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ROPE NET

Rockfall prevention system
that protects the environment

TOKYO ROPE MFG. CO., LTD.

Rope Net prevents rockfalls and preserves the landscape.

Rope Net advantages

Minimal removal of trees during installation works

The net is made of separate ropes that go around the trees, so that removal of trees is not required.

Fixes stones at slopes

Flexible and durable wire rope firmly covers the slope and attaches large stones to it, preventing the falling of non-attached stones on a slope and providing a slope stabilization.

Ease of assembling

Materials and equipment used for Rope Net have a light weight, so that assembling causes no difficulties.

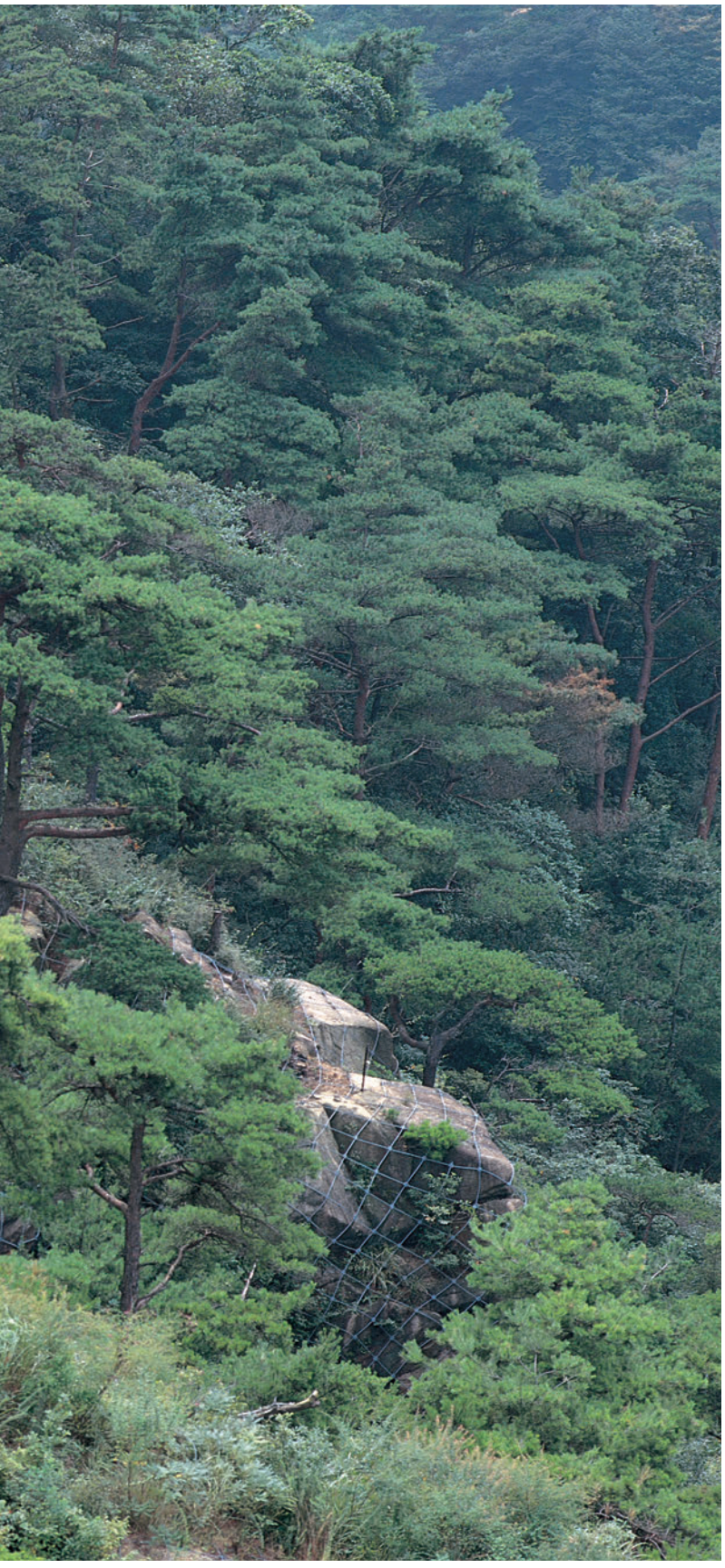
Possibility of use with steel net

At areas with the fall of soil ground and stones through the net with 50cm x 50cm meshes, Rope Net can be used along with a net that can hold small stones.

Examples of completed projects using Rope Net

Rope Net that helps eliminate the rockfalls, also protects environment. If you use Rope Net with a net or other systems that prevent rockfalls not only relatively large rocks, but also of small stones.

In the process of assembling Rope Net direction and intervals between wire ropes that form the net are defined according to the tree location. Thereby tree removal is not required.



Rope Net firmly holds large non-attached stones, in areas with the fall of small and large stones.
Gallets of large stones, a net attached to the Rope Net can be used.

Examples of completed projects using Rope Net

Cement anchor

The main component of a system that prevents the rockfalls is an anchor. The cement capsule, used for its installation, is manufactured under strict quality control. Thereby cement anchor will be securely attached.

Rope Net type

Unit of measure: mm

Type	Main rope			Strengthened rope			Anchor	
	Construction Diameter	Vertical interval (b)	Horizontal interval (h)	Construction Diameter	Vertical interval	Horizontal interval	Rock	Soil
2 x 2 – 0.5 x 12 (standard type)	3 x 7 ϕ12	2 (m)	2 (m)	3 x 7 ϕ12	0.5 (m)	0.5 (m)	Cement anchor Ⓐ, Ⓑ D22(M20) x 1000	Pipe anchor Ⓐ, Ⓑ ϕ114.3 x 4.5 -1630

Notice 1: Ⓐ type anchors are set at the net boundary
Ⓑ type anchors are set inside the net

Construction components

Unit of measure: mm

Type	Ropegrip		Cross-shaped grip	Cross-shaped anchor grip	Cross clip
	Main rope	Strengthened rope			
2 x 2 – 0.5 x 12 (standard type)	For ϕ12 - 800 (Cement anchor Ⓐ)	For ϕ12 - 800	50 x 95	50 x 95	3.2 x 60 x 60
	For ϕ12 - 975 (Pipe anchor Ⓐ)				

Anchor installation

Type	installation procedure	Equipments	Notes
Cement anchor Ⓐ, Ⓑ for rocks	Plunge a cement capsule into water for 5 minutes untill air bubbles stop escaping. Place the cement capsule into a 900 mm hole, made by 40-44 diameter drill. Place an anchor in the hole.	Compressor Bit Rock-drill	Cement capsule (standard type) - ϕ36 x 600 - 2 pieces (per 1 anchor) - at least 24 hours untill full hardening of the construction
Pipe anchor Ⓐ, Ⓑ for soil	With the help of puncher place pipe anchor into a 1.5 meter hole.	Compressor Puncher	

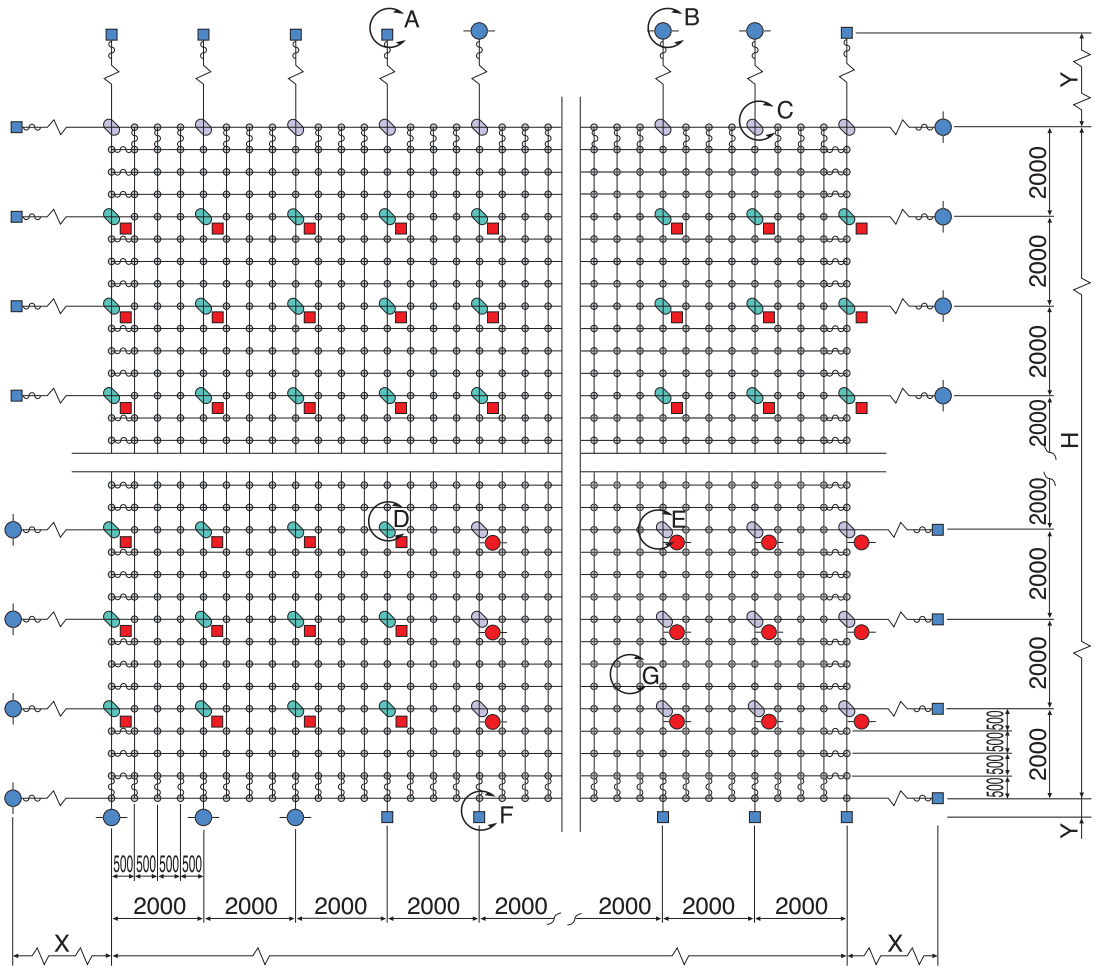
Rope Net strength

In case of difficulties, that happen during the installation, you can consult Tokyo Rope experts.

Type	Load of falling rocks		Slope ratio (1:X)							
	kN/m^2	kN*	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3
2 x 2 – 0.5 x 12	12.50	50	■							
	11.25	45	■	■						
	10.00	40	■	■						
	8.75	35	■	■	■					
	7.50	30	■	■	■	■	■			
	6.25	25	■	■	■	■	■	■		
	5.00	20	■	■	■	■	■	■	■	■

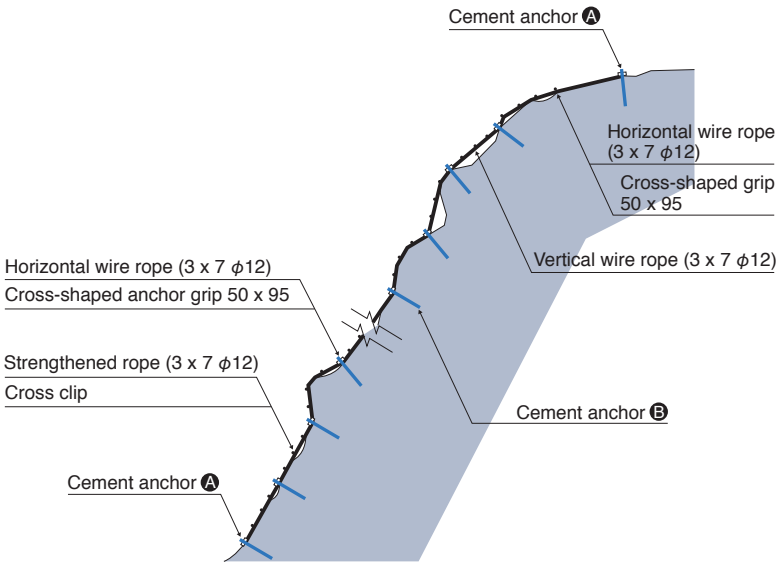
*Load, applied to a mesh area, generated by the wire ropes (b·h)

Rope Net standard design
2 x 2 – 0.5 x 12



Detailed description of Rope Net components

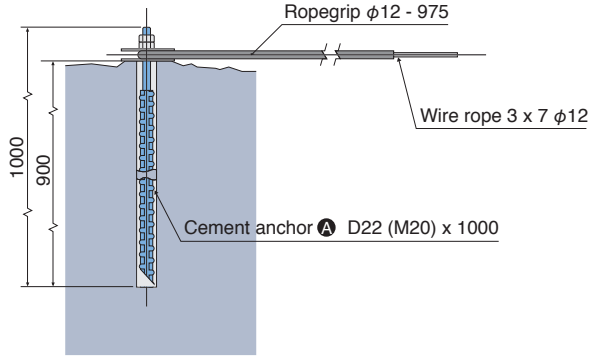
Component name		Graphical symbol
Vertical wire rope		
Horizontal wire rope		
Strengthened vertical rope		
Strengthened horizontal rope		
Ropegrip (for cement anchor Ⓐ)		
Ropegrip (for pipe anchor)		
Ropegrip (for strengthened wire rope)		
Anchor	Cement anchor Ⓐ (for rocks)	
	Cement anchor Ⓑ (for rocks)	
	Pipe anchor Ⓐ (for soil)	
	Pipe anchor Ⓑ (for soil)	
Cross-shaped grip		
Cross-shaped anchor grip		
Cross clip		



Rope Net construction

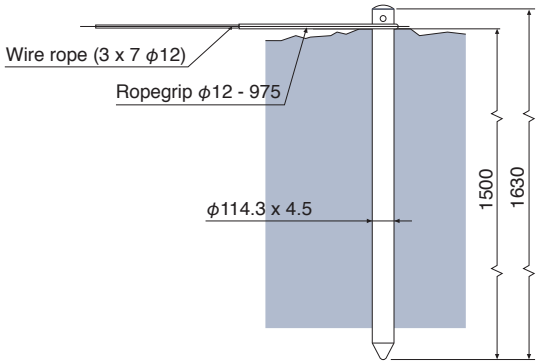
Element A

Cement anchor Ⓐ



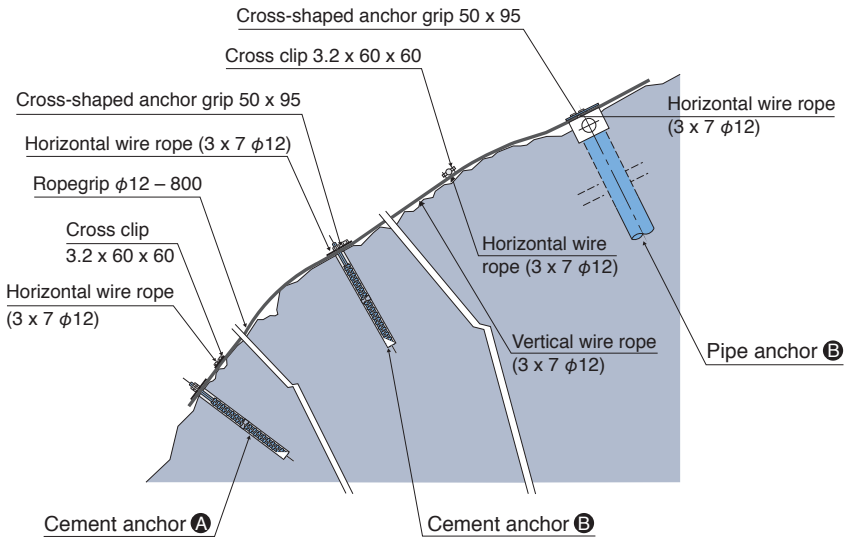
Element B

Pipe anchor Ⓐ



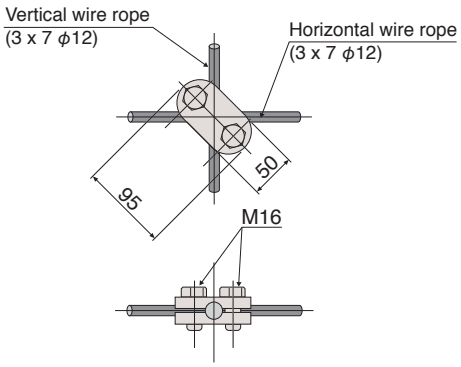
Element E

Element D, F



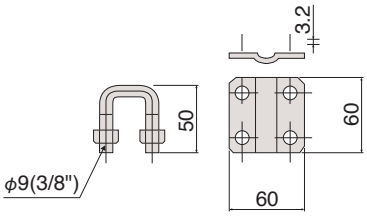
Element C

Cross-shaped grip 50 x 95

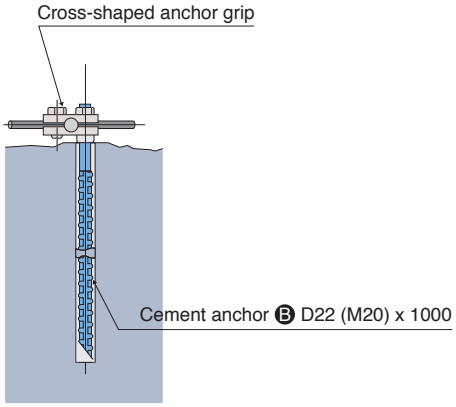


Element G

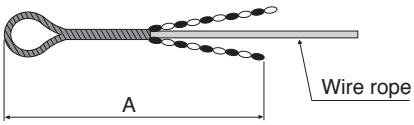
Cross clip 3.2 x 60 x 60



Element D



Ropegrip



Type	Wire rope diameter	A
For cement anchor Ⓐ	ϕ12	800
For pipe anchor Ⓐ	ϕ12	975
For strengthened wire rope	ϕ12	800

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