

## GABION GALVANIZED & PVC COATED

### Product Description

Gabions are baskets manufactured from 8x10 double twisted hexagonal woven steel wire mesh, as per ASTM A975 (Figures 1, 2). Gabions are filled with stones at the project site to form flexible, permeable, monolithic structures such as retaining walls, channel linings, and weirs for erosion control projects. The steel wire used in the manufacture of the gabion is heavily zinc coated soft temper steel. A PVC coating is then applied to provide additional protection for use in polluted, contaminated or aggressive environments: in salt, fresh water, acid soil or wherever the risk of corrosion is present. The PVC coating has a nominal thickness of 0.02 in. (0.50 mm). The standard specifications of the mesh-wire are shown in Table 2.

The gabion is divided into cells by diaphragms positioned at approximately 3 ft (0.9 m) centers (Figure 1).

To reinforce the structure, all mesh panel edges are selvedged with a wire having a greater diameter (Table 3). Dimensions and sizes of PVC coated gabions are shown in Table 1. Gabions shall be manufactured and shipped with all components mechanically connected at the production facility.

### Wire

All tests on wire must be performed prior to manufacturing the mesh. All wire should comply with ASTM A975, style 3 coating, galvanized and PVC coated steel wire. Wire used for the manufacture of gabions and the lacing wire, shall have a maximum tensile strength of 75 000 psi (515 MPa) as per ASTM A641/A641M-03, soft temper steel.

### Woven Wire Mesh Type 8x10

The mesh and wire characteristics shall be in accordance with ASTM A975 Table 1, Mesh type 8x10 and PVC coated. The nominal mesh opening,  $D = 3.25$  in. (83 mm) as per Figure 2. The minimum mesh properties for strength and flexibility should be in accordance with the following:

*Mesh Tensile Strength* shall be a minimum of 3425 lb/ft (50.0 kN/m) when tested in accordance with ASTM A975 section 13.1.1.

*Punch Test* resistance shall be a minimum of 5300 lb (23.6 kN) when tested in compliance with ASTM A975 section 13.1.4.

*Connection to Selvedges* shall be 1200 lb/ft (17.5 kN/m) when tested in accordance with ASTM A975.

### P.V.C. (Polyvinyl Chloride) Coating

The technical characteristics and the resistance of the PVC to aging should meet the relevant standards. The main values for the PVC material are as follows:

The initial property of the PVC coating shall be in compliance with ASTM A975 section 8.2.

Prior to UV and abrasion degradation, the PVC polymer coating shall have a projected minimum durability of 69 years when tested in accordance with *UL 746B Polymeric Material-Long Term Property Evaluation* for heat aging test.

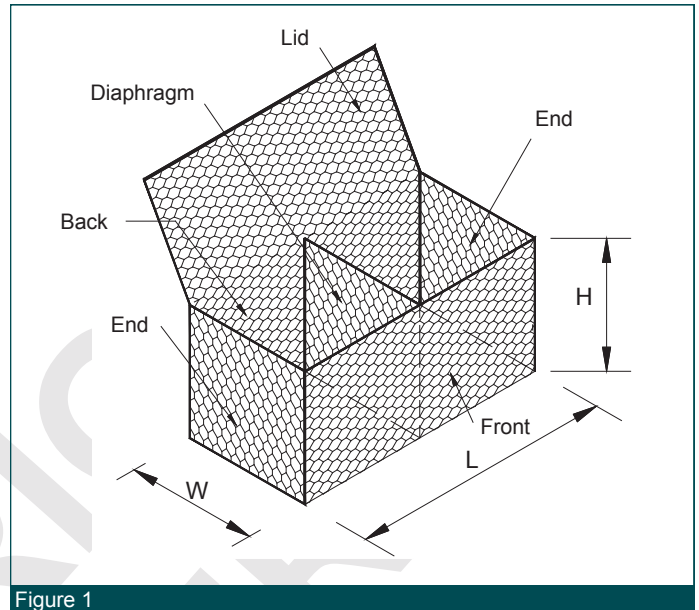
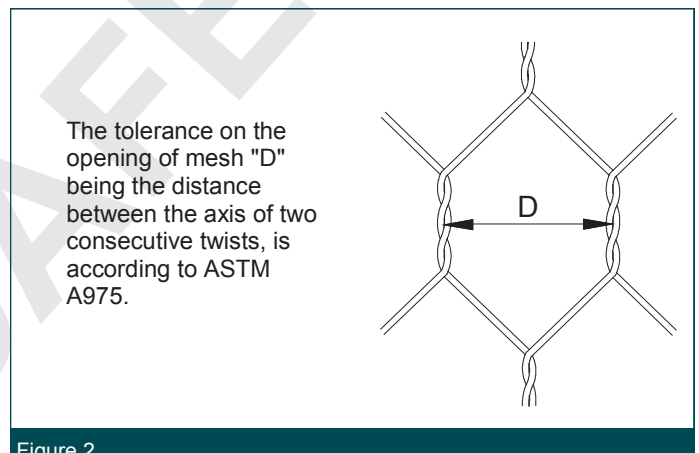


Figure 1



The tolerance on the opening of mesh "D" being the distance between the axis of two consecutive twists, is according to ASTM A975.

Figure 2

### Lacing, Assembly and Installation

Gabion units are assembled and connected to one another using lacing wire specified in Table 3 and described in Figure 3. MacTie preformed stiffeners or lacing wire can be used as internal connecting wires when a structure requires more than one layer of gabions to be stacked on top of each other. Internal connecting wires with lacing wire shall connect the exposed face of a cell to the opposite side of the cell. Internal connecting preformed stiffeners shall connect the exposed face of a cell to the adjacent side of the cell. Preformed stiffeners are installed at 45° to the face/side of the unit, extending an equal distance along each side to be braced (approximately 1 ft. (300 mm)). An exposed face is any side of a gabion cell that will be exposed or unsupported after the structure is completed. Stainless steel ring fasteners can be used instead of, or to complement, the lacing wire (Figure 4).

**Table 1 - Sizes for gabions**

L=Length ft (m)	W=Width ft (m)	H=Height ft (m)	# of cells
6 (1.8)	3 (0.9)	3 (0.9)	2
9 (2.7)	3 (0.9)	3 (0.9)	3
12 (3.6)	3 (0.9)	3 (0.9)	4
6 (1.8)	3 (0.9)	1.5 (0.45)	2
9 (2.7)	3 (0.9)	1.5 (0.45)	3
12 (3.6)	3 (0.9)	1.5 (0.45)	4
6 (1.8)	3 (0.9)	1 (0.3)	2
9 (2.7)	3 (0.9)	1 (0.3)	3
12 (3.6)	3 (0.9)	1 (0.3)	4
4.5 (1.4)	3 (0.9)	3 (0.9)	1
12 (3.6)**	6 (1.8)	1 (0.3)	4

\*\*This Gabion has 6' X 3' cells. All sizes and dimensions are nominal. Tolerances of  $\pm 5\%$  of the length, width, and height of the gabions shall be permitted.

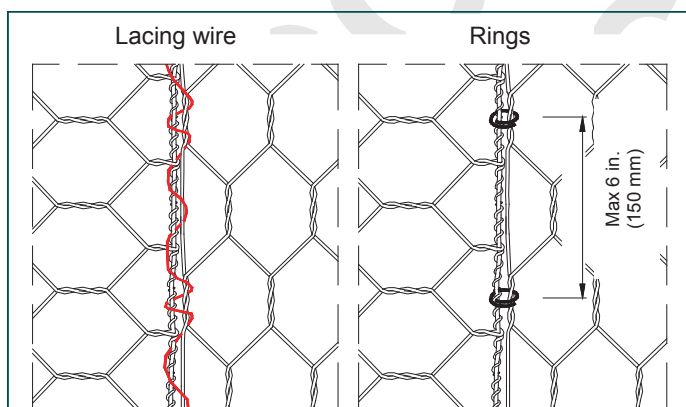
Stainless steel rings for PVC coated gabions shall be in accordance with ASTM A975 section 6.3.

Spacing of the rings shall be in accordance with ASTM A975 Table 2, Panel to Panel connection, Pull-Apart Resistance. In any case, ring fasteners spacing shall not exceed 6 in. (150 mm) (Figure 3).

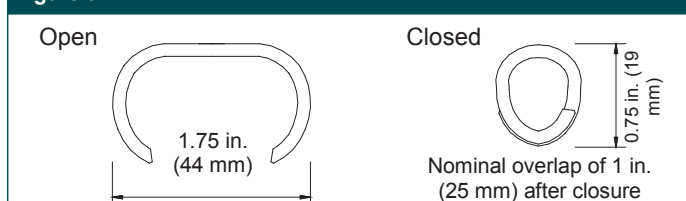
The rings can be installed using pneumatic or manual tools (Figure 5).

For full details, please see the Gabion Product Installation Guide.

The average maximum resistance of the fasteners from the field shall not be lower than 90% of the resistance provided in the certification.



**Figure 3**



**Figure 4**

**Table 2 - Standard mesh-wire**

Type	D in. (mm)	Tolerance	Internal Wire Dia in. (mm)	External Wire Dia in. (mm)
8x10/ ZN+PVC	3.25 (83)	$\pm 10\%$	0.106 (2.70)	0.146 (3.70)

**Table 3 - Standard wire diameters**

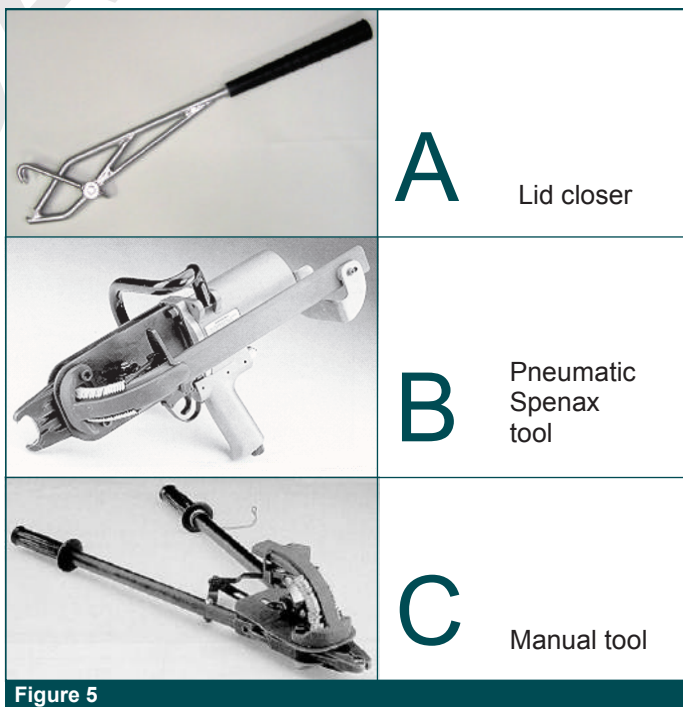
	Lacing Wire	Mesh Wire	Selvedge Wire / Preformed Stiffeners
Mesh Wire Diameter $\varnothing$ in. (mm)	0.087 (2.2)	0.106 (2.7)	0.134 (3.4)
Wire Tolerance ( $\pm$ ) $\varnothing$ in. (mm)	0.004 (0.10)	0.004 (0.10)	0.004 (0.10)
Minimum Quantity/Zinc oz/ft <sup>2</sup> (g/m <sup>2</sup> )	0.70 (214)	0.80 (244)	0.85 (259)
Wire+PVC diameter in. (mm)	0.127 (3.20)	0.146 (3.70)	0.174 (4.40)

### Quantity Request

When requesting a quotation, please specify:

- Number of units,
- Size of units (length x width x height, see Table 1),
- Type of mesh,
- Type of coating.

EXAMPLE: No. 100 gabions, 6x3x3, Mesh type 8x10, Wire diameter 0.106 in. (2.70 mm), Galvanized + PVC coated.



**Figure 5**

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