



## TERRA AQUA RENO MATTRESS SPECIFICATION GALVANIZED

All mattress material is manufactured according to ASTM 975-97 guidelines for Double Twisted Hexagonal mesh.

### GENERAL DESCRIPTION:

The Terra Aqua Reno mattress is a mattress shaped container manufactured from heavily galvanized wire to form a flexible and effective surface protection to defend against erosion and scouring. The flexible wire mesh will accommodate significant deformation without failure. The base and sides of the Reno Mattress are made of a single sheet of wire mesh (main panel). Partition panels (diaphragms) are made of the same wire mesh as the main panel and are attached to the base of the main panel dividing the Reno Mattress into 3 foot cells. The lid is formed either by a single sheet or in rolls of a specified length from the same wire as is in the main panel.

### MESH:

The mesh shall be woven into a hexagonal pattern with the joints formed by twisting each pair of wires through three and a half turns. Because of this appearance, the joints are often termed triple twisted. The mesh opening shall be hexagonal in shape and uniform in size measuring 2 1/2 inches by 3 1/4 inches. (6cm x 8cm)

### WIRE:

All wire used in the fabrication of the Reno Mattress and in the lacing operations shall conform to Federal Specification QQ-W-461H, Class 3, Finish 5, soft, and have an average tensile strength in accordance with the current ASTM A 641, Table 2, measured before fabrication of the netting. The nominal diameter of the wire used in the fabrication of the netting shall be 0.0866 inches minimum, subject to diameter tolerance in accordance with the current ASTM A 641, Table 3.

### ELONGATION OF WIRE:

Tests shall be conducted on the wire before fabrication on the Reno Mattress on a sample 12 inches long. Elongation shall not be less than 12%.

page 1

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## ZINC COATING (GALVANIZING):

All wire used in the fabrication and construction of the gabions shall be galvanized according to ASTM A 641, Table 1. The minimum weight of the zinc coating shall be according to the table following when tested in accordance with ASTM A 90.

Description	Nominal Diameter of Wire	Minimum Weight of Coating
Mesh and Lacing	0.0866 inches (2.2mm) minimum	0.70 ozs / sq ft
Selvedge	0.106 inches (2.7mm) minimum	0.80 ozs / sq ft

Adhesion of the zinc coating to the wire shall be capable of being wrapped in a close helix at a rate not exceeding 15 turns per minute around a cylindrical steel mandrel having a diameter 3 times the nominal wire diameter being tested. After the wrap test is completed, the wire shall not exhibit any cracking or flaking of the zinc coating to such an extent that any zinc can be removed by rubbing with bare fingers.

## SELVEDGES:

All edges of the Reno Mattress including end panels and the diaphragms, shall be mechanically selvedged in such a way as to prevent unraveling of the mesh and to develop the full strength of the mesh. The wire used for the selvedge shall have a diameter greater than that of the wire used to form the mesh.

## DIMENSIONS OF ZINC COATED RENO MATTRESS:

The standard Reno Mattress has the following nominal dimensions

Length (Feet)	Width (Feet)	Thickness (Inches)	No. of Compartments	Area (Sq. Yds.)	Capacity Cubic Yds.
9'0"	6'0"	9" or 6" <small>or 12"</small>	3	6	1.5 (1)
12'0"	6'0"	9" or 6" <small>or 12"</small>	4	8	2.0 (1.33)

\*Non-Standard Sizes Available

The length of the mattress shall be a multiple of the cell length (3 feet).

## LACING WIRE:

Sufficient lacing and connecting wire shall be supplied with the mattress for all wiring operations. The nominal diameter of lacing wire shall be 0.0866 inches minimum.

Alternate fasteners shall have an inside area of 3/4 square inch when properly closed. Properly closed fasteners shall be capable of confining a minimum of four (4) selvedge wires while producing a joint strength of 1400 lb. per linear foot. Fasteners shall not be used to confine more wires than for what they are tested.

\* Tiger-Tite Interlocking Fasteners as manufactured by Jackson Clip Company are acceptable fasteners.

#### DIAPHRAGMS:

According to engineering requirements the Reno Mattress incorporates diaphragms to form cells having a nominal length of three feet.

#### MANUFACTURING TOLERANCES FOR TERRA AQUA RENO MATTRESS:

A tolerance of  $\pm 5\%$  on the width and on the length of the Reno Mattress and a tolerance of  $\pm 10\%$  on the height shall be permitted.

#### STONE SIZE:

The Terra Aqua Heavy Duty Reno Mattress was designed specifically to accommodate stone size of 3 to 6 inches (75 -105mm). Only hard durable stone shall be used as mattress fill.

#### INSTALLATION / PLACEMENT:

On channel slopes, the mattress shall be placed perpendicular to the flow in the channel with the shorted dimensions of the diaphragm going up and down the slope. On the channel bed, the mattress shall be placed so the flow runs parallel with the short dimension of the mattress compartment, while the width of the mattress runs across the channel bed. An approved corner closure tool shall be used to adjoin adjacent mattresses to insure a tight, neat seam and minimize mattress wire joint deformation.

\* Terra Aqua Gabions reserves the right to amend these specifications without notice. Specifiers are requested to confirm validity of the specification they are using. Reference TAHD/RM/93.

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