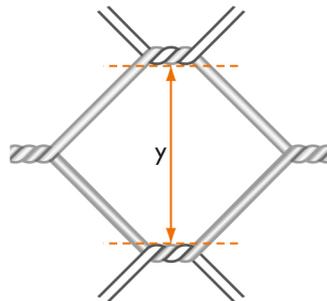




## Gabion Design Specification : Hexagonal Woven Mesh

### ENV-Z27-HEX



#### SPECIFIED MESH DOUBLE TWIST WOVEN

Nominal dimension (y) : Gabions, 80mm Mattresses, 60mm

#### Gabions are to be manufactured and / or supplied by:

Enviromesh, Garner Street Business Park, Etruria, Stoke-on-Trent, Staffordshire, ST4 7BH.

Telephone +44 (0)845 136 0101 Fax +44 (0)845 136 0202 Email: [enquiries@enviromeshgabions.co.uk](mailto:enquiries@enviromeshgabions.co.uk) Online: [www.enviromeshgabions.co.uk](http://www.enviromeshgabions.co.uk)

The certification, materials, manufacture, assembly and installation of the above-mentioned product shall comply with all of the following criteria:

### Certification

1. All gabions are certified in accordance with **British Board of Agrément (BBA)** certificate no. 00/3682. This is for current General Building Regulations.
2. All mattress products are manufactured in accordance with the requirements of BS EN 10223-3:2013 where the gabions are considered to have a life expectancy of **greater than 25 years** in a 'low aggressive; C2 environment' (ref. BS EN 10223:2013 Table A1).
3. Evidence of current BBA certification and relevant certificates of conformity with respect to wire strength and coating weights used in the manufacture of the mesh fabric and wire products are to be issued upon request.

### Materials

The wire used in the manufacture of the gabions and installation accessories shall comply with the following:

#### Mesh Fabric

The mesh fabric shall be formed by twisting pairs of wires through one and a half turns to form a hexagonal flexible net pattern of nominal size **80mm x 100mm**. The end wires of the mesh panel are terminated by being wrapped around a heavy selvedge wire.



The nominal wire diameter for the mesh fabric shall be **2.70mm** and **3.40mm** for the selvedge wire. All wire is in accordance with BS EN 10218-2:2012 and BS EN 10223-3:2013 with an ultimate tensile strength of between **350 to 500N/mm<sup>2</sup>**.

### Lacing Wire

The lacing wire used for site assembly shall be of a nominal **2.2mm** wire diameter in accordance with BS EN 10218-2:2012 and shall have a tensile strength that falls within a range of **350 to 550 N/mm<sup>2</sup>**.

### Corrosion Resistance

All wire used in the gabion production or accessories shall be Zinc or Zinc 95% Aluminium 5% coated in accordance with BS EN 10244-2:2009 (Class A).

## Manufacture

### Unit Formation

The gabion is to be formed from mesh panels so that the front, rear, base and lid are formed from one continuous sheet, such that the front and rear faces have the mesh orientated vertically.

Diaphragms (partitioning panels) and end panels (all vertically orientated mesh) are connected to the base panel with full-length lacing. This process must be undertaken in a factory-controlled environment. Diaphragm spacings should not exceed 1.00m. The supply of loose diaphragm panels for fitting on site is not acceptable..

### Gabion Sizes

It should be noted that it is industry standard for gabions to be quoted as overall nominal sizes.

Designation of sizes **length x width x height**

Gabion standard unit lengths: 2000mm, 1500mm and 1000mm

Gabion standard unit widths: 1000mm

Gabion standard unit heights: 500mm and 1000mm

## Assembly and Installation

**Note** Please also refer to manufacturer's installation instructions which are available upon request in either electronic or hard copy format.

### Jointing

Gabions are supplied with lacing wire as standard for horizontal jointing of adjacent units whilst empty. Lacing is to be continuous along all joints using alternate single and double loops at a maximum spacing of 100mm ensuring that it forms a tight joint. Start or



termination of lacing is formed by three turns ensuring the free end is turned into the unit.

If CL50 'C' rings are to be used for final jointing as an alternative to lacing, then these must be installed at every other mesh opening to achieve the required joint strength.

### **Internal Bracing**

Internal bracing is formed by creating a continuous windlass tie between the face and rear of the exposed cells within the structure.

For 1m high units, two internal windlass bracings are required at third widths and at each third height of the gabion for 1m high units and at mid height on 0.5m high units.

In all cases the windlass tie is to span two or three mesh openings on the front and rear cells to spread the load. The exposed end gabions to the wall should also be braced in both directions to prevent end face deformation.

Where gabions are to be pre-filled and lifted instead of filling in-situ, it is necessary to brace each cell in both directions. In such circumstances the manufacturer must be consulted prior to supply to ensure product is suitable for application.

### **Geotextile Separators**

Where a geotextile separator between the rear of the gabion and backfill is to be used, refer to the engineers design proposal and specification.

### **Foundations, Wall Inclinations, Face Configurations, Drainage and Backfilling**

Reference to the engineers design proposal must be made with respect to foundation requirements, wall inclination, face configuration (stepped, flush or combination thereof), drainage and backfilling requirements. Any soft areas in the sub-grade should be excavated and replaced with a granular material to the engineer's requirements.

### **Filling**

Units are to be filled with a hard, durable, non-frost susceptible rock, stone or clean crushed concrete as specified by design. The grading of the fill is to be 100 to 150mm or 100 to 200mm (6G).

The units shall be filled in layers not exceeding 340mm, if large voids are present then the stone must be re-orientated to minimise voids. Where specified the gabions are to have a hand placed front face.

The units shall be filled such that the mesh lid bears down onto the gabion filling material. It may be beneficial to blind the top of the filled unit with a 20 to 50mm aggregate.

Filling should be staged so that no adjacent cells have more than a half difference in the level of filling for units of greater height than 500mm.

# Hexagonal Woven Mesh

ENV-Z27-HEX-03.15



**ENVIROMESH**<sup>®</sup>

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To assist in maintaining face alignment and reduce deformation, the use of external formwork i.e. timber or scaffold tubes can be tied onto the external face of the structure at third heights and then removed upon completion.

*Industry leading specialists for all your gabion requirements*



Cerana Limited registered office 83 Ducie Street Manchester M1 2JQ UK

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