



OBRE BIEL, MATTERHORN GOTTHARD BAHN, SWITZERLAND

Rockfall Protection

Obre Biel, Matterhorn Gotthard Bahn

Rockfall Protection

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| Project | Obre Biel, Matterhorn Gotthard Bahn |
| Location | Zermatt |
| Country | Switzerland |
| Year of installation | 2016 |
| Customer | Matterhorn Gotthard Bahn (MGB) |
| Engineering Contractor | geoformer igp AG (wasser/schnee/lawinen - André Burkard AG) ABA Bautech AG |
| Initial situation | The railway line Matterhorn Gotthard has a section called Obre-Biel that is being used by as many as ten passenger trains per hour, along with cargo trains. Over the years, this section of the railway has been inundated by snow slides and smaller avalanches. Consequently, railway traffic has been severely impaired and has also created the danger of possible rail derailment. The line was also endangered by rockfalls. |
| Description | <p>The solution shall protect the railway line against snow slides, snow avalanches and rockfalls. Choosing flexible rockfall barriers will decrease the amount of traffic disturbances.</p> <p>Standard rockfall barriers are designed to deal with loads caused by rockfalls. So, to serve as a multi-hazard protection system, some special dimensioning has to be implemented.</p> <p>Such special dimensioning is not possible without involving computer simulations. For this purpose, Geobrugg uses finite element simulation software called FARO. FARO was originally developed by the Swiss Federal Institute for Forest, Snow and Landscape Research, and WSL, in order to simulate rockfall barriers with ring nets.</p> <p>Further software development financed by the Commission for Technology and Innovation CTI allows surface load simulations caused by debris flows, shallow landslides and avalanches.</p> <p>By using FARO software, a total of 182 meters of rockfall barriers were correctly dimensioned to protect the railway line. They were finally divided into three lines of 112, 42 and 28 meters.</p> |
| Protected object | Railway |
| Corrosion protection | Galvanized, GEOBRUGG SUPERCOATING |
| Energy absorption capacity | 1000 kJ |
| System height | 5.0 m |
| System length | 28 m - 112 m |

For questions please contact our Geobrugg specialist at your side

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