MACCAFERRI

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TECHNICAL DATA SHEET
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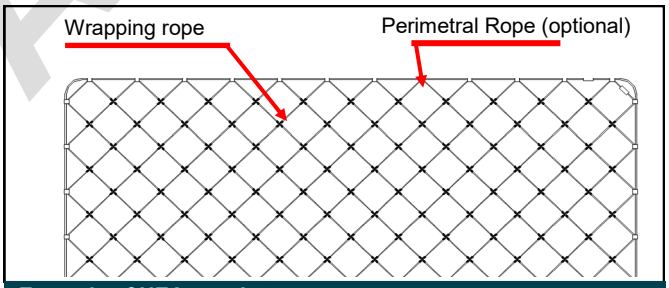
MAC.RO™ SYSTEM - HEA PANEL
HIGH ENERGY ABSORPTION CABLE PANELS

HEA Panels (High Energy Absorption) are used within rockfall protection works where high strength and puncture resistance at very low strain, is required.
The panel is woven from one continuous length of high tensile steel wire rope (grade ≥1770) and joined at the crossing points with the patented HEA 'double knot', to form a durable and reliable connection. An aluminium ferrule connects the two ends of the steel wire rope together, in accordance with EN 13411-3.

Application

Lacing knot detail



Example of HEA panel structure

Standard panel dimensions			
Nominal mesh size	Panel rope diameter (mm)	Panel width (m)	Panel length (m)
250x250	8	Up to 5	Up to 10
300x300			
400x400			
250x250	10		
300x300			
400x400			

External panel size is nominal (tolerance ±5%)
Mesh size is nominal (tolerance ±10%)
* Other dimensions of panel are available upon request

Knot : Lacing/binding wires	
Double knot of two pairs of wires	
Steel wire coated with GalMac®	EN 10244-2, Class A
Diameter (mm)	Ø = 3 (UNI EN 10218)
Tensile strength of the wire used for the bars (N/mm²)	350 - 550

Knot: Tear resistance	
Tear breaking force (kN)	24.0

Steel ropes		
Wrapping (Panel) rope		
Steel wire rope (diameter and construction) (EN 12385-2, EN 12385-4)	Diameter Ø(mm)	
	8	10
	6x7+WSC	6x19+WSC
Rope grade (EN 12385-2)	≥ 1770	
Perimeter rope (optional)		
Diameter Ø (mm)	10 - 12 - 14 - 16	
Construction (EN 12385-2)	6x19+WSC	
Rope grade (EN 12385-2)	≥ 1770	

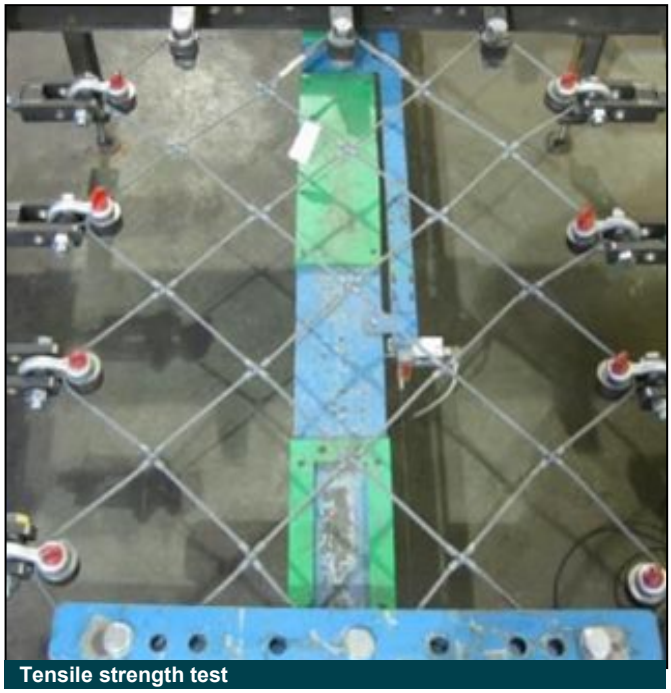
Coating of (panel and perimeter) ropes	
Standard	Plus
Zinc coating	GalMac® (Zn-Al5%) coating
Class B (EN 10264-2)	Class A (EN 10264-2)

CE
1301-CPR-1175

ETA n. 16/0164

Quantity request
When a quotation is required, please specify:
- Panel size (widthxlength in m)
- Mesh size (in mm)
- Panel rope diameter (in mm)
- Perimeter rope diameter, if any (in mm)
- Zinc or GalMac® coating on the ropes (Class A or B)

Example 1:
30 No. HEA Standard Panels, 6x3 m, 300x300 mm, panel rope 8 mm, perimeter rope 12 mm, Zinc Class B
Example 2:
60 No. HEA Plus Panels 5x4 m, 400x400 mm, panel rope 10 mm, no perimeter rope, GalMac® Class A



Tensile strength test

Punching resistance test

Tensile strength (UNI 11437) (ISO 17746)		
Nominal mesh (mm)	Panel rope diameter (mm)	Minimum tensile strength (kN/m)
250x250	8	170 ± 17
250x250	10	350 ± 35
300x300	8	160 ± 17
300x300	10	255 ± 15
400x400	8	125 ± 10
400x400	10	185 ± 15

Punching resistance (UNI 11437) (ISO 17746)			
Nominal mesh (mm)	Panel rope diameter (mm)	Minimum Ultimate punching load (kN)	Ultimate punching displacement (mm)
250x250	8	260 ± 15	240 ± 20
250x250	10	410 ± 25	300 ± 30
300x300	8	250 ± 15	280 ± 30
300x300	10	400 ± 25	310 ± 30
400x400	8	200 ± 15	260 ± 30
400x400	10	300 ± 20	310 ± 30

It is possible to request HEA panels made of Stainess Steel ropes, to withstand very aggressive environmental conditions.
The resistance parameters will vary accordingly.

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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