

CORDEN GABION MATTRESSES

Gabion mattresses are box units where the plan area is large compared to its height. Each unit is subdivided into compartments normally to give cells 2m x 1m in plan.

Standard mattress sizes are 3m x 2m & 2m x 2m in plan and available in depths of 0.17m and 0.3m respectively. These are typically supplied in a Galvan coated wire with a PVC coating on top as traditionally they are laid on the beds of watercourses or beneath gabion walls to provide erosion protection and under scour. Once filled with stone or rock and the lid closed, they form monolithic blankets.

SPECIFICATION

Corden Hexagonal Woven Gabion Mattresses are manufactured from 2.00mm thick galvan coated (95%Zn/5%Al) hexagonal twisted wire mesh with an additional extruded PVC coating (grey) of 0.5mm nominal radial thickness. The mesh fabric is formed by twisting pairs of wires through one and a half turns to form a hexagonal flexible net pattern of nominal size 60mm x 80mm. The end wires of the mesh panel are terminated by being wrapped around a heavy 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/mm². The organic polymer powder coating is in accordance with BS EN 10245-2:2011.

Corden Hexagonal Woven Gabion Mattresses can be used where the life expectancy is 120 years.

Corden Hexagonal Woven Gabion Mattresses		
Characteristic	Unit / Test Method	Corden Woven Gabion Mattresses
Material Properties		
Wire Thickness	mm	2.00 fabric and 2.40 selvedge wire
Total Wire Thickness incl. PVC Coating	mm	3.00
Mesh Aperture	mm	60.0 x 80.0
Corrosion Resistance	BS EN 10244-2:2009 (Class A)	Galvan Coated (95% Zn / 5% Al) with an extruded PVC coating (grey) of 0.5mm nominal radial thickness
Tensile Strength	N/mm ²	350 - 500
Designation of Sizes		Length x Width x Height
Stone Infill Nominal Size	mm	80 – 150 for 170mm deep units 100 – 200 for 300mm deep units
Design Life	Years	120 years

UNIT FORMATION

The mattress is to be formed from the mesh panels such that the ends and base are formed from one continuous sheet.

Diaphragms (partitioning panels) and side panels are connected to the base panel with full length lacing. Diaphragm spacings should not exceed 1.00m along the length of the units. This process must be undertaken in a factory-controlled environment.

INSTALLATION

JOINTING

Mattresses 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.

GEOTEXTILE SEPARATORS

Where a geotextile separator is used beneath the mattress, refer to the engineer's design proposal and specification.

FOUNDATIONS

Reference to the engineer's design proposal must be made with respect to foundation requirements.

Any soft areas in the sub grade should be excavated and replaced with a rockfill 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 80 to 150mm for 170mm deep units and 100 to 200mm for 300mm deep units.

The units shall be filled such that the mesh lid bears down onto the mattress filling material.

Contact Corden for a copy of our Gabion Installation Guide for more information.

MATTRESS SIZES

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

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

Mattress standard unit lengths: 3000mm

Mattress standard unit widths: 2000mm

Mattress standard unit heights: 170mm and 300mm

ACCESSORY PRODUCTS

A wide range of accessories are available for use with Corden Gabion Mattresses, including:

- LACING WIRE
- CL50 GALFAN 'C' RINGS
- GABION STONE INFILL MATERIAL
- GEOTEXTILE SEPARATOR FABRIC

HANDLING & STORAGE

It is essential when handling wire products that protective glasses and gloves are worn.

ADDITIONAL INFORMATION

For additional information or assistance, please contact Corden directly.