

Debris flow protection system



Gully Net - Data Sheet



Area of Application:

TRUMER debris flow barriers are designed on a site-to-site basis to protect infrastructure, utilities, buildings and lives from debris flows and debris floods. Typical barriers are installed in run-out or deposition zones, close to the elements at risk that they protect or in series in the torrent channel. Gully Nets are designed without retaining ropes and therefore no components in the upstream path of the flow that can fail or compromise the functionality of the system also after smaller events.

Material:

TRUMER uses steel components and steel wire rope made from high quality materials, following a stringent quality assurance program. TRUMER is ISO 9001 certified.

Installation:

Structures by TRUMER are designed with as few components as possible to simplify installation and reduce maintenance. Anchorage design and construction is dependant on site conditions and are the responsibility of the project engineer.

Advantages:

The lack of retaining ropes on the upstream side of the Gully Net combined with multiple points for de-installation, high grade brake elements and the flexibility of the Omega-Net makes it the most reliable and maintenance friendly system on the market.

Classification

Model	Gully Net
Style	Lateral Anchored
Typ. Impact Pressure* <i>kN/m² (lbf/ft²)</i>	up to 150 (3130)
Typical Height Range* <i>m (ft)</i>	up to 7.5 (24.6)
Typical Width Range* <i>m (ft)</i>	up to 15 (49.2)

* Values are project related and have to be customized to the site and loading conditions.

Design Parameters

Site	<input checked="" type="checkbox"/> Cross-section
	<input checked="" type="checkbox"/> Boundary Conditions
	<input checked="" type="checkbox"/> Distance to element of risk <i>m (ft)</i>

Load Scenario	Dynamic Distributed Load
	<input checked="" type="checkbox"/> Impact Pressure <i>kN/m² (lbf/ft²)</i>
	<input checked="" type="checkbox"/> Flow Height <i>m (ft)</i>
	<input checked="" type="checkbox"/> Number of Pulses
	<input checked="" type="checkbox"/> Type of Load (e.g. triangular, trapezoidal)
	Dynamic Puncture Load
	<input checked="" type="checkbox"/> Block Mass <i>kg (lb)</i>
	<input checked="" type="checkbox"/> Block Geometry <i>m (ft)</i>
	<input checked="" type="checkbox"/> Velocity <i>m/s (ft/s)</i>
	Filled Barrier
	<input checked="" type="checkbox"/> Earth Pressure <i>kN/m² (lbf/ft²)</i>
	<input checked="" type="checkbox"/> Fill Height <i>m (ft)</i>
	<input checked="" type="checkbox"/> Type of Load (e.g. triangular, trapezoidal)
<input checked="" type="checkbox"/> Overlapping Load Scenario	

Primary Net*

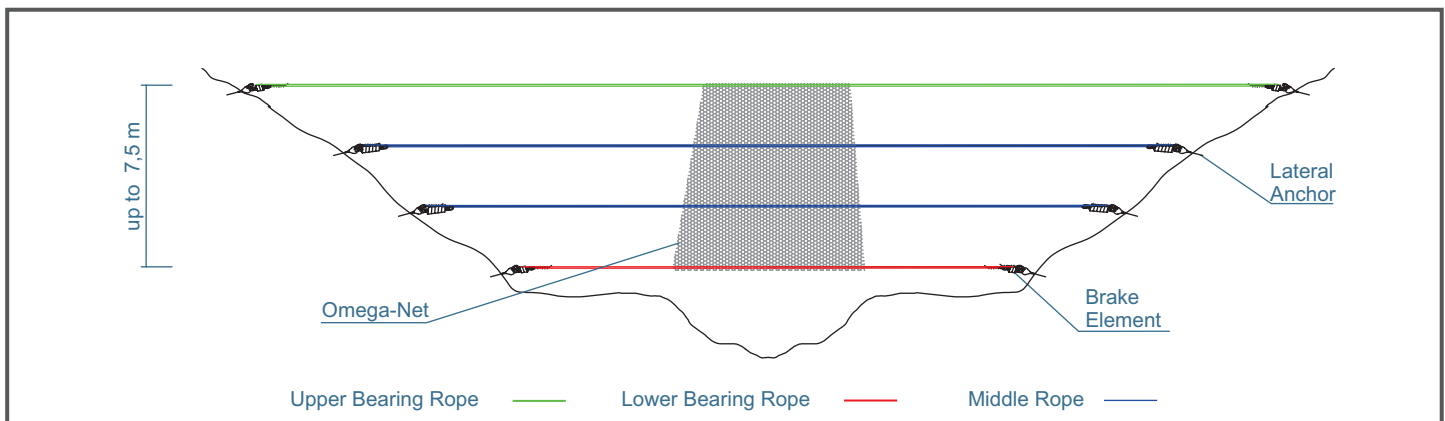
Omega-Net Model	7.5/135	9.0/185	10.5/180
Type	Steel Wire Cable		
Rope Diameter <i>mm (in.)</i>	7.5 (0.295)	9.0 (0.354)	10.5 (0.413)
Spiral Rope Strand Type	1 x 7		1 x 19
Single Wire Diameter <i>mm (in.)</i>	2.5 (0.098)	3.0 (0.118)	2.1 (0.083)
Corrosion Protection**	Zn, ZnAl		ZnAl
Approx. Mesh Size <i>mm (in.)</i>	135 x 135 (5.3 x 5.3)	185 x 185 (7.3 x 7.3)	180 x 180 (7.1 x 7.1)
Unit Weight <i>kg/m² (lb/ft²)</i>	~ 5.6 (1.15)	~ 6.8 (1.39)	~ 10.5 (2.15)
Mesh Tensile Strength calculated <i>kN/m (lbf/ft)</i>	386 (26449)	465 (31862)	756 (51802)
Connection to Main Ropes	Threaded		
Connection to Adjacent Panel	3/8" Shackle	7/16" Shackle	1/2" Shackle

Other rope diameters from 4.5 mm (0.18 in.) to 10.5 mm (0.41 in.) and mesh sizes from 100 mm (3.94 in) to 250 mm (9.84 in) are possible on request!
* in accordance with European Standard EN 10244-2, class A

Bearing and Middle Ropes*

Max. Rope Diameter <i>mm (in.)</i>	24 (0.945)
Corrosion Protection	Zn or ZnAl (Class A or B)
Brake Element Model	AVT phx

Typical Layout

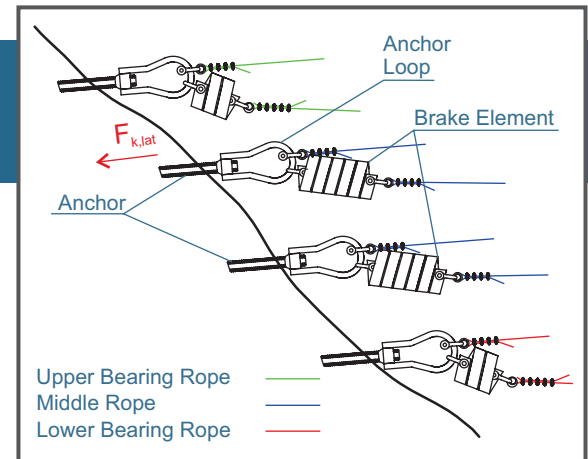


General Layout and Anchorage:

The given layout and data for the gully net is an example of an existing project. Every gully net project is customized to the site and loading conditions, thus stated values can change.

Anchor layout should follow the geometry provided in the installation manual with the anchor oriented as close as possible to the direction of the anticipated rope forces. It is acknowledged that due to site characteristics deviations from the ideal are unavoidable. In this case, the project engineer should use their best judgement to find a suitable location and orientation.

Lateral Anchorage



Number of ropes, anchors and brake elements is dependent on the load scenario and site conditions. Systems without brake elements are possible!

Maintenance Seam Connection

