

GABION MATTRESS GALVANIZED

The gabion mattress is a structure made of 6x8 double twisted hexagonal woven steel wire mesh type as per ASTM A975 (Figures 1 and 2). Gabion mattresses are filled with stones at the project site to form flexible and permeable, monolithic structures such as river bank protection and channel linings for erosion control.

The steel wire used in the manufacture of the mattress is heavily zinc coated soft temper steel. The standard specifications of mesh and wire are shown in Table 2.

To reinforce the structure, all mesh panel edges are selvedged with a wire having a greater diameter (Table 3).

Gabion mattresses are divided into cells by internal diaphragms. Dimensions and sizes of Gabion mattresses are shown in Table 1.

Wire

All tests on wire must be performed prior to manufacturing the mesh. All wire should comply with ASTM A975, style 1 coating. Wire used for the manufacture of gabion mattresses and the lacing wire, shall have a maximum tensile strength of 75,000 psi (515 MPa) as per ASTM A641/A641M, soft temper steel.

Woven Wire Mesh Type 6x8

The mesh and wire characteristics shall be in accordance with ASTM A975 Table 1, Mesh type 6x8. The nominal mesh opening $D = 2.5$ in. (64 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 2300 lb/ft (33.6 kN/m) minimum when tested in accordance with ASTM A975 section 13.1.1.

Punch Test resistance shall be a minimum of 4000 lb (17.8 kN) when tested in compliance with ASTM A975 section 13.1.4 .

Connection to Selvedges should be 700 lb/ft (10.2 kN/m) when tested in accordance with ASTM A975.

Lacing, Assembly and Installation

Gabion mattresses are assembled and connected using lacing wire specified in Table 3 and described in Figure 4. Galvanized steel ring fasteners can be used instead of, or to complement, lacing wire (Figure 5 and Figure 6).

Galvanized steel rings for galvanized Gabion mattresses 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 4).

Steel fasteners can be placed using pneumatic or manual tools (Figure 6).

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

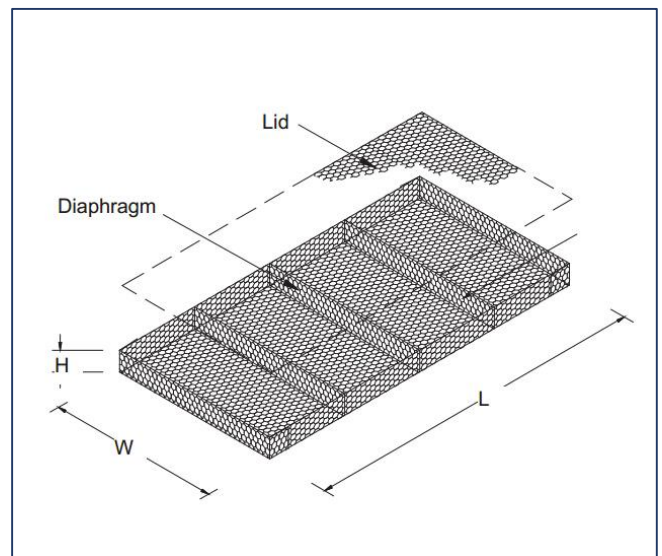


Figure 1

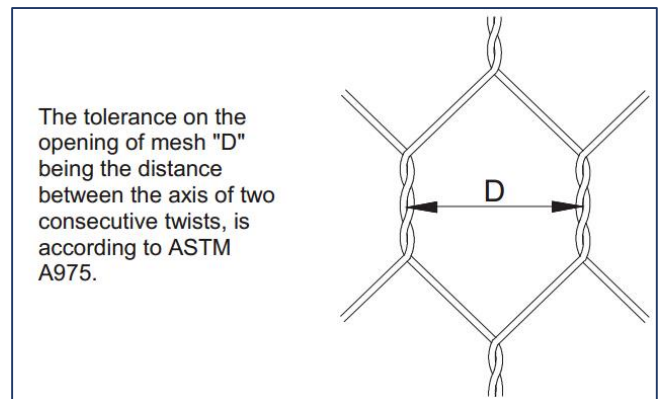


Figure 2

ZHUODA GABION

Table 1 - Sizes for gabion mattress

L (m)	W (m)	H (m)	# of Cells
3	2	0.15	3
4	2	0.15	4
3	2	0.23	3
4	2	0.23	4
6	2	0.23	6
6	2	0.30	6

All sizes and dimensions are nominal. Tolerances of $\pm 5\%$ of the length and width, and $+ 10\%$ of the height shall be permitted.

Table 2 - Standard mesh wire

Type	D (mm)	Tolerance	Wire Diameter (mm)
6x8	64	$\pm 10\%$	2.20

Table 3 - Standard wire diameters

		Lacing Wire	Mesh Wire	Selvedge Wire
Wire Diameter	ϕ mm	2.20	2.20	2.70
Wire Tolerance	$(\pm) \phi$ mm	0.10	0.10	0.10
Min. Qty of Zinc	gr/m ²	214	214	244



Figure 3

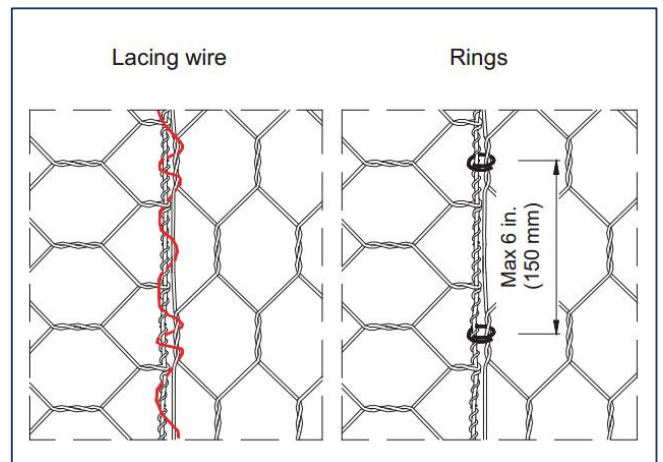


Figure 4

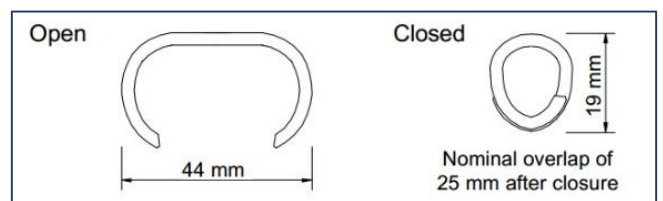


Figure 5



Figure 6

Anping County Zhuoda Hardware Mesh Co., Ltd.

Kehulin Industrial Park, Anping County, Hebei 053600, China

Tel: +86-311-67795238/89902855 Fax: +86-311-67795238

Email: sales@zhuoda-gabion.com

Website: www.zhuoda-gabion.com

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