

TECHNICAL DATA-SHEET

Product Identification



Gabion-Galvanized and PVC Coated Gabion Boxes (100x120 mm; 80x100mm; 60x80 mm)

Gabions are wire mesh baskets compactly filled with rocks, properly wired together for construction of erosion control structures and to stabilize steep slopes and prevent erosion.

A double twisted wire mesh container of variable sizes, uniformly partitioned into internal cells, 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, channels, linings, revetments and weirs for erosion control project.

Most of us are familiar with the beautiful use of gabions as stabilization of cuttings through mountain passes, but the practical applications for gabions are vast. These rock-filled baskets are often used as retaining walls for highly erosive materials, bridge abutments and outlet aprons.

Terminology :

Double - Twisted Wire Mesh : A non-raveling mesh made by twisting continuous pairs of wires through three one half turns (commonly called double twisted) to form hexagonal shaped opening which are then interconnected to adjacent wires to form hexagonal opening.

Selvedge Wire : A terminal wire used to edge the wire mesh perpendicular to the double twist by mechanically wrapping the mesh wire around at least 2.5 times.

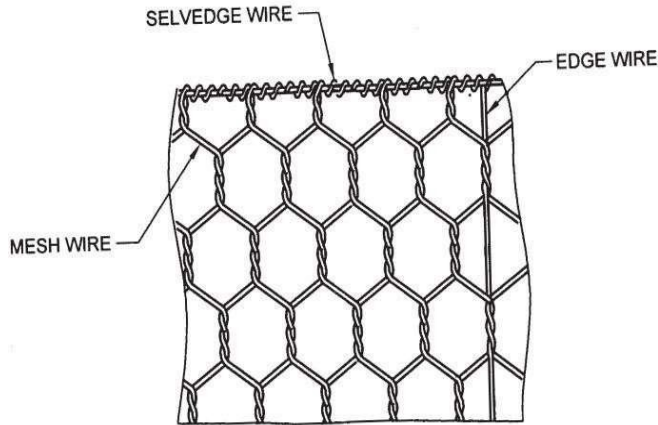
Edge Wire : A terminal wire of same diameter as the selvedge wire used to edge the wire mesh parallel to the double twist by continuously weaving it mechanically into the wire mesh.

Lacing Wire : A galvanized wire or galvanized wire with PVC Coating used to assemble and interconnect empty units, to close and secure stone-filled units, and internal stiffeners.

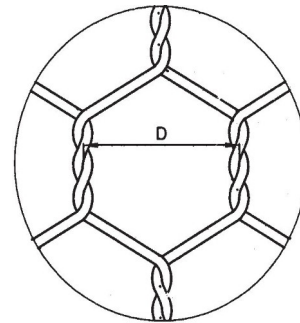
Wire Diameters:

Wire Diameter	Only Zinc Coated (mm)			Zinc + PVC Coated(ID / OD)
Mesh Wire	2.70	3.00	2.20	2.70 / 3.70; 2.20 / 3.20
Selvedge Wire	3.40	3.90	2.70	3.40 / 4.40; 2.70 / 3.70
Lacing Wire	2.20	2.20	2.20	2.20 / 3.20

Wire Diameter	Permissible Tolerance
2.00 mm	± 0.05 mm
2.20 mm	± 0.06 mm
2.40 mm	± 0.06 mm
2.70 mm	± 0.07 mm
3.00 mm	± 0.08 mm
3.40 mm	± 0.09 mm
3.90 mm	± 0.10 mm



Mesh wire, Selvedge wire and Lacing wire



Mesh Type and Nominal Size 'D'

Mesh Size :

The average distance, measured at right angles between twisted sides over 10 meshes Hexagonal

Mesh size : 100 x 120 mm (D=100);

80 x 100 mm (D=80);

60 x 80 mm (D=60)

Mesh opening : 100 mm (between axis of twists)

80 mm (between axis of twists)

60 mm (between axis of twists)

Mesh tolerances (D) : $\pm 10\%$

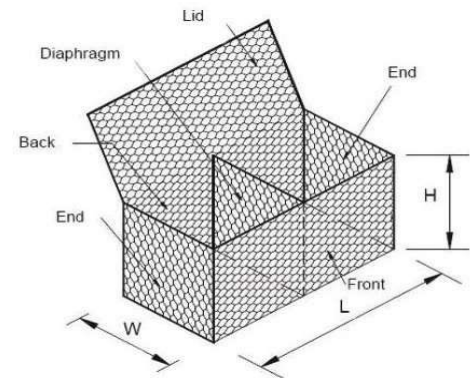
Tolerances on mesh size as per IS 16014:2018

Mechanically Woven Double Twisted Hexagonal Wire Mesh Heavy Zinc or Zinc Alloy / PVC(Polymer) Coated GABION BOX

A wire mesh container of variable sizes, uniformly partitioned into internal cells inter connected with other similar units, and filled with stone at the project site to form flexible, permeable monolithic structures for earth retaining and erosion control purposes, such as retaining wall, sea walls, channel linings revetments, offshore bunks, dykes and weirs.

Typical Sizes of Gabion Box:

Sr.	Size in mtr (L x W x H)	Center Diaphragms
1	1.0 x 1 x 1	0
2	1.5 x 1 x 1	0
3	2.0 x 1 x 1	1
5	3.0 x 1 x 1	2
6	4.0 x 1 x 1	3
7	4 x 1.5 x 1	3
8	4 x 2.0 x 1	3



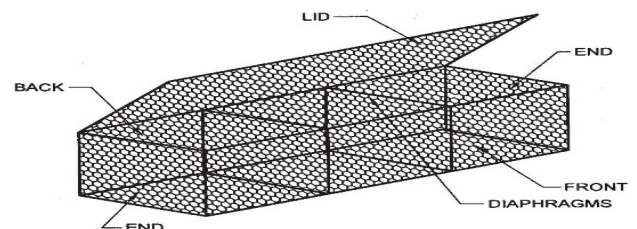
Mechanically Woven Double Twisted Hexagonal Wire Mesh Heavy Zinc or Zinc Alloy / PVC (Polymer) Coated GABION / REVET MATTRESS

A mattress is a wire mesh container uniformly partitioned into internal cells with relatively smaller height in relation to other dimensions generally used for river bank protection and channel linings.

Mattresses in mesh size 100 x 120 and 80 x 100 mm are normally called as “*Gabion Mattress*”.
Mattresses in mesh size 60 x 80 mm are normally called as “*Revet Mattress*”.

Typical Sizes of Gabion / Revet Mattress:

Sr.	Size in Mtr (L x W x H)	Center Diaphragms
1	3 x 2 x 0.30	2
2	4 x 1 x 0.17	3
3	6 x 2 x 0.30	5



Tolerances on Box / Mattress Sizes:

± 5% for dimension >0.3 m

± 10% for dimension ≤0.3 m

Tolerances as per IS 16014:2018

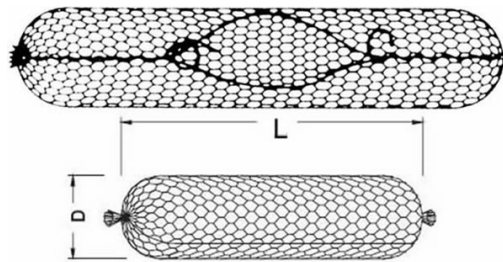
Mechanically Woven Double Twisted Hexagonal Wire Mesh Heavy Zinc or Zinc Alloy / PVC (Polymer) Coated SACK GABION

Sack Gabions are a cylindrical basket made up of Mechanically Woven Hexagonal DT Wire Mesh with lateral opening to allow the stone filling or Geotextile encased sand filling at site. The steel wire shall be heavily zinc coated soft temper steel. A PVC coating shall be applied to provide added protection for use in polluted environment. In order to reinforce the structure, all mesh panel edges are selvedged with a wire having a greater diameter. Sack gabion can also be supplied with reinforcing wires inserted during the manufacturing process to facilitate closing during installation.

Typical Sizes of Sack Gabions:

Sr.	Size in Mtr (Length x dia)
1	2.0 x 0.96 m
2	1.5 x 0.74 m

Permissible Tolerances: $\pm 5\%$



DT MESH/ROCKFALL NETTING (made of Heavy Zinc or Zinc Alloy / PVC Coated wire or Steel Rope)

Rockfall Netting is a steel rope / wire mesh supplied in the form of rolls used to prevent rocks and debris from falling on to roads, railways or any other area which needs protection.

Sr.	Size in Mtr (W x L/H)	Tolerance
1	2 x 25	± 100 mm
2	3 x 15	
3	4 x 20	

Standard Mesh size:

Made of Galvanised/ PVC Coated wire : Made of Steel

100 x 120 mm; 80 x 100 mm; 60 x 80 mm, 300 x 300 mm; 450 x 600 mm

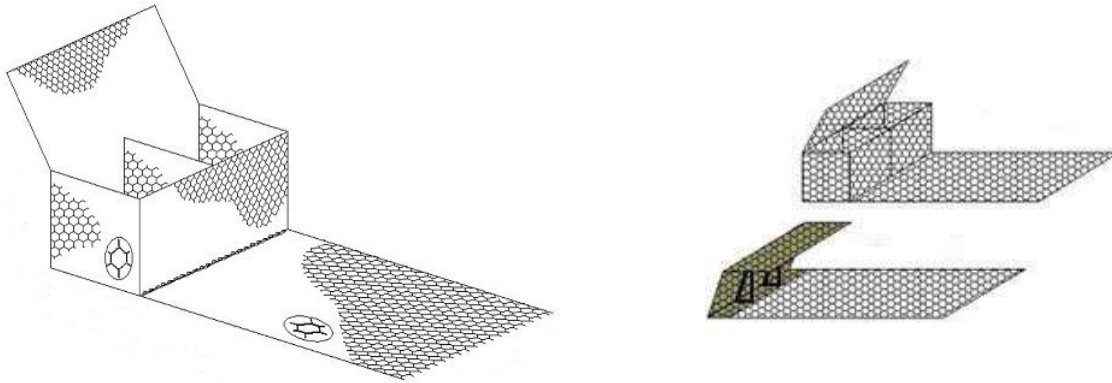
As per requirement

(Rhomboidal; Square; Rectangle mesh)



Soil Reinforcement Units For Earth Retaining Structures

Soil Reinforcement Units for Earth Retaining Structures are double twisted steel wire mesh unit – made of zinc/zinc alloy wire with or without PVC coating used for reinforced soil structures and slope consolidation.



With soil reinforcement unit solution, the reinforcement is positioned and the face of the structure formed in one continuous construction process. The defining parameters, such as the inclination, anchor length and appearance of the slope face, can be tailored to the individual structure.

Tensile Strength:

The wire used for the manufacture of gabions shall have a tensile strength between 350-550 N/mm².

Tensile strength of panel (As per IS 16014, Table 7)

Wire Description	100x120	100x120	100x120	80x100	80x100	60x80	60x80
Mesh Wire Dia. (mm)	2.70 mm Zn	3.00 mm Zn	2.70/3.70 mm PVC	3.00 mm Zn	2.70/3.70 mm PVC	2.20 mm Zn	2.20/3.20 mm PVC
Parallel to Twist (KN/m)	32.0	40.0	32.0	51.0	42.5	33.5	34.0
Perpendicular to Twist (KN/m)	15.5	20.5	15.5	26.5	20.5	13.0	13.0

Elongation: Elongation shall not be less than 10%, in accordance with IS 16014:2018. Test must be carried out on a sample at least 200 mm long.

Zinc Coating: The wire used for manufacture of gabions, mattresses, Rockfall netting, sack gabions

and soil reinforcement unit shall conform to IS:280 and shall have Zinc coating as per IS 16014:2018; table 8.

Sr. No.	Wire diameter (mm)	Mass of Zn coating (gm/m ²)
1	2.00	240
2	2.20	240
3	2.40	260
4	2.70	260
5	3.00	270
6	3.40	270
7	3.90	280

Class 1 Double twisted mesh shall be manufactured from zinc or zinc alloy steel coated wire conforming to IS 4826, heavily coated and soft type.

Class 2 Double twisted mesh shall be manufactured from the same type of galvanised steel wire as Class 1 with an additional PVC / Polymer coating extruded onto the galvanised steel wire.

Adhesion of Zinc Coating: The Zinc Coating does not flake off nor cracks to such an extent that there is possibility of removing any zinc by rubbing with bare finger, the use of finger nails being not allowed.

PVC for Coating:

The initial properties of PVC coating material shall conform to the following requirements:

- a) **Specific gravity** — In the range from 1.30 to 1.35 in accordance with IS 13360.
- b) **Tensile strength** — Not less than 20.6 MPa in accordance with IS 13360.
- c) **Hardness** — Shore 'D' between 50 and 60 in accordance with IS 13360.
- d) **Resistance of PVC coating to sodium chloride solution** — When PVC coated wire is tested in accordance with 12.4 there shall be no loss of mass.
- e) **Salt spray exposure** — The PVC shall show no effect after 3000 hours of salt spray exposure in accordance with IS 13360.

All Wires used in the fabrication of the Gabion cages shall be extruded with a **UV stabilized poly vinyl chloride (PVC)** coating compound.

The color of coating shall be Grey RAL 7037 as per ASTM A 1482 or Green RAL 6005 and having an average thickness of 0.5 mm and not less than 0.4 mm in thickness as per IS 16014:2018.

The PVC compound shall be capable of resisting deleterious effects of natural weather exposure and immersion in salt water without much material changes in its initial properties.