

### RENO MATTRESS GALMAC® & PVC COATED

#### Product Description

The Reno mattress is a structure made of 6x8 hexagonal double twisted woven steel wire mesh type as per ASTM A975 (Fig. 1 and 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 in the manufacture of the mattress is heavily GalMac® (zinc-5% aluminum-mischmetal [Zn-5% Al-MM] alloy) coated soft temper steel. A PVC coating is then applied to provide additional 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 PVC coating has a nominal thickness of 0.02 in. (0.50 mm). The standard specification of mesh and wire are shown in Table 2.

To reinforce the structure, all mesh panel edges are selvedged with a wire having a greater diameter (Table 3).

Reno mattresses are divided into cells by internal diaphragms. Dimensions and sizes of Reno mattresses are shown in Table 1.

#### Wire

All tests on wire must be performed prior to manufacturing the mesh. All wire should comply with ASTM A975, style 3 coating, GalMac® and PVC coated steel wire. Wire used for the manufacture of Reno mattresses and the lacing wire, shall have a maximum tensile strength of 75,000 psi (515 MPa) as per ASTM A856/A856M soft temper steel.

#### Woven Wire Mesh Type 6x8

The mesh and wire characteristics shall be in accordance with ASTM A975 Table 1, Mesh type 6x8 and PVC 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.

#### P.V.C. (Polyvinyl Chloride) Coating

The technical characteristics and the resistance of the PVC to aging should meet the relevant standards. The main values for the PVC material are as follows:

- The initial property of the PVC coating shall be in compliance with ASTM A975 section 8.2.
- Prior to UV and abrasion degradation, the PVC polymer coating shall have a projected minimum durability of 69 years when tested in accordance with *UL 746B Polymeric Material—Long Term Property Evaluation* for heat aging test.

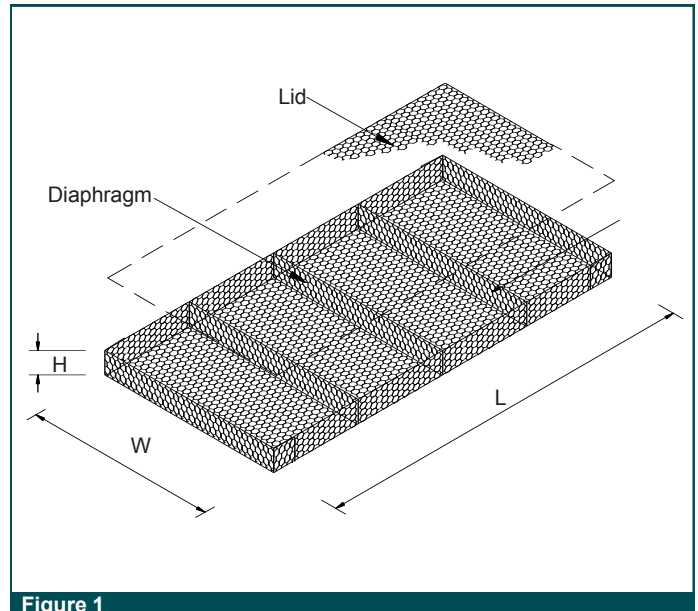


Figure 1

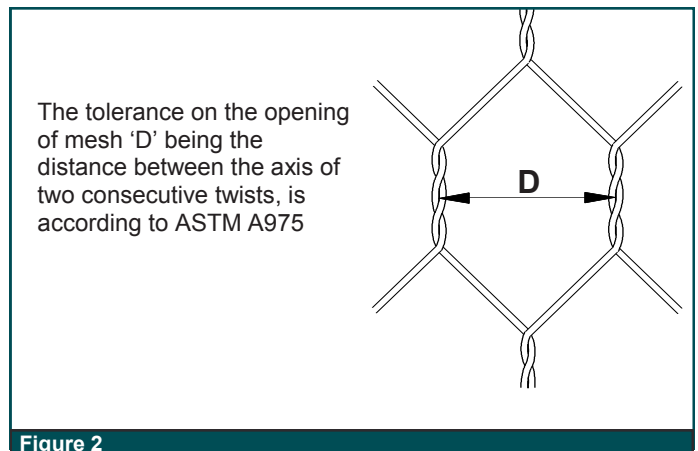


Figure 2

#### 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 PVC 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.

## 1. Table of sizes for Reno mattresses

L=Length ft (m)	W=Width ft (m)		H=Height in. (mm)	# of cells
9 (2.7)	6 (1.8)	9 (2.7)	6 (150)	3
12 (3.6)	6 (1.8)	9 (2.7)	6 (150)	4
9 (2.7)	6 (1.8)	9 (2.7)	9 (230)	3
12 (3.6)	6 (1.8)	9 (2.7)	9 (230)	4
12 (3.6)	6 (1.8)	9 (2.7)	12 (300)	4

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

## Quantity Request

When requesting a quotation, please specify:

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

EXAMPLE: No. 100 Reno mattresses 9x6x9 - Mesh type 6x8 - Wire diam. 0.087 in. (2.2 mm), GalMac<sup>®</sup> + PVC coated

## 2. Standard Mesh-Wire

Type	D in. (mm)	Tolerance	Internal Wire Dia in. (mm)	External Wire Dia in. (mm)
6x8/ GalMac <sup>®</sup> + PVC	2.5 (64)	$\pm 10\%$	0.087 (2.20)	0.127 (3.20)

## 3. Standard wire diameters

	Lacing Wire	Mesh Wire	Selvage Wire
Mesh Wire Diameter $\phi$ 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 ( $\pm$ ) $\phi$ in. (mm)	0.004 (0.10)	0.004 (0.10)	0.004 (0.10)
Minimum Quantity/GalMac <sup>®</sup> oz/ft <sup>2</sup> (g/m <sup>2</sup> )	0.70 (214)	0.70 (214)	0.80 (244)
Wire + PVC Diameter in. (mm)	0.127 (3.20)	0.127 (3.20)	0.146 (3.70)

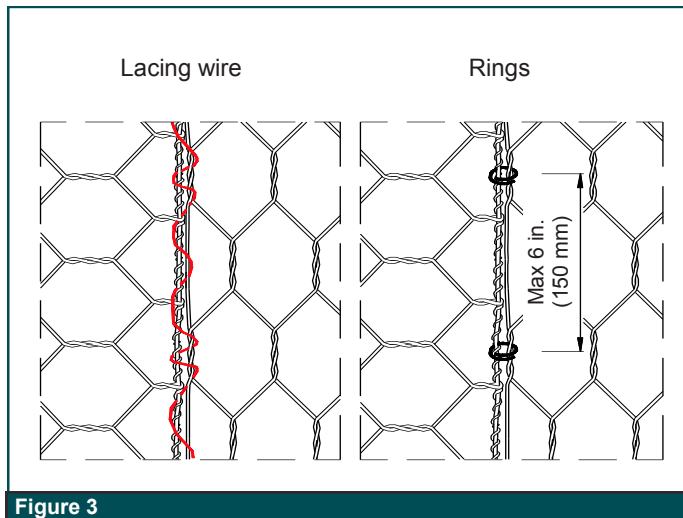


Figure 3

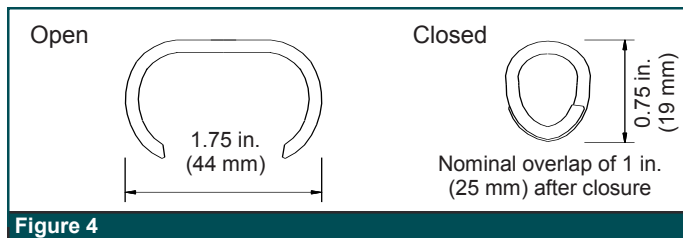


Figure 4

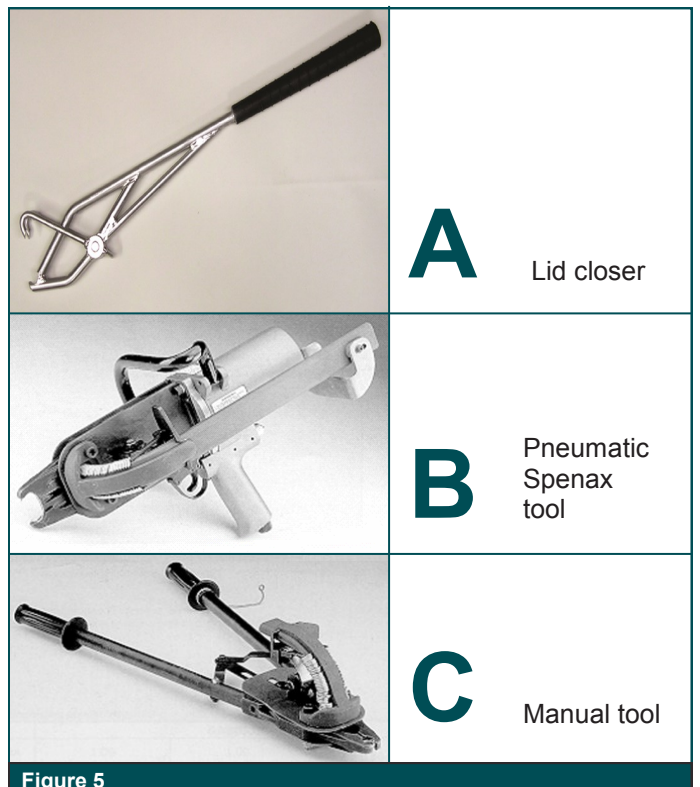



Figure 5

 <p>www.maccaferri-usa.com</p>	<p>Headquarters: 10303 Governor Lane Boulevard Williamsport, MD 21795-3116 Tel: 800-638-7744 Fax: 301-223-6134 info@maccaferri-usa.com</p>	<p><b>MACCAFERRI INC.</b></p> <p>AZ, Phoenix CA, Sacramento FL, Coral Gables MD, Williamsport</p>	<p>Area Offices:</p> <p>MO, St. Louis NJ, Iselin NM, Albuquerque OH, Columbus</p>	<p>PR, Caguas TX, Lewisville WA, Seattle</p>
-------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------	------------------------------------------------------