

Rockfall protection



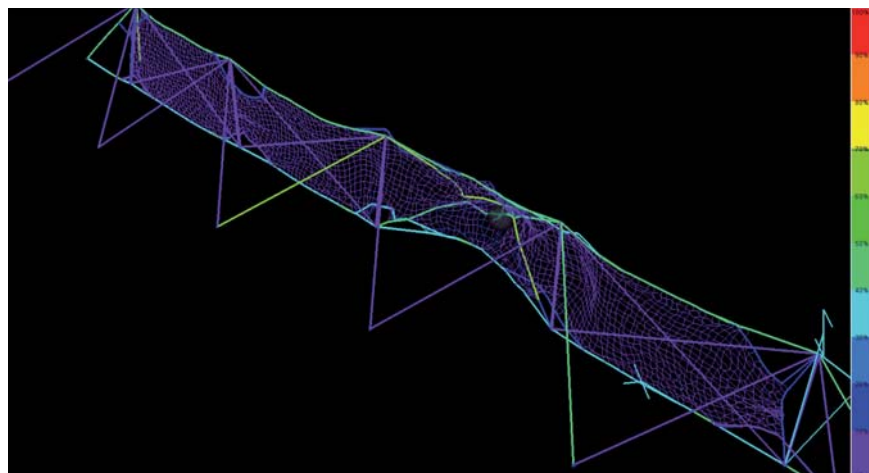
**Low-deflection barrier "Bubichopf gallery"
BLS Goppenstein–Brig line / Switzerland**

Rockfall protection Low-deflection barrier "Bubichopf gallery"

Project:	Bubichopf gallery, BLS Goppenstein–Brig line / Switzerland
System:	RXI rockfall protection systems with modification to special requirements
Barrier length:	42.5 m
Barrier height:	4.0 m
Distance between posts:	8.5 m
Planning:	Ing.büro Reinhold Bumann GmbH, Naters (Canton of Valais)
Client:	BLS, Bern-Lötschberg-Simplon Bahn AG
Installation period:	June/July 2010
Description of the problem:	<ul style="list-style-type: none">- Reducing the rockfall deficit- Expanding, reinforcing and protecting the existing gallery- Extending the existing protective measure using a rockfall protection barrier
Special requirements:	<ul style="list-style-type: none">- Maximum event 500 kJ (1,600 kg with $v=25$ m/s)- After a 500 kJ impact max. net deflection of 2 m at the center allowed- Structure gauge for rail line- Catenary supports on-site

In compliance with all the requirements, an RXI-100 rockfall protection barrier was installed, measuring 42.5 meters long by 4 meters high and with a distance of 8.5 meters between the posts. The maximum permitted barrier deflection after a 500 kJ event was verified and validated using FARO software. To guarantee compliance with a maximum net deflection of 2 m after a maximum rockfall event of 500 kJ, two additional GEOBINEX retaining ropes with brake rings were installed diagonally on each section of net. The special additional retaining ropes were affixed to separate anchors.

*FARO simulation: load on the system
with an impact of 70% of the maximum*





Rockface with breakout zone above the Bubichopf gallery



RXI-100 rockfall protection barrier with ring net and secondary mesh.

Ring net field reinforced with diagonally crossing GEOBINEX retaining ropes



The RXI-100 rockfall protection barrier serves both to protect the gallery and to extend it to protect the rail line



Rockfall barriers

Rockfall drapes

Slope stabilization systems

Debris flow barriers

Avalanche prevention structures

Open pit rockfall barriers

Special applications

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It is the task of our engineers and partners to analyze the problem together with you in detail and then, together with local consultants, to present solutions. Painstaking planning is not the only thing you can expect from us, however; since we have our own production plants on three continents, we can offer not only short delivery paths and times, but also optimal local customer service. With a view towards a trouble-free execution, we deliver preassembled and clearly identified system components right to the construction site. There we provide support, if desired, including technical support – from installation right on up until acceptance of the structure.



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