ETAG 27 approved and certified Rockfall Protection Systems Energy levels: 100 – 500 kJ

Text for invitation of tender
Rockfall protection systems TSC-100-ZD, TSC-250-ZD, TSC-500-ZD
Rockfall protection systems with retaining ropes

General information

Energy level [kJ]:	e.g. 0, 1 or 2
Maximum energy level MEL [kJ]	e.g. 100, 250 or 500
Nominal height [m]:	e.g. 2.0
Total length [m]:	e.g. 250
Number of rows:	e.g. 5
Average distance between posts [m]:	e.g. 10

The offered rockfall protection system must be tested, approved and certified in a 1:1 field test (1 x MEL, 2 x SEL) conforming to the specifications of the ETAG 27 guideline. The offered height of the rockfall protection system can be increased by 0.5 m maximally for tested systems with heights less than 4.0 m and by 1.0 m maximally for tested systems with heights bigger or equal 4.0 m. It must be verified that the residual height of the system at MEL-Test must be ≥ 50 % of the nominal height (category A).

Moreover the rockfall protection system hast to fulfil following critera at MEL-Test:

- Openings after the impact of the net next to posts with diameters ≥ 0.2 m at level beneath the residual height, between lower bearing rope and net are not allowed.
- Openings of the net on side edges after the impact greater 10 % of nominal height are not allowed if the border fields are located within the hazardous area.
- Breakages of primary net, upper or lower bearing ropes or retaining ropes or of part cross-sections of ropes (a single litz) are not allowed. Breakages of single wires are allowed, if this is not a complete litz.
- Breakages at connections between primary net and bearing ropes e.g. using sewing ropes are not allowed.

The European technical approval ETA and the CE-certificate according to ETAG 27 as well as the list of the measured anchor forces of the MEL-Test has to be attached to the offer.

Design of the Main Structure and Individual Components

The design of main structures and of single components must be such as described below (or equal / better). Individual components not cited herein must correspond to the appropriate technical standards (e.g. DIN) as well as to certified and approved system.

Interception structure

- *Primary net:*
  Type: Omega-Net
  Corrosion protection: Zinc coated class A acc. EN 10244-2
  Maximum mesh size: 135 mm
  Connection to bearing ropes: threaded
- *Additional layer:* *(optionally)*
  Typ: Rectangular netting
  Corrosion protection: Zinc coated class A acc. EN 10244-2
  Maximum mesh size: 50 mm
  Minimum wire diameter: 2.5 mm

Support structure

- *Post:*
  Corrosion protection: hot dip galvanized according to EN ISO 1461
  Design: Pendulum support (hinge base plate)
- *Base plate:*
  Corrosion protection: hot dip galvanized according to EN ISO 1461
  Connection to underground: anchored installation

Connection components

- *Bearing ropes:*
  Type: according to EN 12385-4
  Corrosion protection: hot dip galvanized
- *Retaining ropes:*
  Type: according to EN 12385-4
  Corrosion protection: hot dip galvanized

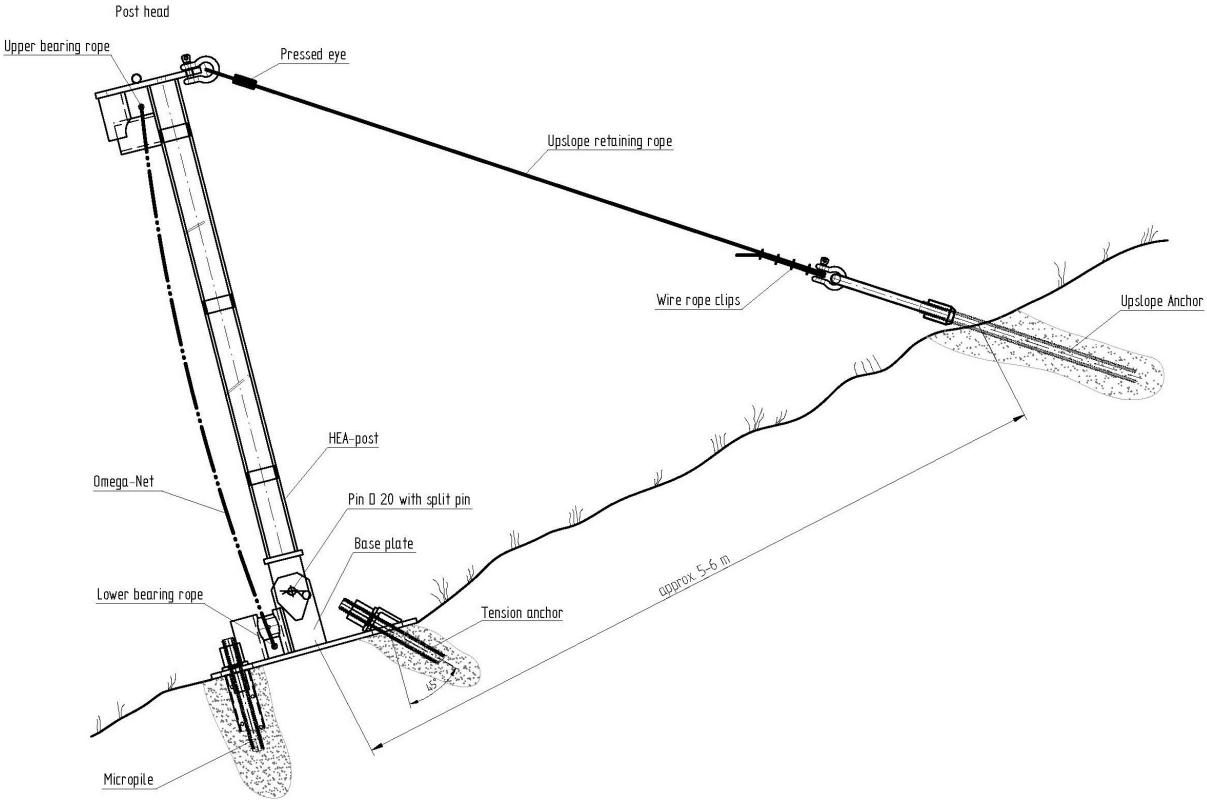
Energy absorbing elements (brake elements)

- *Operating mode:* Energy dissipation: plastic deformation
- *Position:* close to anchors, so that can be carried out without dismantling the fence
- *Corrosion protection:* hot dip galvanized according to EN ISO 1461

Anchoring

- *of ropes:* using anchor bars and eyelet frames
- *of posts:* using anchor bars (2 pieces per base plate)

Lateral view TSC-100-ZD, TSC-250-ZD, TSC-500-ZD



Plan view TSC-100-ZD, TSC-250-ZD, TSC-500-ZD