wire has a wire diameter of 2.2mm diameter and should be purchased in the same specification as the double twisted mesh. See lacing spacing in figure 5. Sold in 25kg rolls (10% of the unit weight is recommended for lacing, bracing and binding of units).

Alternatively, Galvan (Zn 95Al5) coated steel rings (see figure 4) having the following specification can be used instead of lacing wire.

Diameter: 3.00 mm;

Tensile strength: > 1720 Mpa;

Pull-apart strength > 2.0 kN.

Spacing of the rings must not exceed 200 mm (Fig.5)

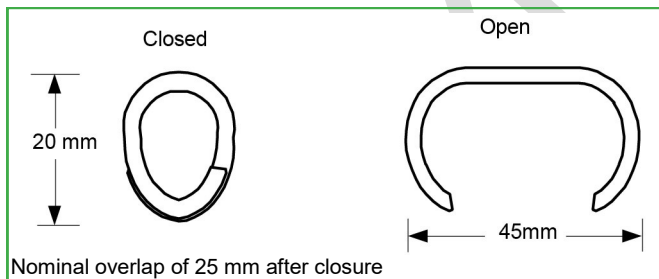


Figure 4

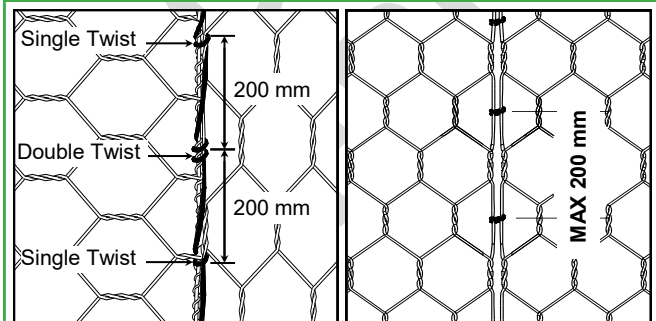


Figure 5: Lacing wire and Rings

Type	M (mm)	Tolerance (mm)	Wire diameter (mm)	Mesh Tensile Strength (kN/m)
8x10	80	-0/+10	2.70	55 $\pm$ 5
			3.0	72 $\pm$ 5

		Mesh wire	Selvedge wire	Lacing wire
Internal diameter 8x10	$\phi$ mm	2.7 3.0	3.4 3.9	2.2 2.5
Wire tolerance	( $\pm$ ) $\phi$ mm	0.06 (2.7) 0.07 (3.0)	0.07	0.06
Min. Zinc quantity	g/m <sup>2</sup>	275 (2.7) 275 (3.0)	275 (3.4) 290 (3.9)	240 (2.2) 260 (2.5)

### Preformed Bracing wire

Preformed bracing wires with a wire diameter of 3.4mm in the same specification as the units required can be purchased for higher finishing (prevention of bulging) of the facing of Gabion and Terramesh System units. These can be purchased individually with a recommendation of 4 pieces per sqm of front face.

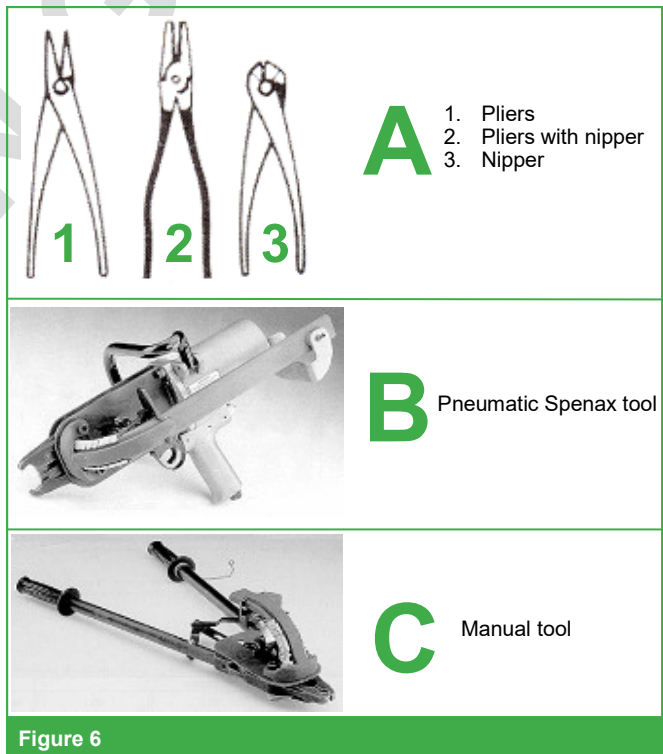


Figure 6