

MAC.RO. SYSTEM - STEELGRID

STEEL GEOCOMPOSITE WITH GALMAC REVETEMENT

The **STEELGRID** mesh is a woven geocomposite made by steel wire and ropes assembled together during hexagonal double twisted wire mesh production. **STEEL GRID** mesh rolls have a standard length of 25-50 m and 3 m height.

STEELGRID MO (mono oriented). Steel ropes, with 8mm diameter, are used in place of the conventional selvedge wire and are also inserted longitudinally in the woven mesh at a distance of 150 cm. It is particularly indicated in simple revetment type of applications.

STEELGRID BO (bi oriented). Ropes, with 8mm diameter, are used in place of the conventional selvedge wire and are also inserted longitudinally in the woven mesh at a distance of 1,5 m. (apart from the **STEELGRID BO 300** where steel ropes are inserted at a distance of 3,0 m). Steel ropes are also inserted in the cross direction through the mesh securing the edge ropes with clips during production at a distance of 300 - 200 - 150 cm (**STEELGRID BO 300 - STEELGRID BO 200 - STEELGRID BO 150**).

The steelgrid geocomposite is particularly suitable for rockfall protection as a drapery system for surface or soil veneer slope stability. It has the big advantage of connecting the longitudinal ropes to the top anchor rope: the weaving of the ropes inside the steel mesh increases the lining's strength, resulting in a more effective anchoring ability.

The steel wire used in the manufacture of the double twisted wire mesh is heavily galvanized with Galmac, a Zn-5%Al alloy.

The double twist prevents unraveling of the mesh should any accidental wire rupture occur.

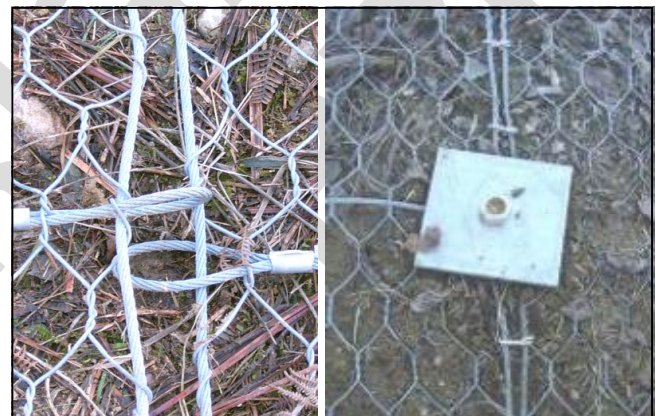
Wire

All tests on wire must be performed prior to manufacturing the mesh.

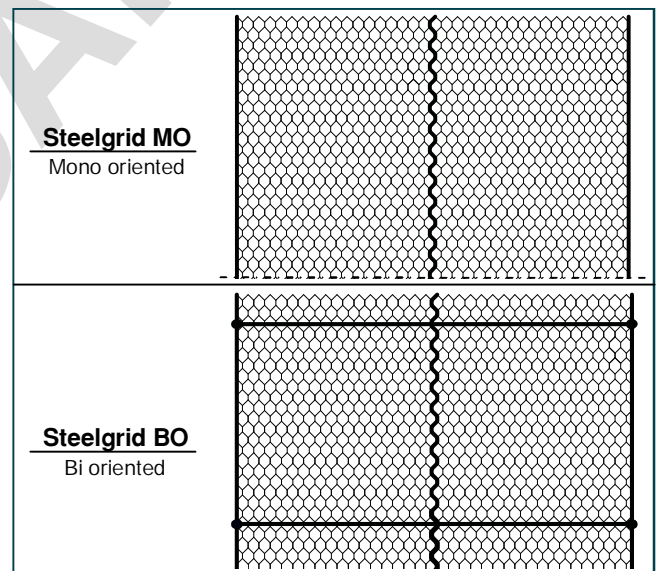
- 1. Tensile strength:** the wire used for the manufacture of rockfall protection shall have a tensile strength between 380-550 N/mm² exceeding, in order to increase the tensile resistance of the finished products, what is suggested from EN10223-3. Wire tolerances (Table 4) are in accordance with EN10218 (Class T1).
- 2. Elongation:** Elongation shall not be less than 10%, according to EN10223-3. Test must be carried out on a sample at least 25 cm long.
- 3. Galmac coating:** minimum quantities of galmac shown at Table 2 meet the requirements of EN10244-2 (Table 2 and Class A).
- 4. Adhesion of galmac:** the adhesion of the galfan coating to the wire shall be such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, in accordance with EN10223-3.
- 5. Outwearing accelerated aging test in SO₂** (28 cycles) in accordance with EN ISO 6988.



STEELGRID application



Particulars of Steelgrid anchorage



Steelgrid Mono Oriented (MO) and Bi Oriented (BO)



n° 226/001

Table 1 - Standard tipologies

Type	Length (m)	Width (m)	Longitudinal rope spacing (m)	Transversal rope spacing (m)
STEELGRID - MO (300)	25.0 50.0	3.00	3.00	-
STEELGRID - MO (150)	25.0 50.0		1.50	-
STEELGRID - BO (150)	24.5 45.0		1.50	1.50
STEELGRID - BO (200)	25.0 44.5		1.50	2.00
STEELGRID - BO (300)	24.5 46.0		3.00	3.00

All sizes and dimensions are nominal. Tolerances of 0/+1m of the length, and $\pm D$ of the roll height and in the rope interax is used.

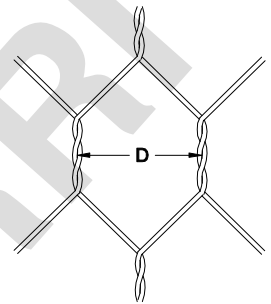
Steel Ropes

- Galmac revetement **UNI EN 10264 - 2** (tab. 2-Class B)
- Diameter (mm) **$\varnothing = 8$**
- Drawn Steel Ropes
type 6x7 IWR EN 12385-4, **UNI ISO 2408**
- Nominal Tensile Strength at breaking **1770 N/mm²**
- Minimum breaking load of the rope **40,3 kN**

Table 2 - Standard Mesh-Wire

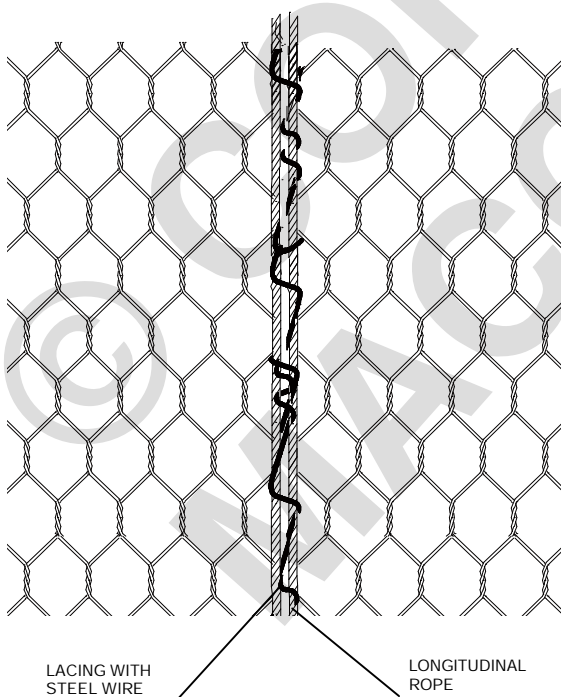
Mesh Type	D (mm)	\varnothing Wire (mm)
8x10	80	3.00
Mesh wire	\varnothing mm	3.00
Wire tolerances	(\pm) \varnothing mm	0.07
Galmac minimum quantity	gr/m ²	255
Longitudinal and Transversal Rope	\varnothing mm	8.00

The tolerance on the opening of mesh $\varnothing D_i$ being the distance between the axis of two consecutive twists, is according to EN 10223-3

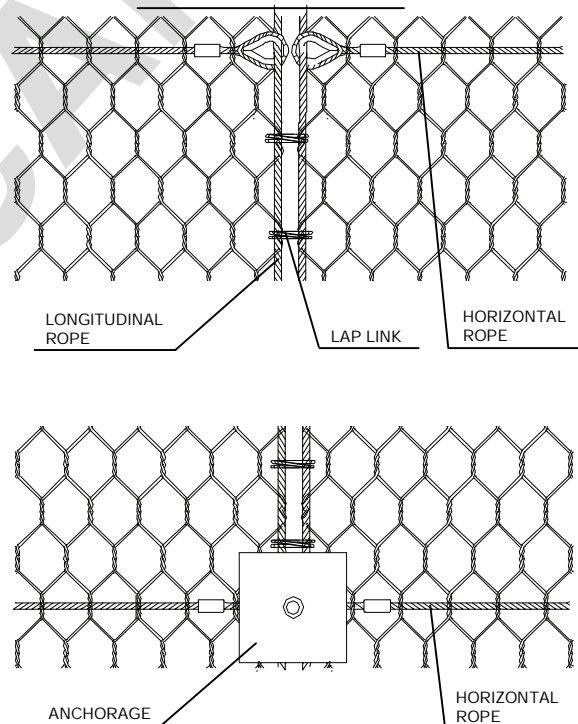


Mesh detail

Lacing of adjacent rolls in case of distance between two trasversal wire ropes.



Lacing of adjacent rolls.



Lacing details

WARNING: Install the product in accordance with National Security Requirements! If the job is done with suspension or security ropes, personal protective equipment against fall risk must be connected with anchor points in agreement with EN 795.

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