MACCAFERRI

TECHNICAL DATA SHEET
Rev. 02, Date 26/02/2013

NEW COATING!!

ROCKFALL PROTECTION NETTING
GALMAC® & PA6

Steel wire mesh netting is used as a drapery system to prevent rocks and debris from falling onto roads and railways. The mesh consists of **Galmac®** coated double twisted steel wire mesh with mechanical characteristics exceeding the requirements of EN10223-3. The steel wire used in the manufacture of the mesh is galvanised with **Galmac®**, a Zn-5%Al alloy.

Due to the characteristics of the double twist, the steel wire mesh can withstand the force of the falling rocks without unraveling in the event of wire breakage.

The nominal tensile strength of the mesh shall be as per Table 2; tested in compliance with EN 15381, Annex D. The standard specifications for the wire-mesh are shown in Tables 2, 3 and 4.

Wire

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

Tensile strength: The wire used for the manufacture of rockfall protection mesh shall have a tensile strength of 380-550 N/mm^2 exceeding the requirements of EN 10223-3, in order to enhance the tensile resistance of the finished products. Wire tolerances (Table 4) shall be in accordance with EN10218 (Class T1).

Elongation: Elongation shall not be less than 10%, in accordance with EN 10223-3. Tests must be carried out on a sample at least 25 cm long.

Galmac® coating: Minimum quantities of **Galmac®** are shown in table 4 meet the requirements of EN 10244-2 (Table 2 - Class E).

Outwearing accelerated aging test: In a general condensation of moisture containing sulphur dioxide the sample shall withstand 28 cycles without showing signs of red rust, in accordance with EN ISO 6988.

PA6 (Polyamide) Coating

The technical characteristics and the resistance of the PA6 to aging, meet the relevant standards. The main values for the PA6 material, according to EN 10245-5, are:

Density / Specific weight: ≤1,15 g/cm^3 in accordance with ISO 1183.

Hardness: Maximum of 82 on the Rockwell Scale M as per test method ISO 2039-2.

Tensile strength: Minimum 30MPa, in accordance with ISO 527-2/1/B/5.

Elongation at break: Not less than 200%, in accordance with ISO 527-2/1/B/5.

Colour: Grey RAL 7037

Resistance to UV radiation: After 4000 hours of exposure to UV light in accordance with ISO 4892-2, the tensile strength and elongation at break will not vary by more than 25%.

Chemical resistance: Resistant to chemicals in concentrations which are normally present in the earth and surface water.

Creep corrosion: When immersed in a solution for 1000hrs, creep corrosion penetration between the polymer coating and the steel wire beneath will not exceed 2.5mm at pH5, 1.5mm at pH7 and 1mm at pH9.

Polymer Adhesion: Adhesion of the polymer coating to the steel wire shall be Class 1a in accordance with EN10245-5 meeting the minimum requirements of Level 1 to 3 in accordance with EN10245-1.

Brittleness Temperature: not higher than –30°C in accordance with ASTM D746.

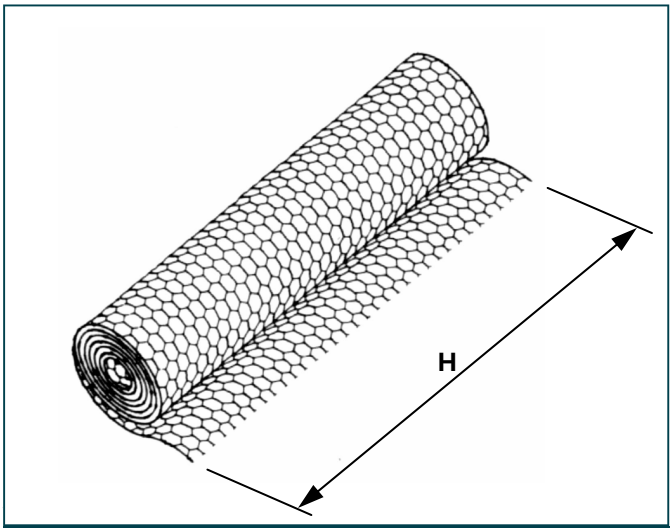

Figure 1

The tolerance on the mesh opening ‘D’, being the distance between the axis of two consecutive twists, is in accordance with EN10223-3.

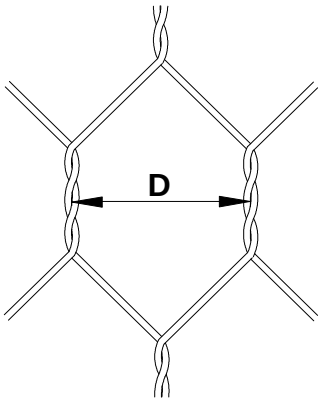

Figure 2

Example of Double Twist (DT) Rockfall Protection Netting

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1. Sizes for rockfall protection netting	
L=Length (m)	Roll Width (m)
25	2, 3, 4
50	2, 3, 4
100	2, 3, 4

All sizes and dimensions are nominal. Tolerances of 0/+1m of the length, and ±D of the height shall be permitted.

Lacing Operations

Lacing operations can be made by using the tools shown in Fig.5. Galmac® coated steel rings having the following specification can be used instead of lacing wire (Figs. 3, 4):
• diameter: 3.00 mm
• tensile strength: 1700 N/mm^2.
Spacing of the rings must not exceed 200 mm (Fig.3)

Quantity Request

When requesting a quote, please specify:
• size of rolls (length x height, see Fig.1),
• type of mesh,
• type of coating
EXAMPLE: 100 rolls of 25m length, 4m height, mesh type 8x10, wire Ø 2.7/3.5 mm, Galmac + PA6 coated

2. Standard Mesh Wire				
Mesh Type	D (mm)	Tolerance	ø Wire (mm)	Mesh Tensile Strength (kN/m)
6x8	60	+16%/-4%	Int.2.2/Ext.3.0	37
8x10	80	+16%/-4%	Int.2.7/Ext.3.5	50

Table 3 - Standard Wire Diameters			
Mesh Type	ø Lacing Wire (mm)	ø Mesh Wire (mm)	ø Selvedge Wire (mm)
6x8	Int.2.2/Ext.3.0	Int.2.2/Ext.3.0	Int.2.7/Ext.3.5
8x10	Int.2.2/Ext.3.0	Int.2.7/Ext.3.5	Int.3.4/Ext.4.2

4. Wire tolerances and coating				
Internal Wire Ø	mm	2.2	2.7	3.4
Wire tolerance	(±) ø mm	0.06	0.06	0.07
Min.Quantity of Galmac	g/m^2	60	60	60

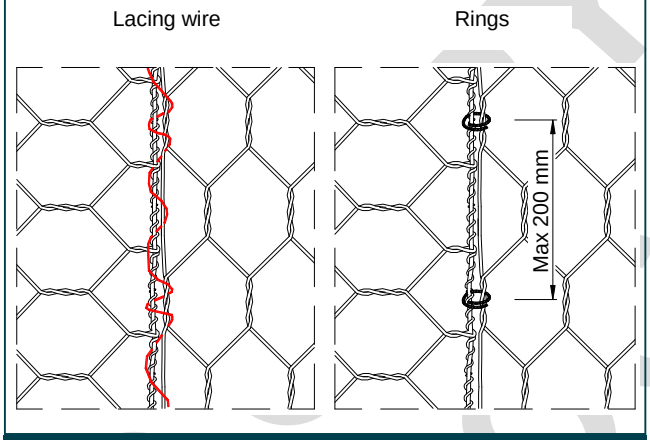


Figure 3

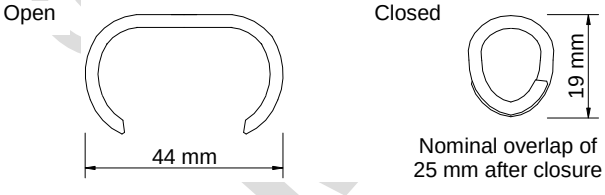
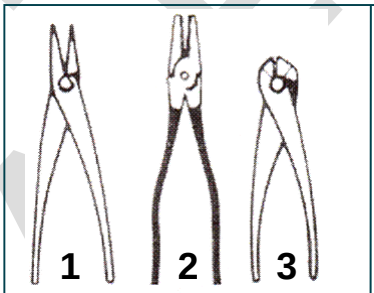
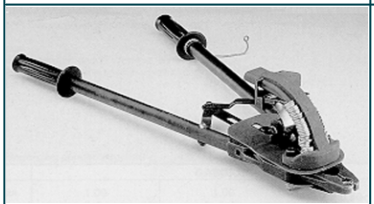


Figure 4



A
1. Pliers
2. Pliers with nipper
3. Nipper

B Pneumatic Spenax tool



C Manual tool

Figure 5

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