MACCAFERRI

TECHNICAL DATA SHEET
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RENO MATTRESS
POLIMAC™ COATED

Product Description
Reno mattress is a double-twisted wire mesh container uniformly partitioned into internal cells with relatively small height in relation to other dimensions, having smaller mesh openings than the mesh used for gabions; interconnected with other similar units and filled with stone at the project site to form flexible, permeable, monolithic channel linings, revetments, scour protections and other erosion control structures (Fig. 1). Standard sizes of PoliMac™ coated Reno Mattresses are shown in Table 1.
Reno mattress shall be manufactured and shipped with all components mechanically connected at the production facility except the lid which is produced separately from the base. The diaphragms are created by inserting an upright double-mesh fold in the base panel, which improves the diaphragm stability during filling operations and the hydraulic performance. All perimeter edges of the mesh forming the basket and lid, shall be selvedged with wire having a larger diameter (Table 3).

Wire
The steel wire used for manufacturing of PoliMac™ coated Reno mattresses 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 Reno mattresses 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 6x8
The mesh and wire characteristics shall be in accordance with ASTM A975 Table 1, Mesh type 6x8 and PoliMac™ coated. The nominal mesh opening, D = 2.5 in. (64 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 2300 lb/ft (33.6 kN/m) 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* shall be 700 lb/ft (10.2 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 mode 1) 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.

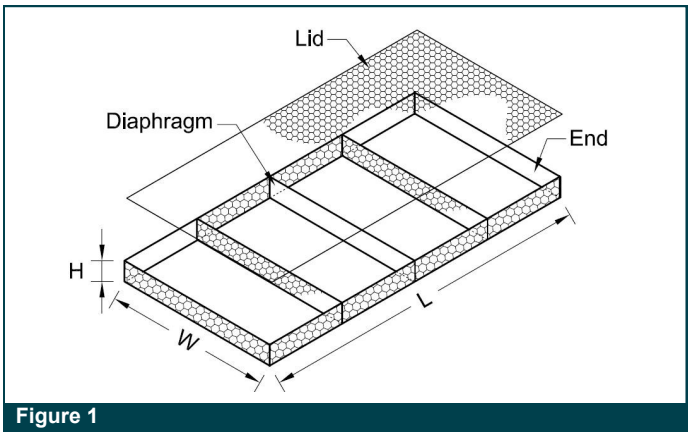

Figure 1

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

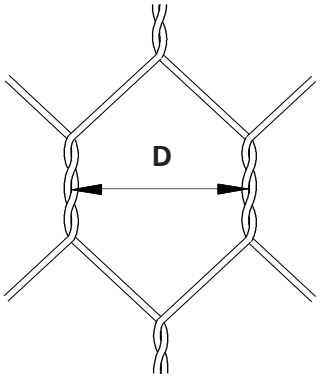

Figure 2

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).
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 HAR polymer 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
Reno mattresses are assembled and connected using lacing wire specified in Table 3 and described in Fig. 3. Stainless steel ring fasteners can be used instead of, or to complement, lacing wire (Fig. 4).
Stainless steel rings for PoliMac™ coated Reno 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) (Fig. 3). With stainless steel fasteners, the ring can be placed using pneumatic or manual tools (Fig. 5). For full details please see the Reno Mattress Product Installation Guide.
The average maximum resistance of the fasteners from the field shall not be lower than 90% of the resistance provided in the certification.

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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 Reno mattresses

L=Length ft (m)	W=Width ft (m)		H=Height in. (mm)	# of cells
9 (2.74)	6 (1.83)	9 (2.74)	6 (150)	3
12 (3.66)	6 (1.83)	9 (2.74)	6 (150)	4
9 (2.74)	6 (1.83)	9 (2.74)	9 (230)	3
12 (3.66)	6 (1.83)	9 (2.74)	9 (230)	4
9 (2.74)	6 (1.83)	9 (2.74)	12 (300)	3
12 (3.66)	6 (1.83)	9 (2.74)	12 (300)	4

All sizes and dimensions are nominal. Tolerances of ± 5% of the width, length, and 10% of the height of the Reno mattress shall be permitted.

Stainless steel rings for PoliMac™ coated Reno 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) (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.

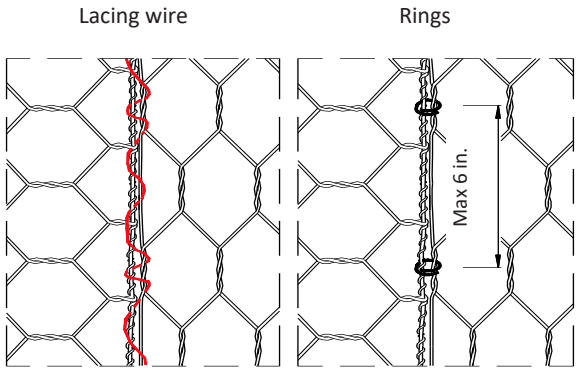

Figure 3

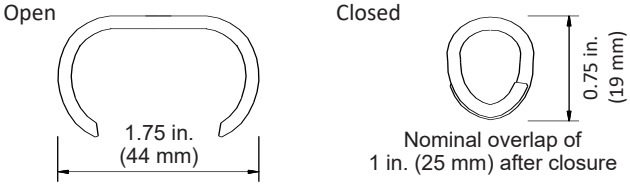

Figure 4

Table 2 Standard Mesh-Wire

Type	D in. (mm)	Tolerance	Internal Wire Dia in. (mm)	External Wire Dia in. (mm)
6x8	2.5 (64)	±10%	0.087 (2.20)	0.127 (3.20)

Table 3 Standard wire diameters

	Lacing Wire	Mesh Wire	Selvedge Wire
Mesh Wire Diameter ø in. (mm)	0.087/0.127 (2.2/3.2)	0.087/0.127 (2.2/3.2)	0.106/0.146 (2.70/3.70)
Wire Tolerance (±) ø in. (mm)	0.004 (0.10)	0.004 (0.10)	0.004 (0.10)
Minimum Quantity/Zinc oz/ft^2 (g/m^2)	0.70 (214)	0.70 (214)	0.80 (244)
Wire + Polymer Diameter in. (mm)	0.127 (3.20)	0.127 (3.20)	0.146 (3.70)

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 Reno mattresses 9x6x9 - Mesh type 6x8 - Wire diam. 0.087 in. (2.2 mm), PoliMac™ coated

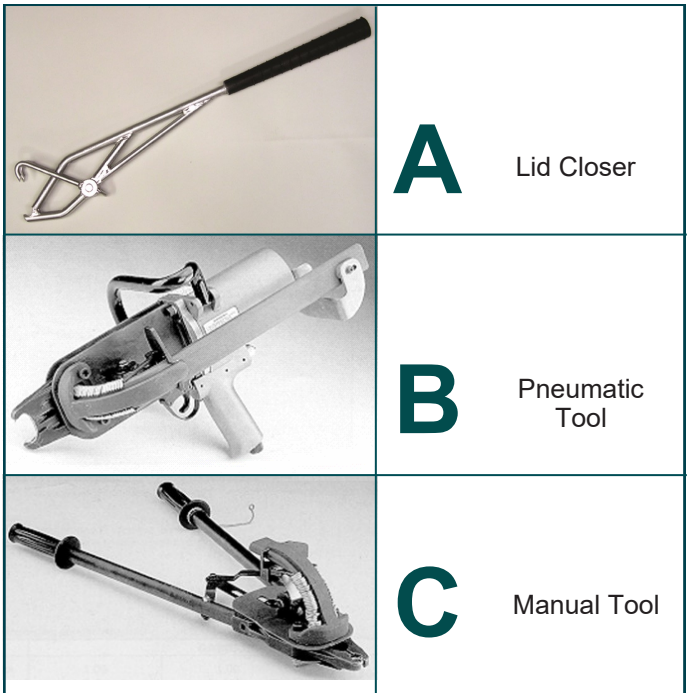

Figure 5

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