

RENO MATTRESS POLYMAC

The Reno mattress is a structure made of hexagonal double twisted wire mesh, with mechanical characteristics higher than the ones suggested from EN 10223-3 (Figs. 1, 2). Reno 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 to manufacture the mattress is heavily galvanized with Galfan, a Zn-5%Al-MM (mischmetal) alloy. A polymer (self extinguish modified polyethylene) coating is then applied to provide added protection for use in aggressive environments where soil or water are acidic: in salt or fresh water, or wherever the risk of corrosion is present. The polymer coating has a nominal thickness of 0.50 mm. The standard combinations of mesh and wire are shown in Tab. 2.

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

Reno mattresses are divided into uniformly partitioned cells by internal diaphragms.

Wire

All tests on wire must be performed prior to manufacturing the mesh.

- Tensile strength:** the wire used for the manufacture of Reno mattresses and the lacing wire, shall have a tensile strength between 350-550 kg/mm² exceeding, in order to increase the tensile resistance of the finished products, what is suggested from EN 10223-3. Wire tolerances (Tab. 3) are in accordance with EN 10218 (Class T1).
- Elongation:** Elongation shall not be less than 9%, exceeding, in order to increase the tensile resistance of the finished products, what is suggested from EN 10223-3. Test must be carried out on a sample at least 25 cm long.
- Galfan coating:** minimum quantities of Galfan shown at Tab.3 meet the requirements of EN 10244-2 (Table 2 and Class A).
- Adhesion of Galfan:** the adhesion of the Galfan 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.

X.P.E. coating

In addition to the galvanisation, the steel wire is coated with a self extinguish modified polyethylene (XPE) sheet, according to EN-10245-3 with a nominal thickness of 0,50 mm.

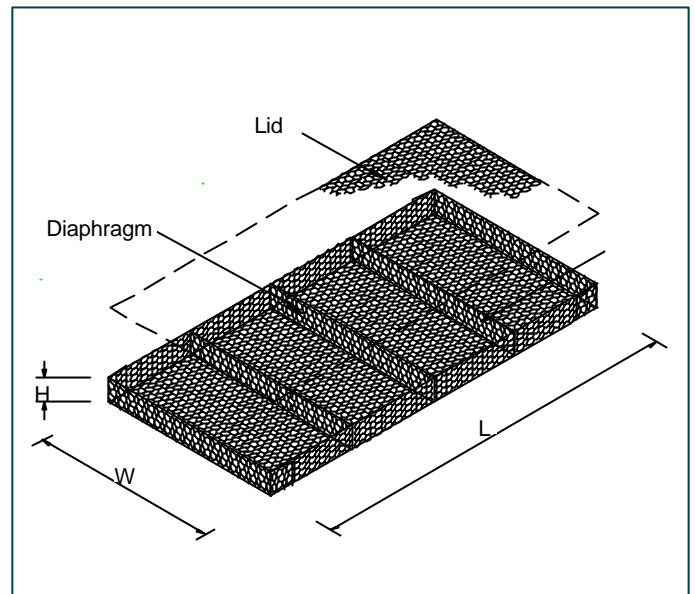


Figure 1

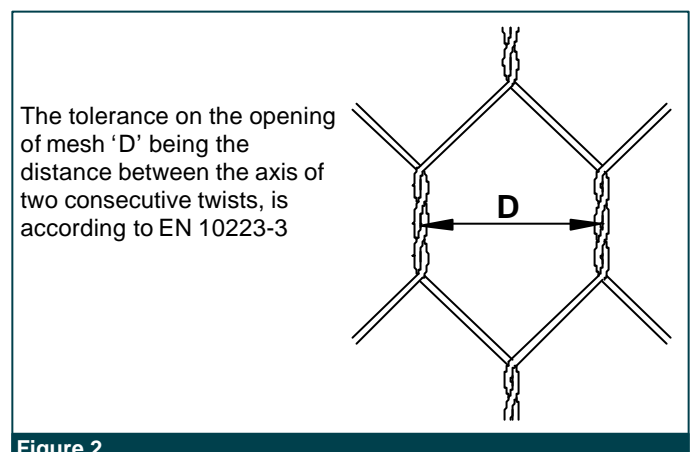


Figure 2

The technical characteristics of the polymer coating are in the following table.

Technical characteristics			
TENSILE STRENGTH			
- yield strength	ASTM D638	Mpa	18
- elongation at Yield		%	40
- strength at break		Mpa	18
- elongation at break		%	480
- elongation at break		Mpa	780
STRENGTH AT TEMPERATURE			
- Hot Set Test (H.S.T.)*	EIC 540	%	<100%
- Residual elongation	EIC 540	%	<15%
FIRE RESISTANCE			
	ASTM D479		
- flame application time	sec.		30
- self extinguish time	sec.		35
- dripping during flame exposure			NO
- burned length	mm		30

L=Length (m)	W=Width (m)	H=Height (m)	Mesh type
3	2	0.17-0.23-0.30	6x8
4	2	0.17-0.23-0.30	6x8
5	2	0.17-0.23-0.30	6x8
6	2	0.17-0.23-0.30	6x8

All sizes and dimensions are nominal.
Tolerances of $\pm 3\%$ of the width, length, and ± 2.5 cm of the height of the Reno mattress shall be permitted.

Type	D (mm)	Tolerance	Internal Wire Dia (mm)	External Wire Dia (mm)
6x8	60	+16%/-4%	2.20	3.20

	Mesh Wire	Selvage Wire	Lacing Wire	
Internal Wire Diameter	\varnothing mm	2.2	2.7	2.2
Wire Tolerance	(\pm) \varnothing mm	0.06	0.06	0.06
Min. Q.ty of Galvan	gr/m ²	230	245	230

Lacing Operations

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

- diameter: 3.00 mm
- tensile strength: 170 kg/mm².

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

Quantity Request

When requesting a quote, please specify:

- size of units (length x width x height, see Fig.1),
- type of mesh,
- type of coating

EXAMPLE: No. 100 Reno mattresses 4x2x0.23 m - Mesh type 6x8 - Polymac

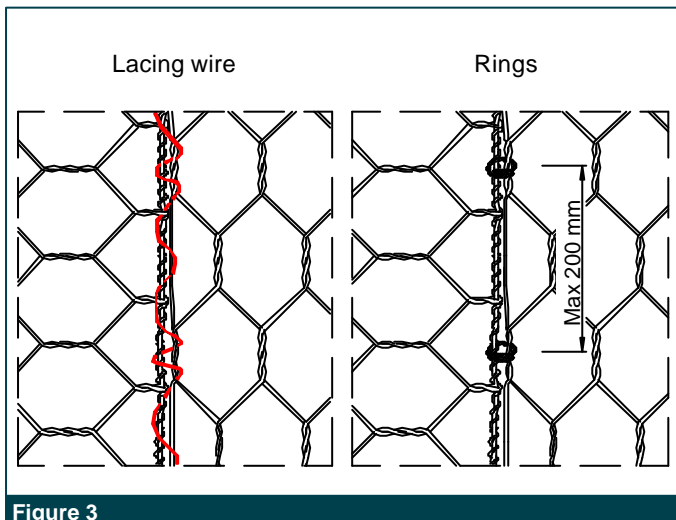


Figure 3

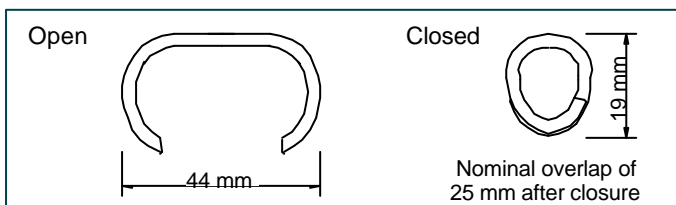


Figure 4

	<p>A</p> <ol style="list-style-type: none"> 1. Pliers 2. Pliers with nipper 3. Nipper
	<p>B</p> <p>Pneumatic Spenax tool</p>
	<p>C</p> <p>Manual tool</p>

Figure 5

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