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Safety is our nature



Flexible debris flow barriers

WORLDWIDE SUCCESSFULLY IN USE FOR OVER 10 YEARS

Ten years ago, Geobrugg AG introduced a new solution to protect against debris flows with flexible ring net barriers. More than 250 such debris flow barriers have been installed in more than 25 countries in the meantime and have often been able to protect infrastructures such as roads, railways or residential areas from significant damage.

The debris flow barriers made of high-tensile steel wire nets of the Swiss natural hazard specialists are now fully established as a certified European product (ETA and CE marking). This success story began between 2005 and 2008, when a research project proved the successful debris flow retention in large field tests.

The suitability of these nets for small volumes as well as for very large volumes with several nets in succession was proven. Among other things, a load approach was developed together with the WSL (Swiss Federal Institute for Forest, Snow and Landscape Research) and several standard systems defined, which can be measured using the freely accessible DEBFLOW software. This paved the way for the planning and execution of multilevel debris flow restraints.

A major advantage of the flexible Geobrugg debris flow barriers is their low weight and short installation time. This is important in steep, difficult terrain where access for large construction machinery would be uneconomical. The easy-to-install debris flow nets are therefore also well suited as an immediate measure. In such terrain, snow slides, small avalanches and, in some cases, rockfall are to be expected, which can hit the debris flow barriers.

Since there are also net barriers to protect against avalanches and rockfall, a combined load can be dimensioned to a certain degree. Debris flow protection nets instead of concrete barriers are also increasingly used due to their low visibility: Due to the filigree construction, these are hardly noticeable from afar. This can be decisive in tourist regions.

The versatile application possibilities in the form of single barriers, multilevel barriers and large barriers led to a better understanding of the advantages in a wide variety of application situations. And these have come to be appreciated by building owners in the 10 years since Geobrugg offered this solution.

Flexible ring net barriers have become a (cost-effective) alternative to conventional solutions all over the world. In the time since, the technology has become fully established and extends the options available to planners and engineers for designing the protection solutions against debris flows.



Multi-level debris flow barrier in Hasliberg/Switzerland



Special structure Hüpach/Switzerland with 40 m span and 10 m net height



Test in Illgraben/Switzerland, retention capacity approx. 1000 m³