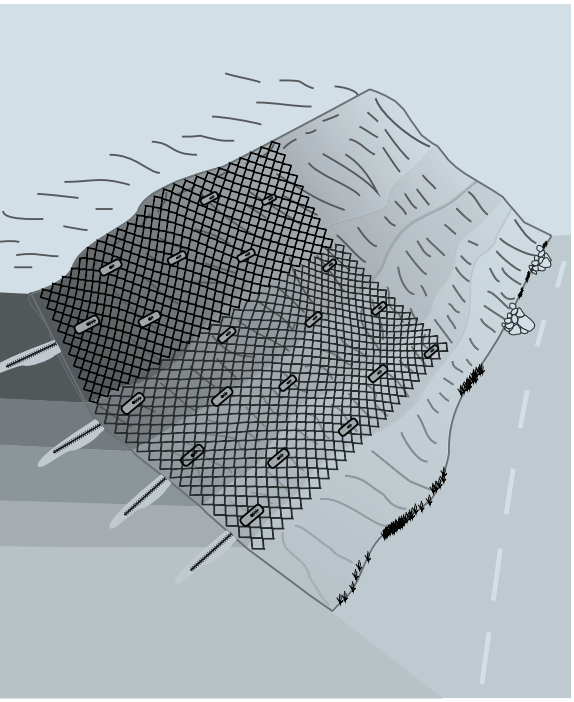
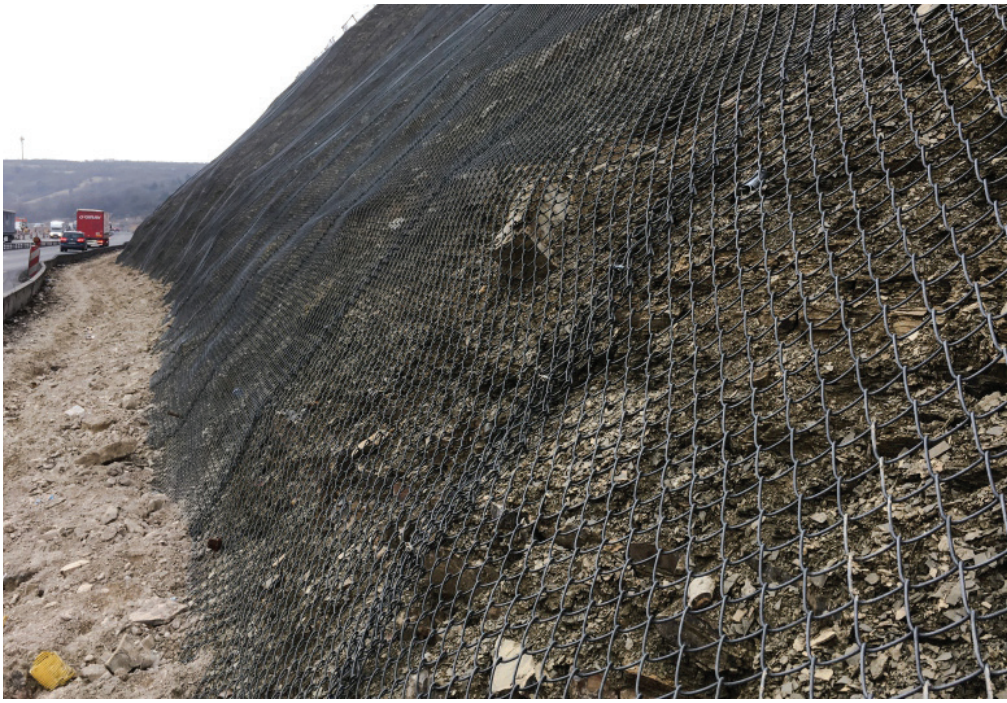
GEOQUEST | TRUMER Schutzbauten





HPN+ products are developed for high tensile strength applications. It can be used for stabilizing slopes by pinning them with a combination of mesh and rock or soil anchors, as well as installed as a drape to control erosion. Thus, the frequency and magnitude of events such as rockfall and shallow slumps can be reduced.

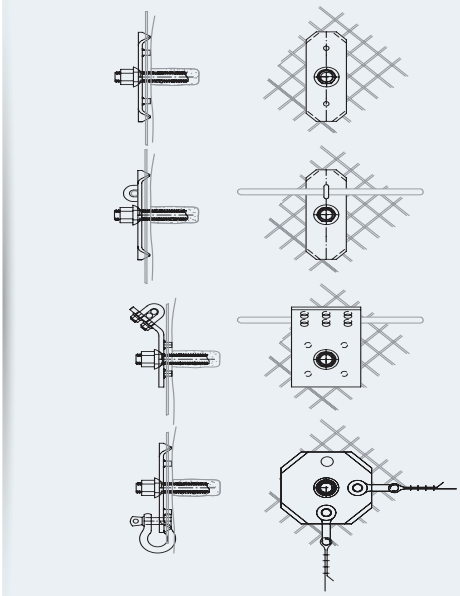
Slope Retention System

HPN+

ETA CE

Slope Retention System – HPN+

Anchor plates with two rope connections
(in vertical and horizontal directions)



MATERIAL

HPN+ rolled rectangular netting products consist of galvanized high grade corrosion prevention using Zinc-Aluminium coating. They are manufactured in accordance with the European Standard EN 10223-6 and certified by ETA (EAD 230025-00-0106).

INSTALLATION

The panels are unrolled from the top to the bottom in the hazard zones. The different mesh layers are then connected by overlapping and sewing them together with high-tensile sewing rope in the vertical direction. Horizontal connections are made with an original wire strand yielding a seamless connection. Additionally, mesh can be secured by spike plates at anchor positions.

ADVANTAGES

Under most conditions, HPN+ can be easily and quickly installed, thereby considerably reducing mitigation costs. Furthermore, corrosion protection is assured by a high-quality of metallic coating that increases the life and durability of the netting.

Mesh Characteristics

Mesh Type[i]	Rectangular netting
Mesh Size [a x a] mm (in.)	60 x 60 (2.36 x 2.36)
Opening angle [α]	90°
Number of mesh openings, length per m (per ft)	11 (3.4)
Number of mesh openings, width per m (per ft)	11 (3.4)

[i] in accordance with European Standard EN 10223-6

Wire Properties

Wire Diameter mm (in.)	4.6 (0.18)
Tensile Strength N/mm² (ksi)	840 - 990 (121.8 to 143.6)
Corrosion Protection[i]	Zn95Al5 galvanized
Mass of Coating[i] g/m² (oz/ft²)	≥ 280 (0.92)
Hours of Salt Spray Test[ii]	1000

[i] in accordance with European Standard EN 10244-2, class A
[ii] in accordance with European Standard EN ISO 9227 (NSS-Test)

Strength Properties

Test Description	Result
Tensile Strength, lengthwise kN/m (lbf/ft)	≥150 (10.278)
Tensile Strength, crosswise kN/m (lbf/ft)	≥ 150 (10.278)
Resistance of Puncture, unsupported[i] kN (lbf)	102.1 (22.953)
Resistance of Puncture, supported[ii] kN (lbf)	392.6 (88.260)
Resistance of Puncture, ASTM[iii] kN (lbf)	150.7 (33.879)
Shear resistance[iv] kN (lbf)	196.3 (44.130)
Shear-puncture resistance[v] kN (lbf)	35.9 (8.071)

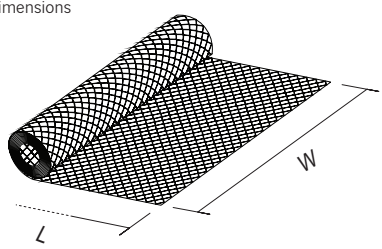
[i] tested without a deformable layer beneath mesh (in open air), in accordance with test report B4/435/16-19 of BVFS
[ii] tested with a deformable layer beneath mesh, in accordance with test report B4/435/16-21 of BVFS
[iii] tested with circular plate according to ASTM A975-11, in accordance with test report B4/435/16-20 of BVFS
[iv] shear resistance on upper edge of TRUMER spike plate (1/2 value of resistance of puncture, supported)
[v] slope parallel tensile stress tested with TRUMER spike plate, in accordance with test report B4/587/18-8 of BVFS

Roll Sizing Options

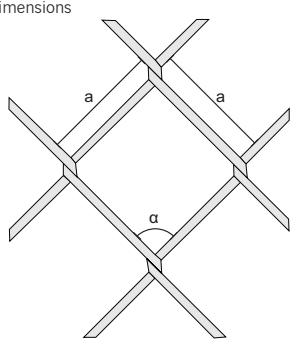
Width [W] m (ft)	3.00 (9.84)[i]	3.50 (11.48)[i]
Length [L] m (ft)	15.00 (49.21) Standard[i]	
Weight kg/m² (lb/ft²)	4.56 (0.93)	

[i] Other dimensions are possible in accordance with project specific design requirements

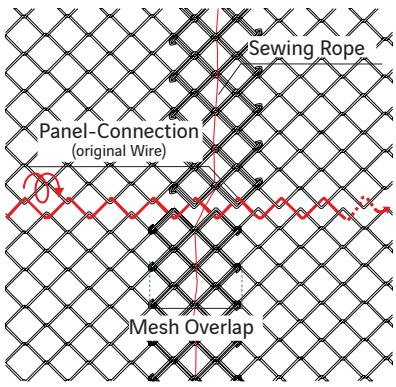
Roll Dimensions



Mesh Dimensions



Seam Connection



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