

Slope



retention system



Sigma Netting 50/3.2



European Technical Assessment

ETA Number	ETA-19/0314
Issuing Body	Building Testing and Research Institute (TSUS)
Date of Issue	01 July 2020

Certificate of Constancy of Performance

Certificate Number	1301-CPR-1563
Issuing Body	Building Testing and Research Institute (TSUS)
Date of Issue	07 September 2020

Area of Application:

The TRUMER Sigma Netting 50/3.2 is 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.

Material:

TRUMER rolled Sigma 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.

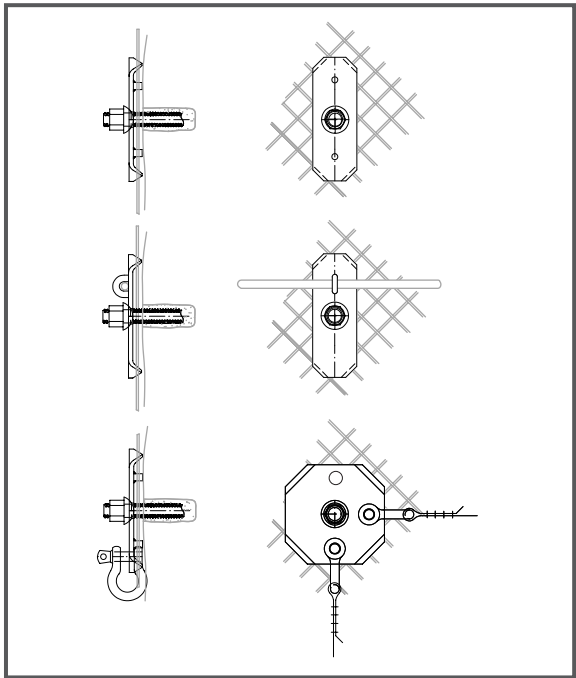
Installation:

The panels are unrolled from the top to the bottom in the hazard zones. The different mesh layers are then connected by overlapping and inserting high-tensile connection clips or sewing them together with high-tensile sewing ropes 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, the Sigma Netting 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.

Anchor Connection Plate*



* Anchor plates with two rope guidances, i.e. in vertical and horizontal directions are also available



Mesh Characteristics

Mesh Type*	Rectangular netting
Mesh Size [a x a] mm (in.)	50 x 50 (2.36 x 2.36)
Opening angle [α]	90°
Number of mesh openings, length per m (per ft)	13 (~4)
Number of mesh openings, width per m (per ft)	13 (~4)

* in accordance with European Standard EN 10223-6

Wire Properties

Wire Diameter mm (in.)	3.2 (0.13)
Tensile Strength N/mm ² (ksi)	≥ 1770 (257)
Corrosion Protection*	Zn95Al5 galvanized
Mass of Coating* g/m ² (oz/ft ²)	≥ 150 (0.49)
Hours of Salt Spray Test**	1000

* in accordance with European Standard EN 10244-2, class B

** 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* kN (lbf)	105.2 (23.650)
Resistance of Puncture, supported** kN (lbf)	481.8 (108.313)
Resistance of Puncture, ASTM*** kN (lbf)	154.9 (34.823)
Shear resistance**** kN (lbf)	240.9 (54.156)
Shear-puncture resistance***** kN (lbf)	48.8 (10.971)

* tested without a deformable layer beneath mesh (in open air), in accordance with test report B4/587/18-2 of BVFS

** tested with a deformable layer beneath mesh, in accordance with test report B4/587/18-4 of BVFS

*** tested with circular plate according to ASTM A975-11, in accordance with test report B4/587/18-3 of BVFS

**** shear resistance on upper edge of TRUMER spike plate (1/2 value of resistance of puncture, supported)

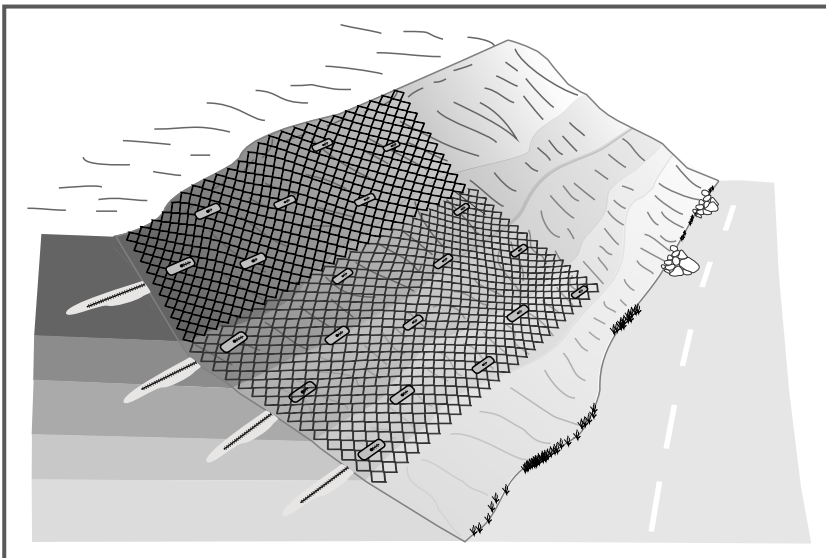
***** slope parallel tensile stress tested with TRUMER spike plate, in accordance with test report B4/587/18-5 of BVFS

Roll Sizing Options

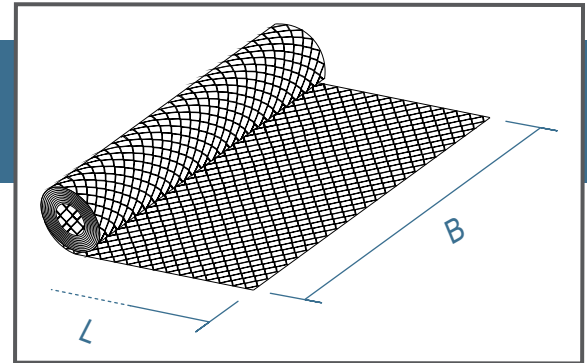
Width [W] m (ft)	2.00 (6.56)*	3.00 (9.84)*	3.50 (9.84)**	4.00 (13.12)*
Length [L] m (ft)	20.00 (65.62)*	25.00 (82.00)*		20.00 (65.62)*
Weight kg/m ² (lb/ft ²)	2.75 (0.56)			

* Other dimensions are possible in accordance with project specific design requirements

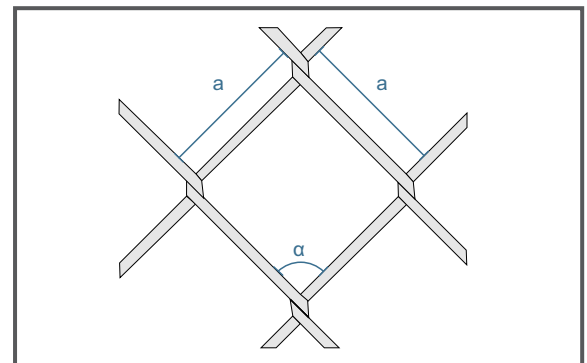
** Dimension for transport with 40' container



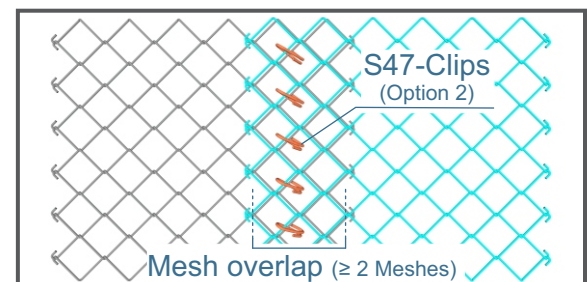
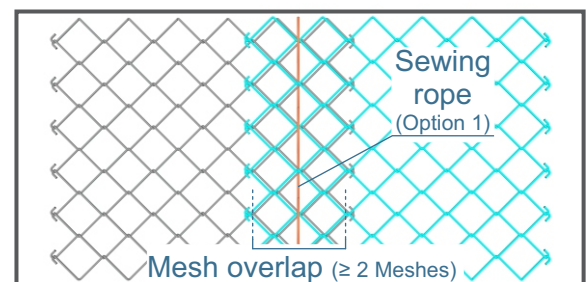
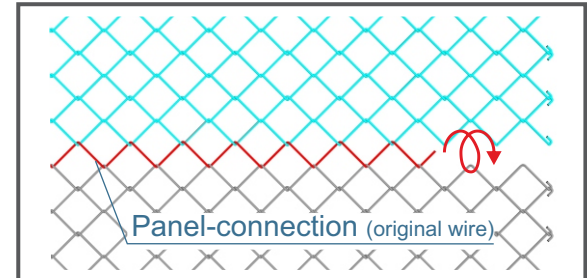
Roll Dimensions



Mesh Dimensions



Panel-connections*



* Characteristics of mesh overlaps, sewing ropes (≥ 4 mm) and number of S47-Clips depend on the load requirements and must be carried out in accordance to lokal standards and regulations.