CONSTRUCK SLOPE ROCK BARRIER

Flexible High-Energy Rockfall Interception System



CST-RBR-BRO-00018

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CONSTRUCK SYSTEMS & TECHNOLOGY

Research and Development | Design | Manufacturing | Geotechnics

Rockfall hazards are dynamic. A falling block does not only need to be stopped — its energy, bounce height, trajectory, and final catchment behavior must all be managed.

ConstruckSlope RockBarrier is a flexible, high-energy rockfall interception system designed for exposed slopes and infrastructure corridors. The system combines high-tensile steel mesh or ring nets, energy-dissipating brake elements, steel posts, support ropes, and deep anchorage to catch falling rock before it reaches the protected zone.



Unlike rigid protection systems, RockBarrier works by controlled deformation. The net intercepts the block, brake elements absorb energy, ropes distribute the load, and the anchors transfer forces safely into the ground.

High-energy rockfall control

Designed to stop falling blocks before they reach roads, railways, structures, or active work zones.

Energy brake technology

Brake elements reduce peak force in the ropes and anchors by allowing controlled elongation during impact.

Full rope-load distribution

Top, bottom, horizontal, vertical, lateral, and upslope retaining ropes work together to distribute impact forces.

SPaaP® — Slope Protection as a Product

A matched, factory-specified rockfall protection kit for predictable performance, clear installation logic, and repeatable site quality.

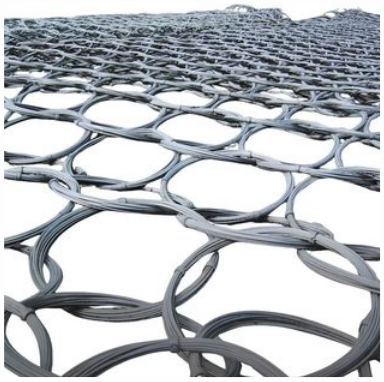
Where it is used

- Mountain roads and highway corridors.
- Railway cuttings and portal approaches.
- Mining and quarry access roads.
- Industrial facilities below rock slopes.
- Coastal and wadi corridors exposed to falling rock.
- Oil, gas, power, and utility corridors.
- Temporary and permanent construction protection zones.

What problems it solves

- Rockfall reaching roads, railways, and work areas.
- High-energy boulder impact where catch ditches are not enough.
- Limited right-of-way where wide catchment zones cannot be formed.
- Repeated debris fall causing road closures and safety risks.
- Difficult mountain terrain where rigid concrete barriers are impractical.
- Uncontrolled rockfall hazards above live infrastructure.

System, Components & Benefits



ConstruckNet / Ring Net



Rock bolts (3–6 m) with eye nuts



Wire Rope



Secondary Mesh & Accessories



ConstruckBrake Energy Dissipators



ConstruckBarrier Posts & Base Plates

Benefits at a glance

High-energy protection

Designed for rockfall impact classes up to project-specific high-energy requirements.

Flexible load absorption

Deforms under impact instead of cracking or shattering.

Controlled force path

Net, ropes, brakes, posts, and anchors work together to distribute loads.

Fast modular installation

Kit-based system reduces fabrication work and improves site control.

Low footprint

Suitable for narrow road and railway corridors where excavation is limited.

Maintenance-friendly

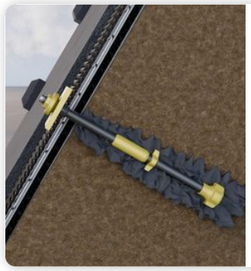
Impacted panels, brakes, ropes, or local components can be inspected and replaced.

More than just Rockfall Protection— A SPaaP® Specialty Fully Loaded with Engineering Features



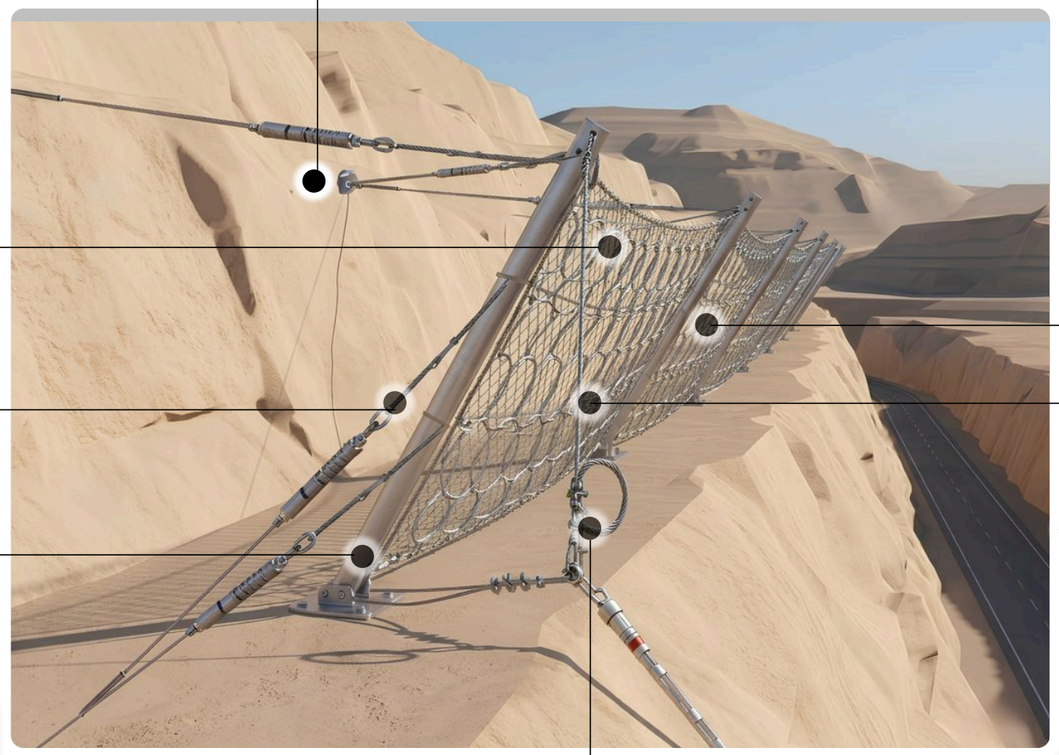
High-Energy Interception Net

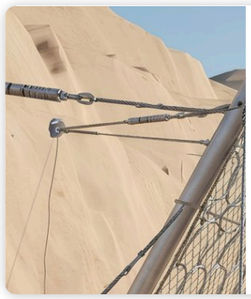
The RockBarrier's high-tensile mesh or ring-net acts as the first line of defense against falling rock. It captures moving blocks before they reach the road, while its flexible geometry allows controlled deformation instead of brittle failure—helping absorb impact and retain debris safely inside the barrier line.



Deep Anchors and Micropiles

The foundation is designed separately for each site. Rock anchors, soil nails, ground anchors, or micropiles transfer impact loads into stable ground and are sized based on the expected foundation actions.





Support Rope Load Network

Upper, lower, lateral, and upslope ropes create the structural load path. They connect the net to posts and anchors, helping the system work as one continuous energy-distribution structure.



Secondary Mesh for Small Debris

Where required, a finer secondary mesh is installed behind or in front of the main net to retain smaller falling fragments while the main net handles large-block impact.



Corrosion-Smart System

Every component of the RockBarrier system is selected with corrosion durability in mind. Components can be supplied with galvanized, Zn-Al coated, polymer-coated, or stainless options depending on project exposure—supporting long-term performance in arid, coastal, marine, and high-UV environments.



Steel Posts and Anchor Foundations

Each post is connected to the ground through a base plate and engineered foundation. This connection transfers compression, shear, and rotation forces from the post into rock, concrete, or ground support, ensuring the barrier remains stable under impact.



Energy Dissipation Brakes

Brake elements are the controlled-energy core of the RockBarrier system. Under high impact, they deform or elongate in a predictable way, reducing force peaks in the ropes, anchors, and posts and allowing the barrier to manage high-energy events without sudden overload.





Performance, SPaaP & Spec Snapshot

How high-strength barriers change rockfall risk management

Intercept + Absorb + Hold

RockBarrier catches the falling rock, absorbs impact energy through net deformation and brakes, and holds the debris before it reaches the protected zone.

Designed for Real Rockfall Behavior

The system is designed around slope geometry, bounce height, impact energy, trajectory modeling, available clearance, and maintenance access.

Straight-from-factory quality

Matched system components, controlled accessories, defined installation procedures, and traceable QA make the system easier to approve, inspect, and maintain.

SPaaP — Slope Protection as a Product

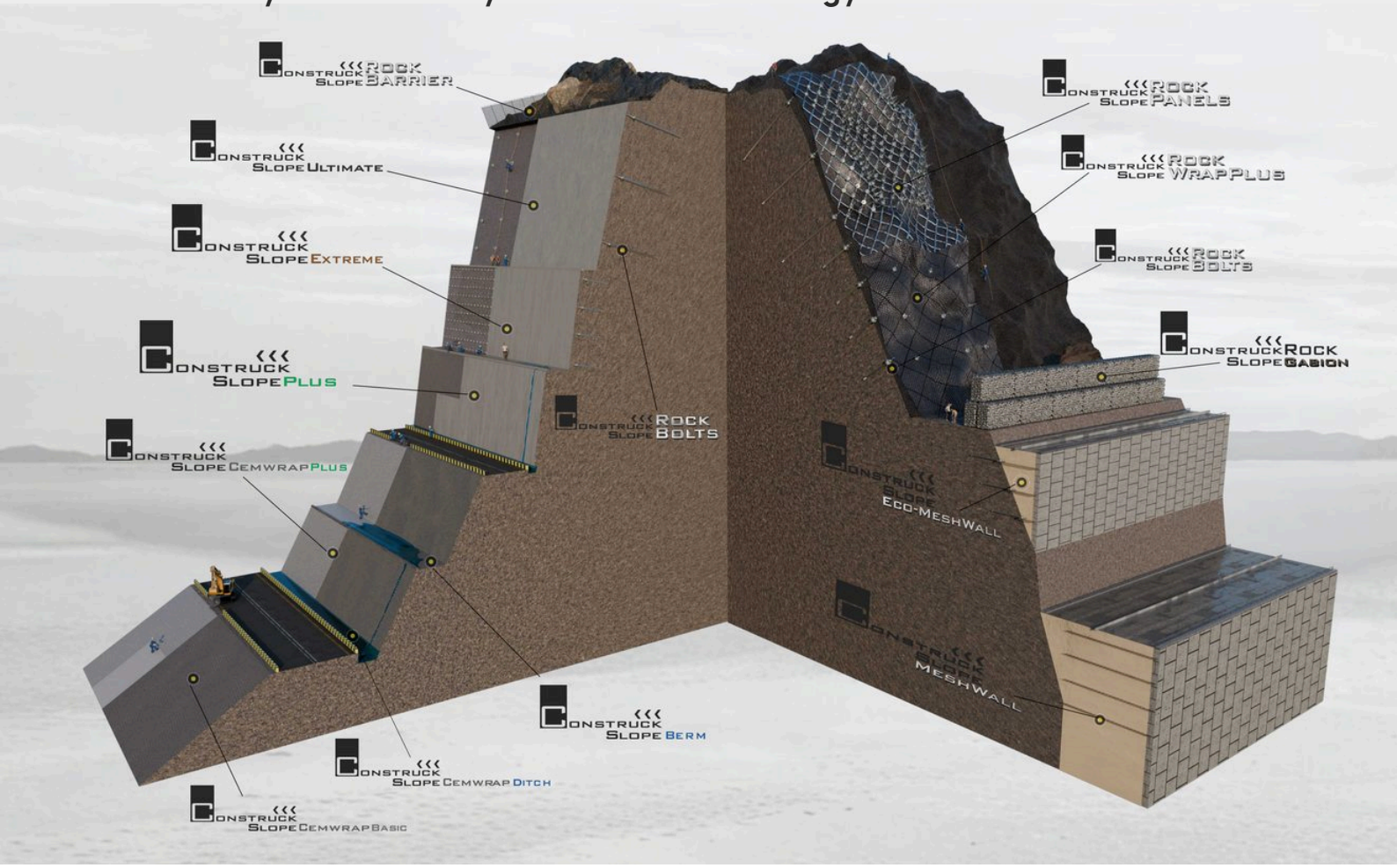
- One matched kit, one trained crew, one performance path.
- Project-specific engineering based on energy class, height, site geometry, and anchor loads.
- Faster programs with fewer trades and lighter logistics than rigid wall or heavy concrete options.
- Clear maintenance approach after impact events.

Advantages

- **Engineered energy management:** RockBarrier is designed around impact energy, not only visual coverage.
- Complete load path: The system transfers force through net, ropes, brakes, posts, foundations, and anchors.
- **Reduced peak loads:** Brake elements help control sudden force spikes during impact.
- **Flexible performance:** The system deforms under impact instead of cracking, breaking, or behaving like a rigid wall.
- **High protection with limited footprint:** Ideal for roads and railways where there is not enough space for large catch ditches.
- **Suitable for harsh terrain:** Designed for mountain roads, desert slopes, coastal rock cuts, and hard-to-access corridors.
- **Corrosion-smart durability:** Galvanized and coated steel options support long-term use in hot, coastal, marine, or arid environments.



The Widest Range of SPaaP® in the World, Powered by Construck Systems and Technology.



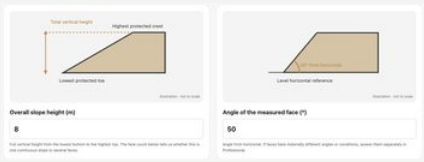
Digital support

Better decisions. A stronger project.

Explore the options, strengthen the technical basis and connect the people, information and delivery behind your Construck system.

Construck Calc

Understand the ground.
Build the technical case.



Actual Quick Check interface / sample geometry.

Quick Check
A free first step into relevant systems, preliminary quantities and indicative cost.

Professional
Bring surveys, ground conditions and existing studies into a project-specific assessment.

A further stability study
A project-specific stability study is included for each slope we take forward for protection.

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ProjectSuite

One connected platform.
Support from start to finish.



Actual development workspace / sample records.

Manufacturer expertise, local support
Connect technical teams and authorised local partners around the selected Construck system.

Supply and construction, coordinated
Keep technical preparation, material supply and installation quality in the same workflow.

Sustainability and handover
Relate environmental estimates to project quantities and retain useful information for the asset.

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Quick Check is preliminary guidance. Professional assessment and support follow the agreed scope and required approvals.













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