GBE rockfall protection barriers from 100 to 3000 kJ

THE ECONOMICAL SOLUTION TO ROCKFALL
The danger of rockfalls is increasing due to climate change. This affects not only mountainous regions but also growing urban areas located close to rocky slopes. In order to provide the greatest possible safety at these locations, we have developed our GBE barriers using high-tensile steel wire mesh. Despite the possible high impact energies of up to 3000 kJ we are able to keep the anchoring forces very low thanks to our unique system design. This combined with an easy installation make the GBE series an extremely reliable and economical protection solution.
WE CAN PROVIDE YOU WITH THE COMPLETE SAFETY PACKAGE.

At your request we can take on the role of **consultant**, **planner** and even **project manager**. Both the solutions we offer and the quality of our customer service is valued by our customers. For us excellent service is an integral part of every single project. No matter which phase of the project you are in, we will provide you with the support and expertise required to achieve the best results – saving you both time and money.
LIGHT, ROBUST, QUICK INSTALLATION — THE ECONOMICAL SOLUTION.

Comparison of rockfall protection systems

Example: Components of the GBE-1000A barrier

Bar anchor with FLEX head
or spiral rope anchor
Base plate
U-brake
Retaining rope
Post
TECCO® mesh
Running wheel
QUALITY YOU CAN RELY ON.

Our **GBE series** is remarkable because of its cost efficiency while at the same time meeting the strictest safety standards. The **low weight and low anchoring forces** of this series enable a **quick and inexpensive installation**. Our meshes are made of high-tensile steel wire, ensuring the lowest weight-to-strength ratio to achieve high stability. This is why our systems are particularly unobtrusive in the landscape.

**GBE barriers provide the following features:**

- **High-tensile steel wire mesh**
  Protection against dynamic loads of up to 3000 kJ. Some of the energy is dissipated by means of elastic/plastic net deformation while the majority is dissipated by the braking elements.

- **Low anchoring forces**
  Short anchors are sufficient. This significantly lowers drilling time during installation and therefore the overall costs of the project.

- **Pre-assembled**
  The posts are delivered to the construction site as modules with pre-installed bundles of mesh. This significantly reduces the installation time as well as making the process easier.

- **High safety standards**
  Our barriers fulfill the ETAG-027 guidelines, mainly bear the CE mark, and are tested according to the most demanding method in vertical free fall.

- **U-brake with stainless steel**
  This component enables linear energy dissipation and is easily accessible for inspection and maintenance. Stainless steel makes the brake extremely durable even when subjected to strain.

- **Light and unobtrusive**
  The low weight of the barrier means that it can be easily installed. With its high-tensile steel wire and innovative design, this solution conserves materials, protects the environment and is virtually invisible from a distance.

- **First-class corrosion protection**
  The corrosion protection of our systems will last for generations. This means that our customers benefit from particularly low maintenance costs.
WE DON'T LEAVE SAFETY TO CHANCE.

All Geobrugg systems are developed in Romanshorn, Switzerland. They are tested under the supervision of and in cooperation with research institutes and certification bodies – using test facilities including the world’s first for the rockfall barrier approval tests. Our customers can be sure that GBE barriers meet the highest standards.

- **Tested the most demanding way: vertical, free fall**
- All energy categories for the GBE series are approved in accordance with European Directive **ETAG 027**
# TECHNICAL DATA:

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>GBE-100A-R ⁰</th>
<th>GBE-500A</th>
<th>GBE-500A-R ⁰</th>
<th>GBE-1000A</th>
<th>GBE-1000A-R ⁰</th>
<th>GBE-2000A</th>
<th>GBE-3000A</th>
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<tbody>
<tr>
<td>Energy category ¹ ETA</td>
<td>0 (100 kJ)</td>
<td>2 (500 kJ)</td>
<td>2 (500 kJ)</td>
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<td>5 (2000 kJ)</td>
<td>6 (3000 kJ)</td>
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<td>Approval no. ETA ²</td>
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<td>ETA-09/0085</td>
<td>ETA-11/0034</td>
<td>ETA-09/0262</td>
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<td>SPIDER® spiral wire net</td>
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<td>-</td>
<td>-</td>
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<td>Spiral wire rope Ø</td>
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<td>TECCO® G80/4</td>
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<td>Post spacing</td>
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<td>Rope Ø min./max.</td>
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<td>14/18 mm</td>
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<td>– 100 running meters</td>
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<td>3/4/5 m</td>
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<td>&gt; 50% (Cat. A)</td>
<td>&gt; 50% (Cat. A)</td>
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<td>&gt; 50% (Cat. A)</td>
<td>&gt; 50% (Cat. A)</td>
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<td>impact zone ¹</td>
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¹According to ETAG 027 | ²See ETAssessment/ETApprovals at [http://www.eota.eu](http://www.eota.eu) | ³According to the Swiss directive | ⁴RIGID – without retaining ropes

We reserve the right to make technical changes.

More information is available on our website: [http://www.geobrugg.com/rockfall](http://www.geobrugg.com/rockfall)