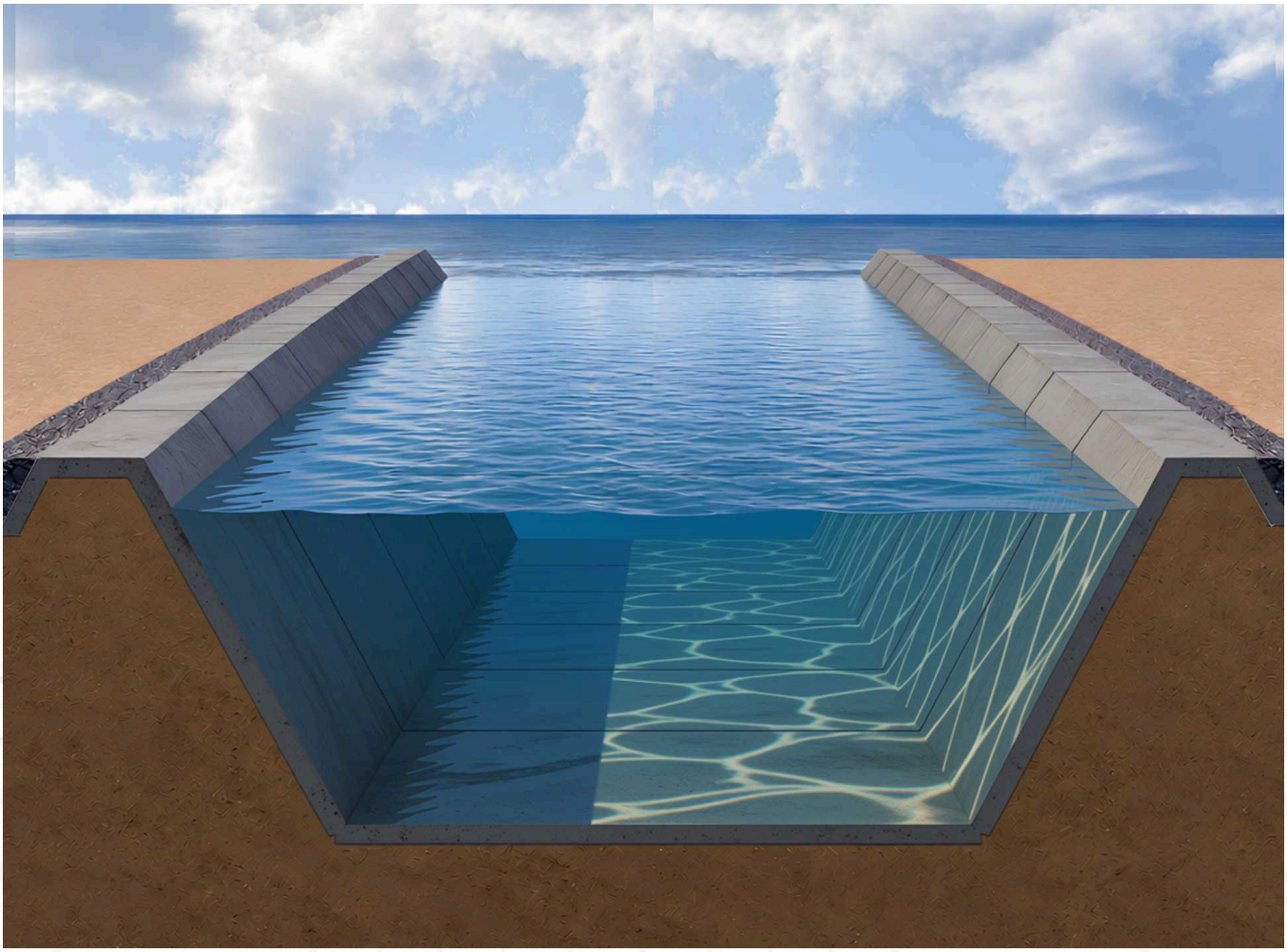
CONSTRUCK

SLOPE CEMWRAPCANAL

Heavy-Duty Reinforced GCCM for Demanding Hydraulic Infrastructure



CST-CWC-BRO-00008

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Engineered for Demanding Canal Environments

ConstruckSlope® CemWrap Canal is developed for large canals and demanding hydraulic infrastructure. At its core is **CemWrap 80** — an approximately **30 mm** heavy-duty reinforced GCCM combining a substantial cementitious body with high-capacity flat 2-D geogrid reinforcement. Around it, engineered trench anchorage, canal joints, fixing/restraint details, optional drainage and defined installation requirements create one engineered protection system.



A canal lining must do more than cover the surface. It must remain connected, anchored and controlled under hydraulic and mechanical demand.

What makes CemWrap Canal different

- **Heavy-duty CemWrap 80** — ~30 mm nominal reinforced GCCM for major hydraulic applications.
- **Stronger integrated flat 2-D geogrid** — dedicated tensile load path; high resistance at low elongation.
- **Trench interlock** — the lining locks mechanically into the trench delivering reliable anchorage under hydraulic load
- **Canal-specific jointing** — broad-area reinforced connections distribute force between panels instead of isolated point fasteners.
- **Optional drainage integration** where subgrade/pore pressure requires relief.
- **SPaaP® delivery** — product, anchorage, joints, restraint and installation method engineered together.

Where it is used

- **Large irrigation canals and water-conveyance channels** — serving agriculture, water authorities and bulk water transfer.
- **Flood-control channels and stormwater infrastructure** — where high-velocity surges demand reliable, durable lining.
- **Hydropower intake and tailrace channels** — sustained high-flow conditions requiring structural integrity.
- **Industrial waterways and process water channels** — canal beds and side slopes in abrasive or chemically aggressive environments.
- **Canal rehabilitation and relining projects** — replacing or encapsulating deteriorated concrete, earthen or membrane linings.
- **Sediment-heavy and high-velocity flow environments** — where conventional linings abrade and degrade rapidly.

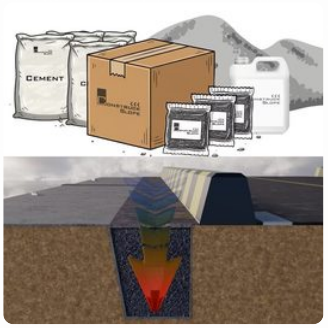
What problems it solves

- **Erosion and scour undermining beds and slopes** — sustained hydraulic load progressively destroys unprotected or weakly lined canals.
- **High cost and complexity of cast-in-place concrete** — formwork, curing time, skilled labour and extended programme durations make conventional lining slow, expensive and highly sensitive to access constraints and weather.
- **Difficult access on remote or large-scale projects** — lightweight rollable panels reduce logistics burden and enable rapid installation in constrained sites.
- **High embodied carbon and sustainability conflict** — large volumes of cast concrete carry significant embodied carbon; cement-intensive methods conflict with project ESG commitments and make it difficult to meet modern environmental reporting requirements.

System, Components & Benefits



Construck® CemWrap 80



ConstruckScreed and Trench-Lock System



Canal Joint & Fixing System



Optional ConstruckDrain

With SPaaP®, crews install a **pre-engineered hydraulic protection system**—not a collection of independent materials. The lining, anchorage, joints, restraint and drainage are coordinated around the project conditions.

How the system works

- **Reinforced surface protection:** hydrated CemWrap 80 forms the hardened protective body while the integrated geogrid carries tensile demand.
- **Distributed trench anchorage**: aperture-aligned openings allow a broad mechanical locking element to engage the reinforced CemWrap edge without cutting the geogrid ribs, distributing anchorage forces over a wider area and creating a more secure connection to the anchor trench.
- **Connected canal joints**: engineered joint details connect adjoining CemWrap panels through the reinforced edge, helping maintain lining continuity and distribute forces across the connection zone.
- **Controlled boundary restraint:** crest, toe and transition details secure critical edges.
- **Drainage where required:** ConstruckDrain manages water pressure behind the lining.

Benefits of the system

Heavy-Duty GCCM Configuration

CemWrap 80 delivers ~30 mm nominal protective thickness with a high-capacity integrated geogrid — engineered to withstand the sustained hydraulic loads, abrasion and scour demands of major irrigation, flood-control and hydropower canals where lighter GCCMs are insufficient.

Anchored Through the Reinforcement

Engineered mechanical lock engages and secures CemWrap within the anchor trench, creating mechanical interlock that anchors the GCCM under sustained hydraulic load.

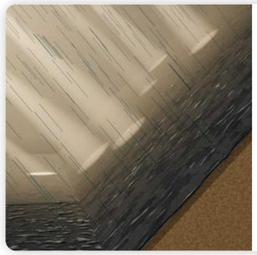
Distributed Load Transfer

By spreading anchorage and joint forces across a broader reinforced edge — rather than concentrating them at isolated fixings — CemWrap Canal reduces the risk of localised failure at connections, delivering a more reliable lining under variable hydraulic loading and ground movement.

Straight-from-Factory Engineering

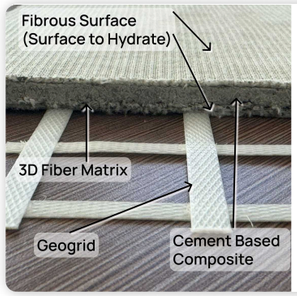
Defined product architecture, components and installation details support consistent specification, installation and QA/QC.

More than just Erosion Control - A SPaaP Specialty, Fully Loaded with Engineering Features



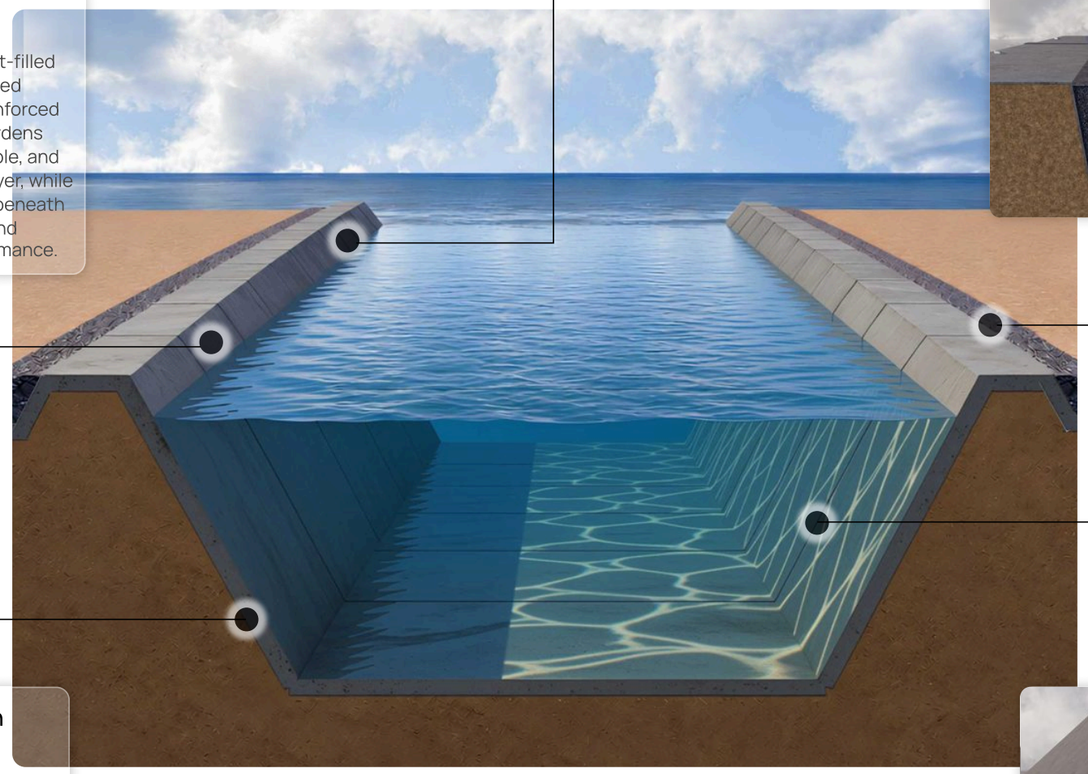
UV & Erosion Protection

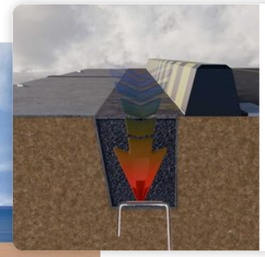
The CemWrap's hardened cementitious shell acts as a protective barrier against UV exposure and rainfall, shielding the slope from surface erosion, cracking, and long-term degradation—even under harsh environmental conditions.



CemWrap®

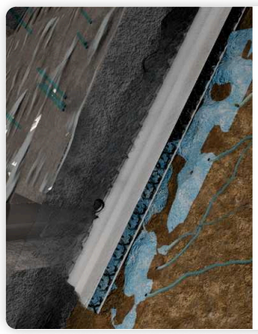
CemWrap® combines a cement-filled fabric (GCCM) with an integrated geogrid to deliver efficient, reinforced erosion control. The GCCM hardens with water to form a thin, durable, and weather-resistant concrete layer, while the geogrid stabilizes the soil beneath—improving load distribution and enhancing overall slope performance.





Reinforced Top Anchorage

At the crest, Trench-Lock anchors CemWrap® through its geogrid without cutting the ribs. Loads spread across the reinforced edge, reducing localised failure risk under hydraulic demand.



Internal and External Erosion Control

External erosion is prevented by a durable and weather-resistant hardened cementitious shell. Internal erosion is controlled by a PVC backing layer (optional based on hydraulic conditions) offering resistance to UV, water, and chemical exposure, ensuring long-term durability in challenging environments such as high moisture levels or chemical exposure.



CemWrap Joint (Overlap Zone)

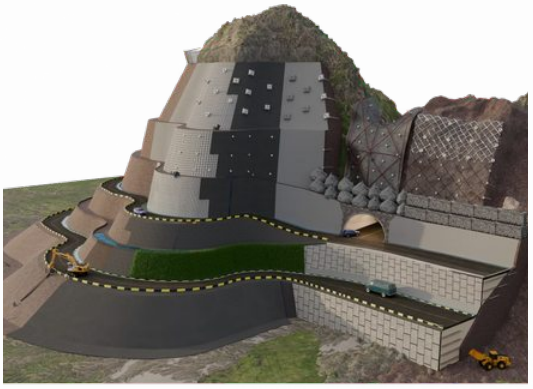
Where two CemWrap® panels meet, they are overlapped and mechanically fastened or sealed, creating a reinforced joint that prevents water ingress, lifting, or separation. The geogrid spans beneath, maintaining load transfer and full-surface bonding.



SPaaP® & Construck Project Suite

SPaaP® — Slope Protection as a Product, Delivered Through ConstruckSlope® CemWrap Canal

- One integrated canal lining system: CemWrap 80, ConstruckScreed Trench-Lock, Canal Joint & Fixing System, and optional ConstruckDrain — matched and pre-engineered for hydraulic canal environments.
- Project-specific configuration based on canal geometry, flow velocity, subgrade conditions, and hydraulic load requirements.
- Faster installation than cast-in-place concrete lining — lightweight rollable panels, fewer trades, reduced formwork and curing time.
- Defined installation sequence with clear component requirements from specification through to site QA/QC.



Engineered systems. Supported through delivery.

Choosing Construck gives your project more than an engineered product. **Construck Project Suite comes with our systems**, connecting product information, installation workflows and quality records in one digital platform.

Your project team and Construck delivery partners have a shared basis for understanding the system, preparing the installation and documenting the completed work—creating a clearer connection between **what is specified, what is installed and what is verified.**

Current information. Fewer version gaps.
Centrally updated product documents, installation methods and visual guidance help teams work from consistent information throughout delivery.

Clearer installation control.
Connected system requirements, drawings and site workflows help teams prepare the work and follow the specified installation method.

Quality you can review.
Site photographs, measurements, tests and inspection records bring supporting evidence together, making completed work easier for clients and consultants to review.

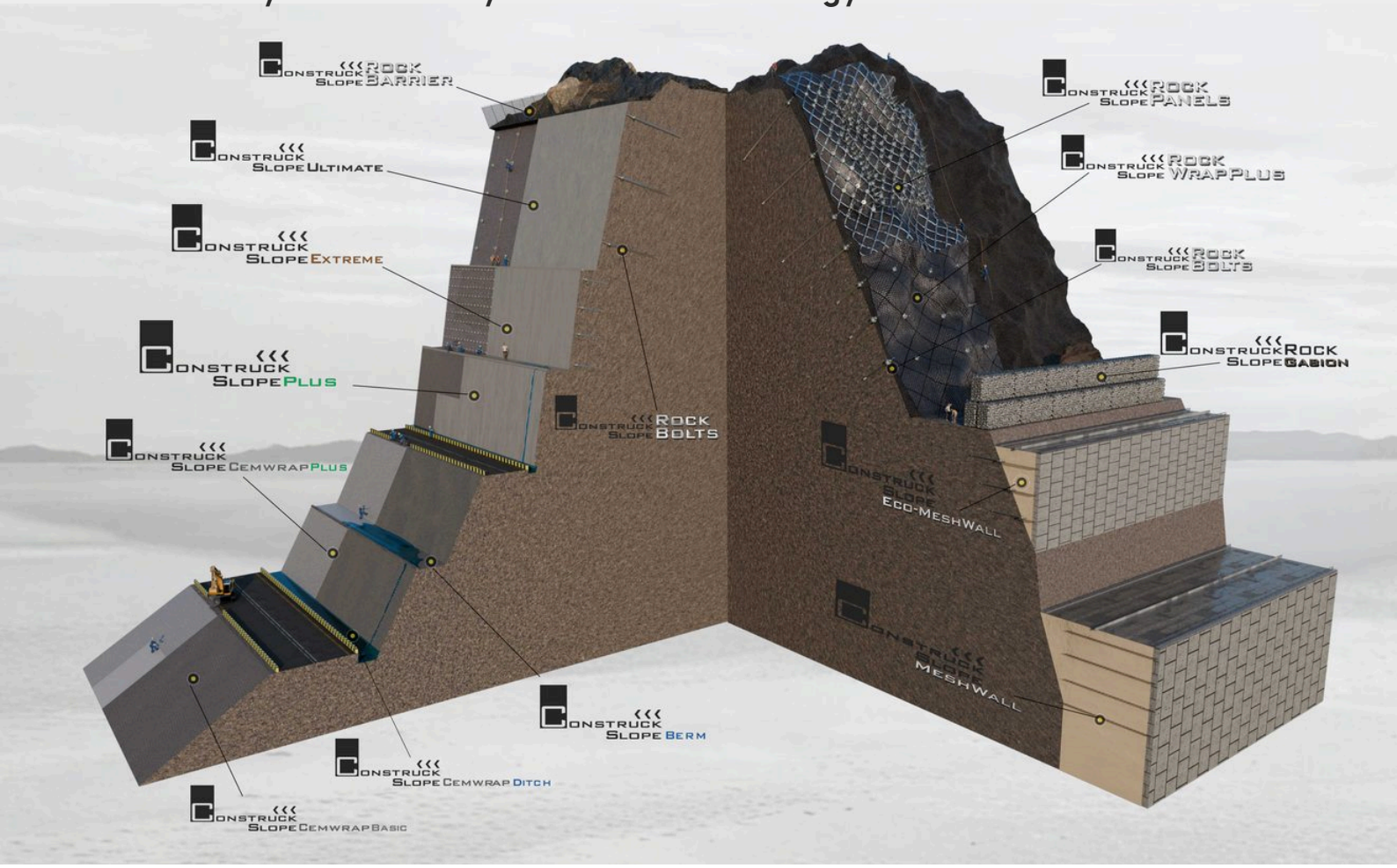


Progress you can follow.
Organized quantities, progress and approvals support clearer project updates and a more complete record at handover.

Construck Project Suite

Part of the product offering. Part of better project delivery.

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



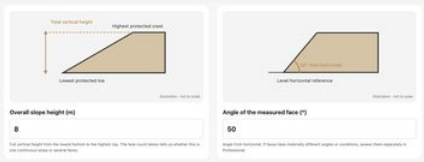
Digital support

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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