MACCAFERRI

TECHNICAL DATA SHEET

Rev: 01, Issue Data 12.05.2005

GABIONS

POLYMAC

Gabions are baskets made of double twisted steel woven wire mesh, with mechanical characteristics higher than the ones suggested from EN 10223-3 (Figs. 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 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 polluted environments where soils 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 specifications of mesh-wire are shown in Table 2.

The gabion is divided into cells by means of diaphragms positioned at approximately 1m centers (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 Galfan + Polymer coated gabions are shown in Table 1.

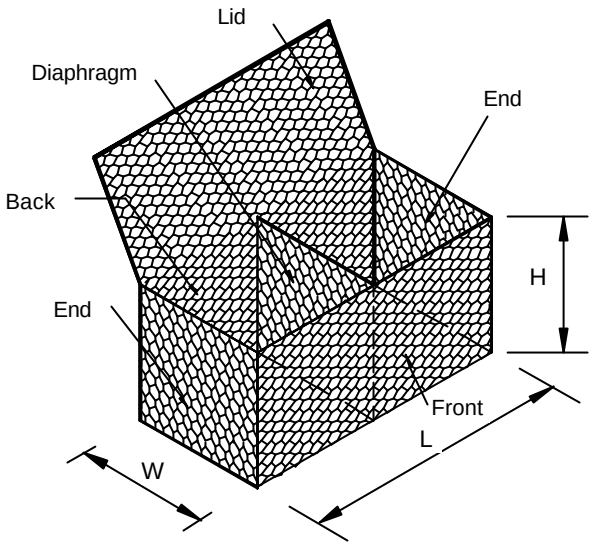

Figure 1

Wire

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 350-550N/mm² exceeding, in order to increase the tensile resistance of the finished products, what is suggested from EN 10223-3. Wire tolerances (Table 3) are in accordance with EN 10218 (Class T1).
2. **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.
3. **Galfan coating:** minimum quantities of Galfan shown at Table 3 meet the requirements of EN 10244-2 (Table 2 and Class A).
4. **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.

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

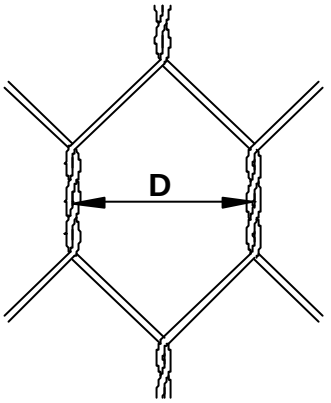

Figure 2

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

Technical characteristics			
TENSILE STRENGTH			
- yield strength	ASTM D638	Mpa	18
- elongation at Yeld		%	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

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Maccaferri reserves the right to amend product specifications without notice and specifiers are requested to check as to the validity of the specifications they are using.

1. Table of sizes for gabions

L=Length (m)	W=Width (m)	H=Height (m)	# of cells
2	1	0.5	2
3	1	0.5	3
4	1	0.5	4
1.5	1	1	1
2	1	1	2
3	1	1	3
4	1	1	4

All sizes and dimensions are nominal.
(Table 1) Tolerances of ± 5% of the width, height, and length of the gabions shall be permitted.

2. Standard Mesh-Wire

Type	D (mm)	Tolerance	Internal Wire Dia (mm)	External Wire Dia (mm)
8x10	80	+16%/-4%	2.70	3.70

3. Standard wire diameters

		Mesh Wire	Selvedge Wire	Lacing Wire
Polymac Mesh Diameter	ø mm	Int.2.7/Ext.3.7	Int.3.4/Ext.4.4	Int.2.2/Ext.3.2
Wire Tolerance	(±) ø mm	0.06	0.07	0.06
Min. Q.ty of Galfan	gr/m²	245	265	230

Lacing Operations

Lacing operations can be made by using the tools shown in Fig.5. Galfan 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 gabions 2x1x1m - Mesh type 8x10 - Wire diam. 2.7/3.7 mm - Polymac coated

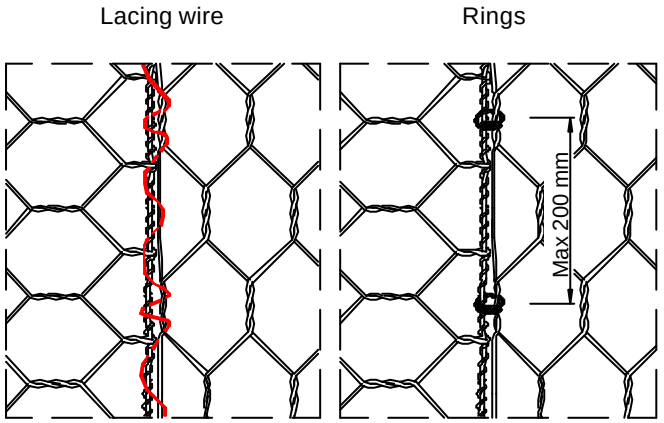


Figure 3

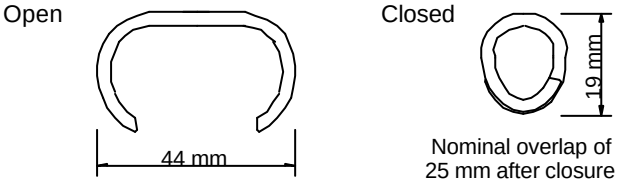
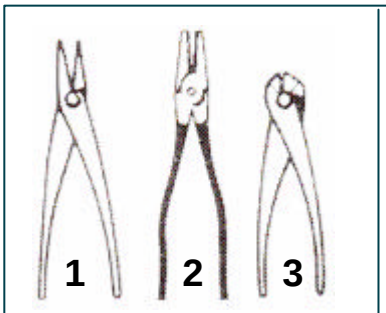


Figure 4



A
1. Pliers
2. Pliers with nipper
3. Nipper


B
Pneumatic Spenax tool

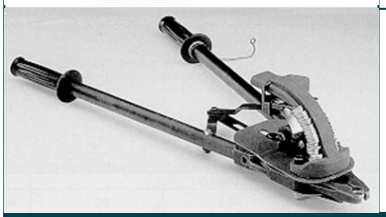

C
Manual tool

Figure 5

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