MACCAFERRI

TECHNICAL DATA SHEET

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GABION

POLIMAC™ COATED

Product Description

Gabion is a double twisted hexagonal wire mesh container of variable sizes, uniformly partitioned into internal cells by diaphragms positioned approximately 3.0 ft (0.9 m) centers (Fig. 1), interconnected with other similar units and filled with stone at the project site to form flexible, permeable, monolithic structures such as retaining walls, sea walls, channel linings, revetments, and weirs for erosion control application. Standard sizes of PoliMac™ coated gabions are shown in Table 1.

Gabions shall be manufactured and shipped with all components mechanically connected at the production facility. The front, base, back and lid of the gabions shall be woven into a single unit. The ends and diaphragm(s) shall be factory connected to the base. All perimeter edges of the mesh forming the basket and top, or lid, shall be selvedged with wire having a larger diameter (Table 3).

Wire

The steel wire used for manufacturing of PoliMac™ coated Gabions is heavily zinc coated soft or medium temper steel in accordance with ASTM A975, style 3 coating. A high abrasion resistant polymer 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 high abrasion resistant polymer coating has a nominal thickness of 0.02 in. (0.50 mm). The standard specifications of the wire are shown in Tables 2 and 3.

Wire used for manufacturing of gabions and lacing wire shall have a minimum tensile strength of 60,000 psi (415 MPa) to maximum tensile strength of 80,000 psi (550 MPa) as per ASTM A641/A641M. All tests on wire must be performed prior to manufacturing the mesh and shall comply with ASTM A975 requirements.

Woven Wire Mesh Type 8x10

The mesh and wire characteristics shall be in accordance with ASTM A975 Table 1, Mesh type 8x10 and PoliMac™ coated. The nominal mesh opening, D = 3.25 in. (83 mm) as per Fig. 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.

PoliMac™ Coating

PoliMac™ is an environmentally safe extruded polymer coating specifically developed to provide high resistance to abrasion and mechanical damage to improve performance in cold and hot weather and UV radiation. PoliMac™ comply with ASTM A975.

***Color*:** grey.

***Resistance to UV radiation*:** the tensile strength and elongation at break of the base compound after 2500 hours of exposure to QUV-A (ASTM G154 or ISO 4892-3) do not change more than 25% from the initial test results.

Brittleness temperature: the brittleness temperature of PoliMac™ coating shall be less than –35°C (-31°F) as determined with ASTM D746.

Outwearing accelerated ageing test in salt spray: when the PoliMac™ coated wire mesh is subjected to the neutral salt spray test (ASTM B117 or ISO 9227) after 6000 hours of exposure the mesh does not show more than 5% of DBR (Dark Brown Rust).

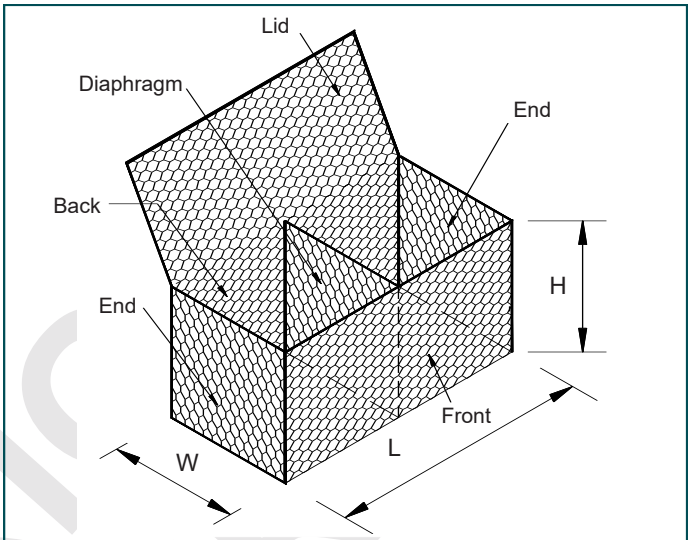

Figure 1

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

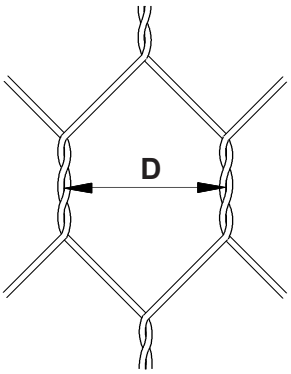

Figure 2

Resistance to abrasion: abrasion is prominent where there is scuffing, scratching, or wearing action caused by actions such as glaciation, suspended solid transport in rivers, or waves breaking on coastlines. The abrasion resistance of the PoliMac™ complies with ASTM A975. Average number of cycles caused by linear abrading action shall be greater than 300.

***Corrosion spread*:** maximum length of corrosion spread on a PoliMac™ coated wire shall be less than a mesh opening after immersion in a 5% solution of HCl as per ASTM A975.

Lacing, Assembly and Installation

Gabion units are assembled and connected to one another using lacing wire specified in Table 3 and described in Fig. 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 (Fig. 4).

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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.

Table 1 Sizes for Gabions

L=Length ft (m)	W=Width ft (m)	H=Height ft (m)	# of cells
6 (1.83)	3 (0.91)	3 (0.91)	2
9 (2.74)	3 (0.91)	3 (0.91)	3
12 (3.66)	3 (0.91)	3 (0.91)	4
6 (1.83)	3 (0.91)	1.5 (0.45)	2
9 (2.74)	3 (0.91)	1.5 (0.45)	3
12 (3.66)	3 (0.91)	1.5 (0.45)	4
6 (1.83)	3 (0.91)	1 (0.30)	2
9 (2.74)	3 (0.91)	1 (0.30)	3
12 (3.66)	3 (0.91)	1 (0.30)	4
4.5 (1.37)	3 (0.91)	3 (0.91)	1

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

Stainless steel rings for PoliMac™ 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 4 in. (100 mm) (Fig. 3).

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

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

Table 2 Standard Mesh-Wire

Type	D in. (mm)	Tolerance	Internal Wire Dia in. (mm)	External Wire Dia in. (mm)
8x10	3.25 (83)	±10%	0.106 (2.70)	0.146 (3.70)

Table 3 Standard Wire Diameters

	Lacing Wire	Mesh Wire	Selvedge Wire / Preformed
Mesh Wire Diameter ø in. (mm)	0.087 (2.20)	0.106 (2.70)	0.134 (3.40)
Wire Tolerance (±) ø in. (mm)	0.004 (0.10)	0.004 (0.10)	0.004 (0.10)
Min. Quantity/Zinc oz/ft^2 (g/m^2)	0.70 (214)	0.80 (244)	0.85 (259)
Wire + Polymer dia. 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 diam. 0.106 in. (2.70 mm), PoliMac™ coated.

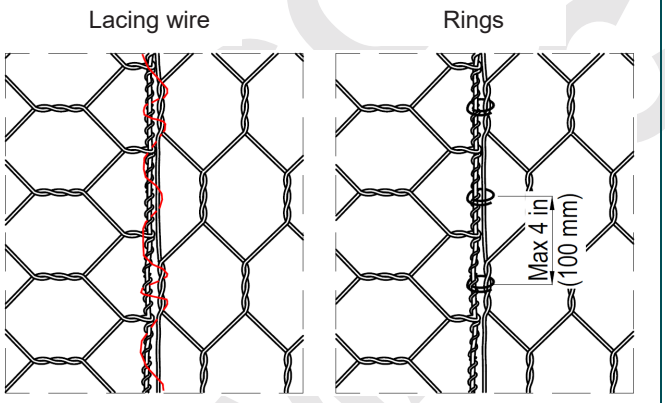

Figure 3

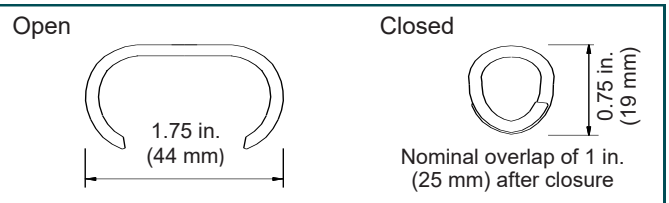

Figure 4

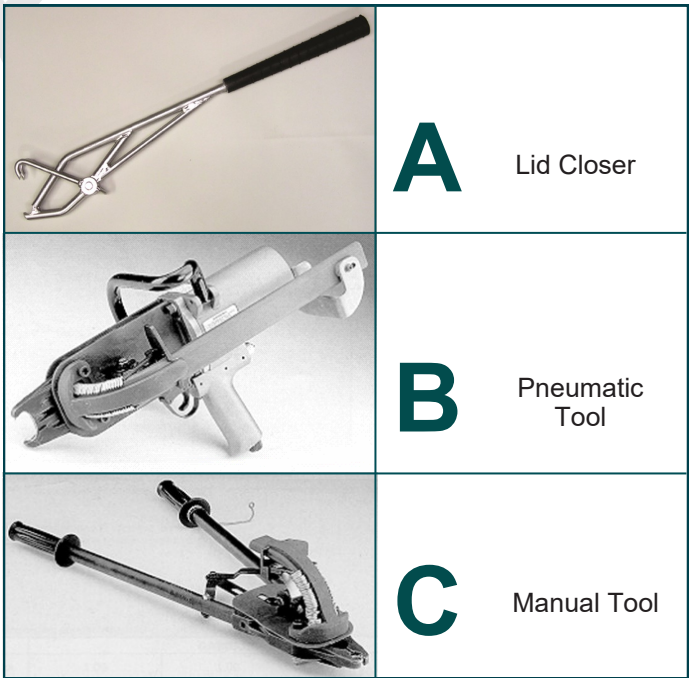

Figure 5

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