GABIONS

DATA SPECIFICATION SHEET

CATEGORY:	GABIONS
APPLICATION:	EROSION PREVENTION
SIZE:	VARIED

PRODUCT OVERVIEW

Gabions and Mattresses are rectangular woven wire mesh baskets filled with rocks to form flexible, permeable, monolithic structures, such as retaining walls or weirs.

Their strength comes from a double twisted hexagonal mesh of steel wire.
In the event of accidental breakage of one or more wires, the double twisted wire configuration ensures that minimal strength reduction occurs.
Their durability comes from their wire type and coating - whether it be the galmac coated mild steel or the galmac wire with an additional Polimac coating.

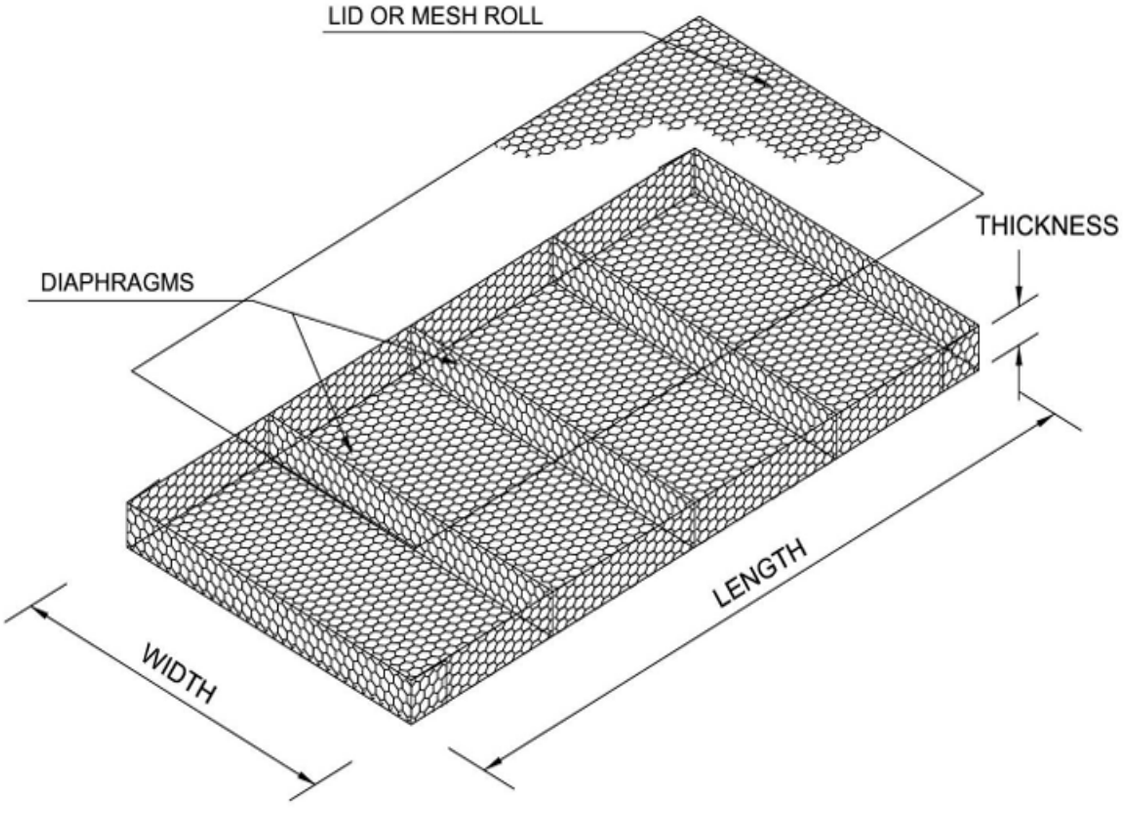
PRODUCT FEATURES

- Durability: high resistance to weather, heavy loads and environmental wear over time
- Permeable: reduces hydrostatic pressure and to minimise erosion risks
- Cost Effective
- Versatile
- Integrates with natural surroundings
- High strength, low maintenance

PRODUCT CHARACTERISTICS

Gabion mattresses are units manufactured from double twisted hexagonal woven steel wire mesh 6x8 type. They are produced in compliance with CPR - Construction Product Regulation 305/2011 and UNI EN 10223-3:2013, having EC marking in compliance with ETA-15/0219.
The management and production system is certified in compliance with standards ISO 9001 and ISO 14001.

Gabion mattresses are divided into uniformly portioned cells by internal diaphragms positioned at 1 meter lateral centers; the diaphragms are created by inserting an upright double-mesh fold in the base panel, which improves diaphragm stability during filling operations.
Gabion mattresses are filled with stones at the project site to form flexible, permeable, monolithic structures such as river bank protection and channel linings for erosion control projects. In order to reinforce the structure, all mesh panel edges are selvaged with a wire having a greater diameter.



Dimensions (m) (LxWxH) 2 x 1 x 0.30
6 x 2 x 0.17
6 x 2 x 0.23
6 x 2 x 0.30

KEY FEATURES & BENEFITS

Proven durability: our gabions and mattresses are supported with well documented research and certifications regarding the durability of the structures. The use of more advanced, durable wire and coating types provide reassurance that when selected appropriately, a 120 - year design life can be achieved.

- **Drainage and erosion control** - Gabions can be designed to control the movement of water within an area and restrict the movement of soil from the site of localised area.
- **Environmental enhancement** - Gabions are regularly designed to enhance the environment on which they exist. Such structures are either vegetated or designed to encourage entrapment of sediment and seed, contributing to the health and diversity of the natural environment.
- **Energy Dissipation** - Gabions structures can be designed to dissipate the energy of the water flowing through a specific area
- **Architectural feature** - Gabions are built with locally available rock to form impressive feature walls and entrances. The impact of a gabion wall is enhanced by the use of discerning rock selection, varying the rock size and types, as well as shaping or tapering the gabions
- **Retaining walls -** Gabions from robust, durable and structurally sound walls and architectural features in road, mining, commercial and industrial projects. They can be stepped, vertical or angled backwards depending on the project requirements. They are typically filled in-situ but can be prefilled and placed where the space/time constraints exist
- **Hydraulic structures** - Due to its flexible nature, gabions are widely used as a solution for a riverbank and scour protection, drainage channels and embankment stability. Gabions and gabion mattresses are used in spillway structures and weirs extensively for river training, the formation of reservoirs, water diversion and erosion control
- **Reinforced soil slopes and walls**: This system is a modular system for reinforced slope systems and mechanically stabilised earth walls can be cost effective.
- **Environmentally friendly:** gabions and mattresses become part of the environment in which they are placed in, promoting rapid growth of natural vegetation where required.
- **Cost-Effective:** compared to traditional materials and methods of construction, both with installed cost and whole-of-life costing.
- **Aesthetically appealing:** correct installation and the right detailing of rock will create an impressive, eye catching feature.

APPLICATIONS

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ANCHOR POINTS

- Star pickets
- Lacing wire
- Pre-formed brace

GROUND PREPARATION

The foundation on which mattresses are to be placed shall be level and graded to the elevations as shown on the project construction drawings
The foundation shall be smooth and free from surface irregularities, loose material and vegetation, in accordance with the project specifications.
Appropriate measures shall be taken for filtering and drainage of the foundation, as per the project specifications (filter cloth, drain works, etc.).
A geotextile shall be installed first, behind or underneath Gabion mattress structures, to comply with the requirements for subsurface drainage applications each mat.

TRANSPORT & STORAGE

Gabion mattress units are delivered to the warehouse storage or construction site. The staff are responsible for checking that the materials are supplied carefully in order to:
1. Ease loading and unloading
2. Avoid risk of damage during transportation
3. Keep the area accessible for any inspection controls
4. Promptly report any anomaly for the acceptance of the goods.

The delivered material is labeled so that the characteristics can be read and the products can be properly identified and used by the staff responsible for installation.

MANUFACTURING MATERIAL

Wire diameter (mm)	2.7	2.0
Mesh size (mm)	80 x 100	60 x 80
Galmac coating (gsm)	245	215
Polimac coating (mm)	0.50	0.50
Rock size fill AS2758.4-2000	100mm (min) 250mm (max)	75mm to 2/3 thickness of mattress or 250mm
Dimensions (m) (LxWxH)	1 x 1 x 1 2 x 0.5 x 0.5 2 x 1 x 0.5 2 x 1 x 1 2 x 1.5 x 1 4 x 1 x 0.5 4 x 1 x 1 6 x 2 x 0.50	2 x 1 x 0.30 6 x 2 x 0.17 6 x 2 x 0.23 6 x 2 x 0.30

ROCK MATERIAL

Ensure that the correct quality, grading and quality of rock is available for the completion of the works.
Rock used should be clean, hard, angular to round, durable and of such quality that they shall not be damaged on exposure to water or weathering during the life of the structure.

The rocks should be also well graded between 75mm and 150 mm.

The range in sizes may allow for a variation of 5% oversize and/or undersize rock, provided it is not placed on the mattress exposed surface.

OUR CLIENTS

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