MACCAFERRI

TECHNICAL DATA SHEET

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RENO MATTRESS
GALMAC® COATED

Reno Mattresses are units manufactured from double twisted hexagonal woven steel wire mesh 6x10 or 8x10 type as per EN 10223-3:2013 (Figs. 1, 2). Reno mattresses 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 standard specifications of mesh-wire are shown in Table 2. Reno mattresses are divided into uniformly positioned cells by internal diaphragms (Fig.1). In order to reinforce the structure, all mesh panel edges are selvedged with a wire having a greater diameter (Table 3). Dimensions and sizes of gabions are shown in Table 1. The material is supplied from an ISO 9001 certified factory.

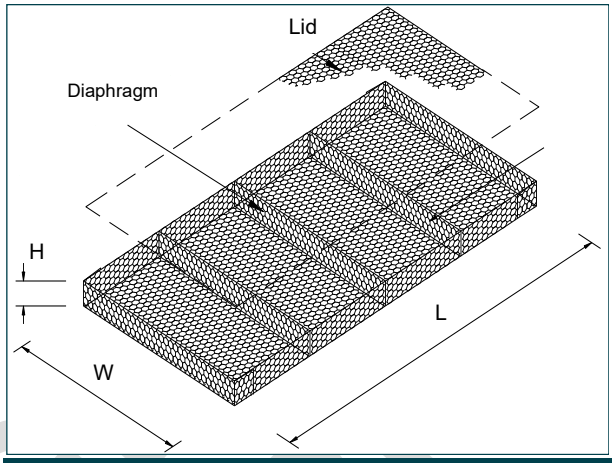

Figure 1

Steel wire mesh

The nominal tensile strength of the wire mesh shall be as per Table 2 (EN 10223-3:2013). The punch strength of the wire mesh shall be as per table 2 (UNI 11437).

Wire

The steel wire used in the manufacture of the unit is galvanized with Galmac, a Zn-5%Al alloy. The standard specifications of wire are shown in Tables 3. All tests on wire must be performed prior to manufacturing the mesh.

1. **Tensile strength:** the wire used for the manufacture of gabions shall have a tensile strength between 350-550 N/mm^2 as per EN 10223-3:2013. Wire tolerances (Table 4) are in accordance with EN 10218 (Class T1).
2. **Elongation:** Elongation at fracture shall not be less than 8%, on a gauge length of 250 mm as per EN 10223-3: 2013.
3. **Galmac coating:** minimum quantities of Galmac (Table 4) meet the requirements of EN 10244-2 (Table 2 - Class A).
4. **Adhesion of Galmac:** the adhesion of the Galmac coating to the wire shall be such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, according to EN 10244.
5. **Outwearing accelerated aging test:** when subjected to test in sulphur dioxide environment (EN 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: 2013

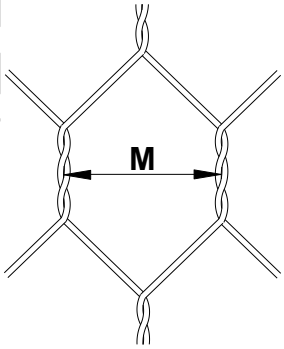

Figure 2

Table 1: Sizes of gabions

Length (m)	Width (m)	Height (m)
3	2	0.17 - 0.23 - 0.30
4	2	0.17 - 0.23 - 0.30
5	2	0.17 - 0.23 - 0.30
6	2	0.17 - 0.23 - 0.30

All sizes and dimensions are nominal.
Tolerances of ±5% of the length, width and ±2.5 cm of the height shall be permitted (EN 10223-3:2013).
Minimum thickness of mesh 8x10 is 0.23m

Table 2: Standard Mesh-Wire

Type	M (mm)	Tolerance (mm)	Wire Diameter (mm)	Mesh Tensile Strength (kN/m)	Punch Strength (kN)
6x8	60	-0/+8	2.2	37	42
8x10	80	-0/+10	2.7	50	67

Table 3: Standard wire diameters

		Mesh Wire	Selvedge Wire	Lacing Wire
6x8 Mesh Type	ø mm	2.2	2.4	2.2
6x8 Mesh Type	ø mm	2.2	2.7	2.2
8x10 Mesh Type	ø mm	2.2	3.4	2.2

Table 4: Wire tolerances and coatings

Wire diameter	mm	2.00	2.20	2.70	3.4
Wire diameter tolerance	(±) mm	0.05	0.06	0.06	0.07
Minimum Galmac quantity	g/m^2	215	230	245	265

Quantity Request

When requesting a quotation, please specify:
• size of units (length x width x height, see Table 1)
• type of mesh
• type of coating
EXAMPLE: No. 100 Reno mattress 4x2x0.23m - Mesh type 6x8 - Wire diam. 2.20 mm - Galmac coated.

Lacing Operations

Lacing operations can be made by using the tools shown in Fig.5. Stainless steel rings having the following specification can be used instead of lacing wire (Figs. 3, 4):

- diameter: 3.00 mm
- tensile strength: >1700 - 1900N

Spacing of the rings must not exceed 200 mm (Fig.3)

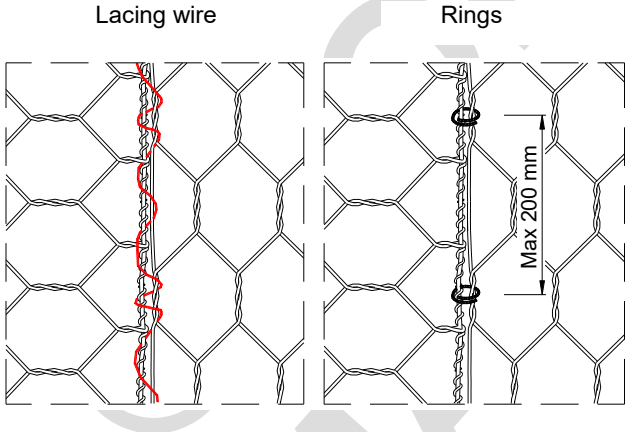

Figure 3

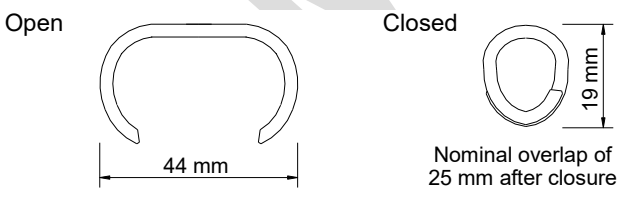

Figure 4

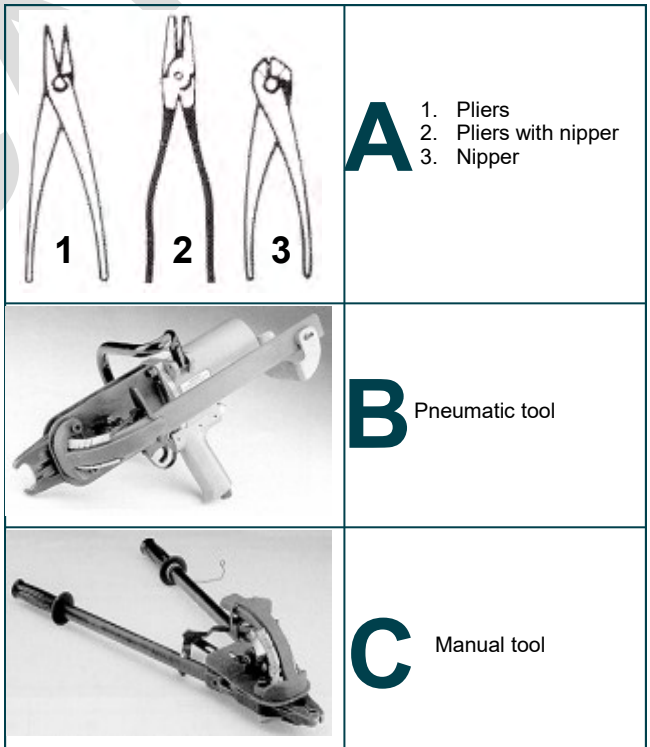

Figure 5

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