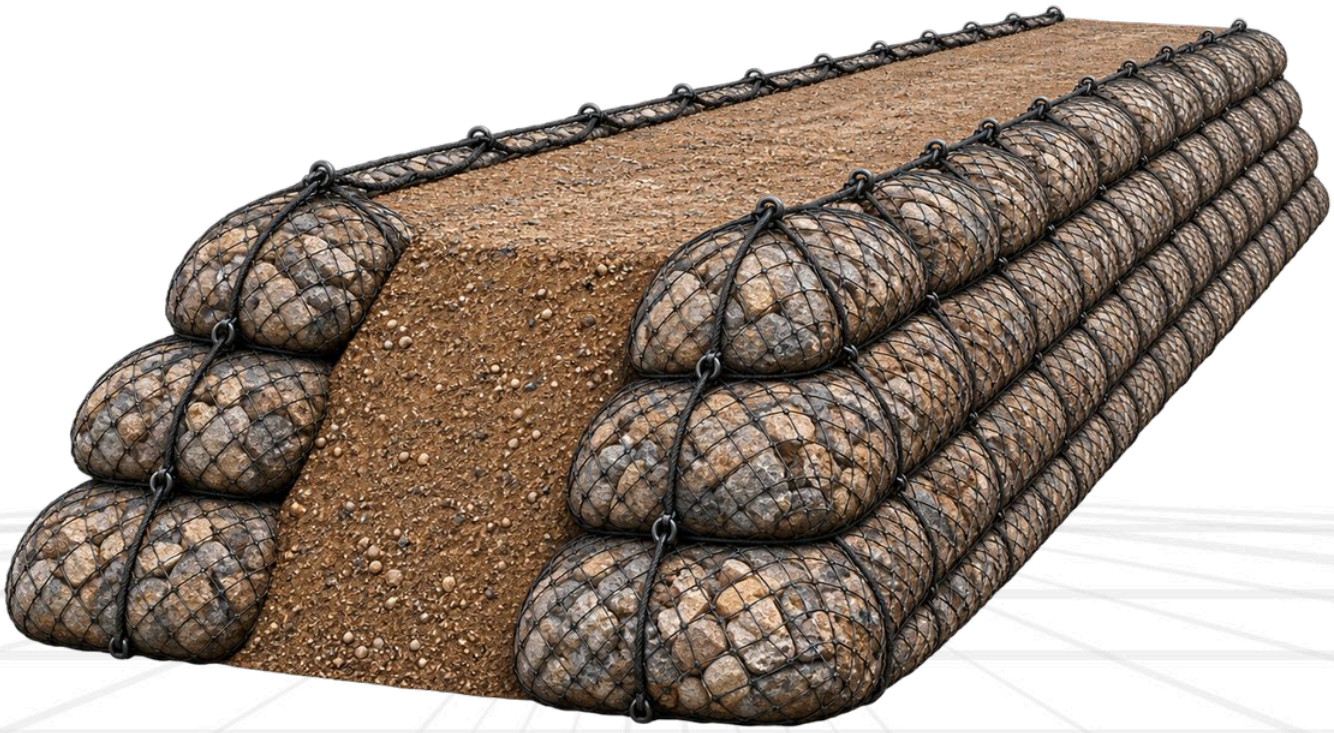
CONSTRUCK
SLOPEFLEXGABION

Flexible Rock-Filled Containment System for Extreme Geohazard Defense



CST-FGB-BRO-00020

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Large rockfall hazards demand more than interception alone. They require a protection structure designed around the size, energy and travel path of the falling rock.



FlexGabion® combines selected rock fill with flexible, high-strength polymer rope-net containment to form defined protection units. Arranged into engineered berms, catch zones and slope-toe structures, these units bring **mass, friction, confinement and deformation** together to resist impact and retain debris.

Its flexible form allows the contained rock to adjust under loading. The protection strategy uses the movement and interaction of the rock fill within a confined structure, giving engineers another approach for demanding geohazard sites.

Mass that works for protection

Contained rock mass forms the body of the protection structure. Its dimensions and arrangement are engineered around the hazard and the space available.

Strong polymer containment

High-strength polymer rope-net containment holds selected rock together in modular units, supporting controlled placement and repeatable construction.

Non-corrosive exposed system

Unlike steel gabion baskets, the polymer containment is not dependent on galvanizing for corrosion resistance, making it suitable for harsh exposed environments.

SPaaP® — Slope Protection as a Product

Not loose riprap. Not an ordinary gabion. FlexGabion® turns rock mass into defined, liftable, placeable, and repeatable geohazard protection units.

Where it is used

- **Rockfall impact berms** positioned between the hazard and the infrastructure being protected.
- **Catch zones** designed to intercept and retain falling rock and debris.
- **Slope-toe protection** along roads, railways, utilities and other exposed assets.
- **Mountain and quarry corridors** where large blocks require a mass-based protection strategy.
- **Hybrid protection arrangements** combining FlexGabion® with RockBarrier where the site assessment supports complementary protection.

What problems it solves

Create a substantial protection structure
Use contained rock mass where hazard assessment calls for a berm or catch structure.

Control the geometry of rock-filled protection
Defined units help establish the intended arrangement, dimensions and construction sequence.

Move preparation to an accessible area
Where an engineered lifting procedure permits, units can be filled away from the final position and mechanically placed.

Adapt protection to the site
Unit arrangement allows the structure to be configured around terrain, access and available space.

System, Components & Benefits

Rock provides the mass.

Engineering makes it a system.

FlexGabion® brings containment, fill and handling components together in a defined protection unit. The performance of the installed structure depends on how these units are filled, connected, arranged and supported.



High-strength polymer rope-net containment



Selected rock / boulder fill



Lifting, lacing and connection accessories

Benefits at a glance

Protection built around the hazard

Structure dimensions and unit arrangement can be developed around the expected block size, impact conditions and debris path.

Non-corrosive containment

Polymer rope-net containment avoids the main corrosion weakness of exposed steel gabion baskets.

Liftable rock mass

Units can be filled in a safer accessible area, lifted, transported, and positioned where needed.

Flexible and interlocking

The unit follows the rock shape, creating rough surfaces that can improve contact and interlocking between layers.

Low footprint

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

Gravity-based resistance

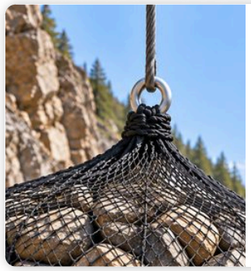
Protection comes from mass, width, friction, confinement, and deformation — not only from a net or fence.

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



Non-Corrosive Containment Architecture

The flexible gabion mesh system uses polymer-based rope and net components, reducing dependence on metallic corrosion protection. This is a major advantage in harsh, wet, coastal, arid, and chemically aggressive environments.



Certified Lifting Point

A dedicated lifting ring allows filled units to be handled mechanically and placed accurately. This supports faster installation in difficult terrain where assembling and filling conventional gabions at the final location may be unsafe or inefficient.





High-Strength Polymer Containment

The FlexGabion® body wraps around selected rock fill instead of forcing it into a rigid steel basket. This creates a durable, flexible containment unit that can deform under load while keeping the rock mass controlled.



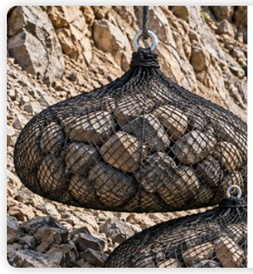
Flexible Interlocking Geometry

Because the flexible body follows the rock shape, the outer surface remains rough rather than perfectly box-like. This irregular geometry can help stacked units grip each other and act together as a heavier mass system.



Structural Reinforcing Cable System

The cable system is the backbone of the FlexGabion® unit. It provides the strength needed for lifting, handling, containment, and deformation control, ensuring the product is not just a polymer net but a load-carrying geohazard component.



Controlled Placement in Difficult Terrain

Filled units can be prepared away from the most dangerous area and placed by suitable equipment. This makes the system practical for steep corridors, limited-access sites, and high-risk geohazard zones.



Selected Rock-Fill Mass

The stone infill provides the main resistance mechanism: weight, internal friction, rough contact, and impact absorption. During impact, the rock mass can shift, settle, interlock, and dissipate energy inside the flexible containment.





Performance, SPaaP & Spec Snapshot

How FlexGabion® changes extreme geohazard protection

Mass + Confinement + Deformation

FlexGabion® is designed around a simple engineering logic: selected rock provides mass, polymer rope-net containment holds the rock together, and the flexible form allows controlled deformation under impact.

Beyond conventional barriers

FlexGabion® is being developed for that space: productized, modular, rock-filled mass protection for extreme geohazard zones.

Straight-from-factory quality

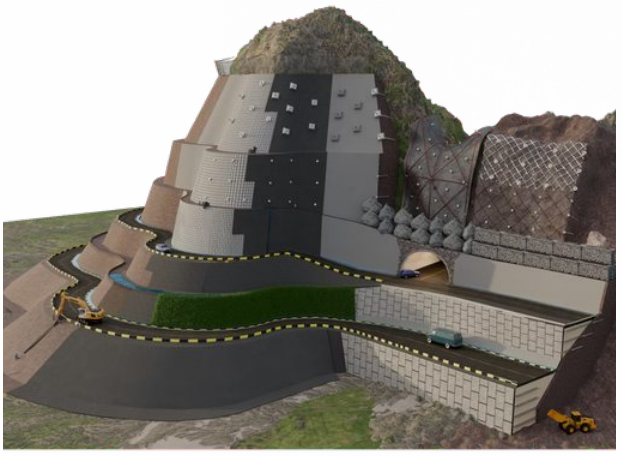
Matched system components, controlled accessories, defined installation procedures, and traceable QA make the system easier to approve, inspect, and maintain.

SPaaP — Slope Protection as a Product

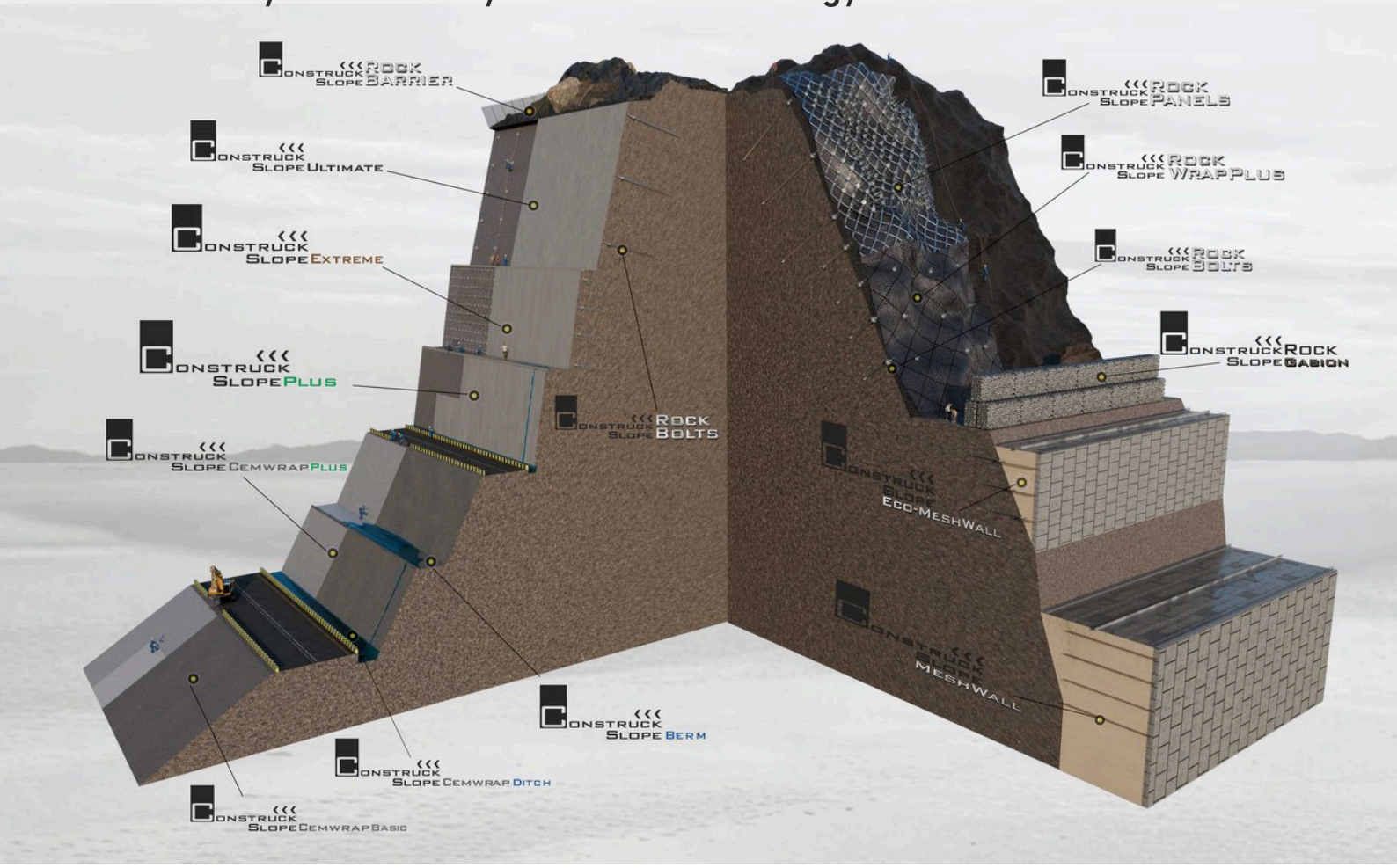
- One matched kit, one trained crew, one performance path.
- Project-specific engineering based on energy class, height, site geometry, and anchor loads.
- Faster programs with fewer trades and lighter logistics than rigid wall or heavy concrete options.
- Clear maintenance approach after impact events.

Advantages

- **Mass-based impact protection:** Contained rock mass provides a substantial protective body, with structure dimensions engineered around the expected hazard.
- **Flexible impact response:** The containment allows the rock fill to adjust under loading, enabling deformation and friction to contribute to energy dissipation.
- **Defined, modular construction:** Rock-filled units help crews build the specified protection geometry through a planned, repeatable placement sequence.
- **Fill where access is better:** Units can be prepared in an accessible working area and mechanically positioned using an approved lifting arrangement.
- **Contact that contributes to stability:** Flexible units conform to their rock fill, creating irregular surfaces that support friction and interlocking between adjoining units.
- **Corrosion-resistant polymer containment:** The polymer rope-net body avoids the rusting associated with steel containment, while cables and accessories are specified for the exposure conditions.



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



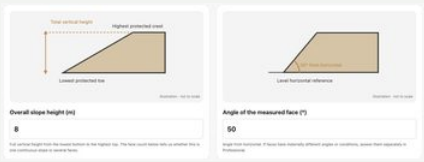
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Construck Calc

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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