



Book-Pre Announcement

## TECCO® Slope Stabilization System and RUVOLUM® Dimensioning Method

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### BOOK DESCRIPTION

Flexible slope stabilization systems made from conventional wire meshes in combination with nails or nailing are widely used in practice to stabilize soil and rock slopes. They are traditional solutions and provide an alternative to measures based on rigid concrete liner walls, shotcrete applications or massive supporting structures.

Slope protection by means of common wire mesh and wire rope nets is known accordingly, but the transfer of forces by mesh as pure surface protection devices is limited on account of their tensile strength and above all also by the possible force transmission to the anchoring points (nails, anchors).

Strong wire rope nets offer certain possibilities for slope stabilizations with greater distances between nails and anchors. However, they are comparatively expensive in relation to the protected surface and the size of the individual nets is relatively small, resulting in higher installation cost and less flexibility to local terrain conditions.

Today, apart from solutions using conventional steel wire, new meshes from high tensile steel wire are now also available on the market. The latter can absorb substantially higher forces and transfer them onto the nailing.

A new special method has been developed for the designing of flexible slope stabilization systems with high tensile steel wire meshes for the use on steep slopes in more or less homogeneous soil or heavily weathered loosened rock.

### THE AUTHORS GROUP



Marek Cała is a professor of Geoengineering at the AGH University of Science & Technology, Cracow, Poland. He is an author of more than 100 papers and books dealing with problems of civil, mining and geotechnical engineering. His main research area covers application of numerical methods and computational techniques for solving practical geoengineering problems.



Since studying for Master of Science at the Department of Civil Engineering at the ETH Zurich until 1999, Daniel Flum gained a long standing experience in the area of stabilizing and protecting soil and rock slopes with flexible facings in combination with nailing and anchoring from all around the world. Since 2008, he is with the consultant company Rüeegger + Flum AG, Solutions in Geotechnical Engineering, St.Gallen, Switzerland.



Armin Roduner got his Master of Science in Civil Engineering at Universities in Switzerland and USA. Afterwards he worked in engineering offices in Switzerland in the field of slope stability, foundations, tunnel construction and water power projects. Since 2009 Armin Roduner is the head of geotechnical engineering at Geobrugg AG in Romanshorn, Switzerland responsible for all the slope stabilization projects worldwide.

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The interaction of mesh and fastening to nails has been investigated in comprehensive laboratory tests. This enabled also to find a suitable fastening spike plate which allows an optimal utilization of the strength of the mesh in tangential (slope-parallel) as well as in vertical direction (perpendicular to the slope).

The trials also confirmed that the high tensile wire meshes, in combination with suitable plates, enable substantial pretensioning of the system. Such pretensioning increases the efficiency of the protection system. This restricts deformations in the surface section of critical slopes which might otherwise cause slides and movements as a result of dilatation. Suitable dimensioning models permit to correctly dimension such systems.

Various implemented stabilizations in soil and rock, with and without vegetated face, confirm that these measures are suitable for practical application and provide useful information for the optimized handling and installation process.

Geotechnical, civil and mining engineers, geologists, professors and students, designers, public authorities as well as any decision takers will receive a detailed insight into the subject of slope stabilization with the new high tensile steel wire mesh and the new dimensioning method for flexible slope stabilization systems which allow simple and safe concepts including cost saving installation processes. This provides new interesting solutions for traditional geotechnical problems which, in the meantime, are executed and applied globally on all continents.

The hardbound book "TECCO® Slope Stabilization System and RUVOLUM® Dimensioning Method" with a content of 250 pages will appear toward the end of 2011. Book price EURO 49.–



Rudolf Rügger is working in the area of geotechnical engineering since 1973, has a lectureship at the ETH Zurich about „design and construction in the geotechnics“ and is director of the consultant company Rügger + Flum AG, Solutions in Geotechnical Engineering, St.Gallen, Switzerland. He was considerably involved in different federal as well as company based research projects mainly in the area of geosynthetics and slope stabilization. He has published dozens of papers and a couple of books.



After his study of Master of Science at the Department of Civil Engineering at the ETH University of Zurich, Dr. Stephan Wartmann lived and worked as a project manager in the USA and as general manager in Japan, before he took over the technical and R&D department at Geobruigg AG, Romanshorn, Switzerland. Since 2003, he is the CEO of Geobruigg Group with worldwide activities in more than 40 different countries.



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