



PRE-FILLED ROCK ROLLS

Product Brochure

A robust and permanent revetment for use around reservoirs, shorelines, lake edges, streams and river banks.

www.salixrw.com

Salix



Pre-filled Rock Rolls

Salix rock rolls provide robust and permanent erosion protection for use around reservoirs, shorelines, lakes, streams and riverbanks. They are a cost-effective and environmentally sensitive revetment that can provide an alternative to rock armour, concrete and gabions.

Rock rolls are a tubular unit, typically 2 m in length with a diameter of 0.25 m, 0.3 m and 0.4m (1.6m length).

They are more suited as linear toe protection or when used in front of coir rolls in higher energy situations to provide protection. They can also be stacked vertically and are flexible so can conform to difficult geometry.

They come pre-filled and can be joined together to create a unit capable of resisting significant flow velocities in high-energy watercourses and protecting against wave action.

They are commonly used below or at the water level and form part of a solution with other bioengineering materials. Rock rolls can be lifted with the straps provided, or chains, and placed in position. They can be installed without the need for temporary dewatering.

Because of the small stone grading, rock rolls accrete silt and can fully vegetate where suitable. They support a greater abundance and diversity of invertebrates owing to the increased interstitial space between stones that can be colonised compared with rock armour and gabions.





Flexible nature of rock rolls being used to protect a bridge abutment



Rock rolls on a steep embankment

- Rapid installation compared to filling wire gabions on site with big savings on labour costs
- Can be installed in flowing water or below water level such as headwall outlets, lake margins and river beds
- Salix rock rolls can often replace large rock armour, concrete and rip rap plus provide long term protection for soft/green engineering solutions, i.e bioengineering
- Salix rock rolls can be used in fresh or salt water
- Flexible system that contours to the surface
- UV stabilised nets are abrasion resistant and do not suffer from corrosion
- Health & safety benefits due to no fabrication on site, reducing accident risks
- Pre-filling ensures consistent quality and tightly packed stone, reducing the risk of voids and stone movement

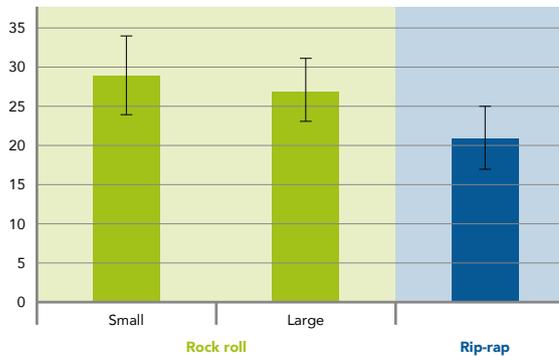
Benefits

Salix rock rolls allow fine accretion of sediment to enable vegetation establishment





**Resilient protection
whilst also providing
habitats for a diverse
range of marine
and freshwater
invertebrates**



Swansea University

Rock rolls provide habitats for a diverse range of marine and freshwater invertebrates. Examples found in research from Swansea University include: *Phyllodoce maculate*, *Capitella capitata*, *Scoloplos armiger*, *Melita palmate*, *Carcinus meanus*, *Idotha pelagica*.

Ecological Benefits

- The stone sizing and grading within the rock rolls has been developed to provide a balance between the structural interlock needed to provide a robust revetment and the optimum grading for ecosystem development and diverse biotic community habitat
- Rock rolls encourages fine accretion of sediment to enable vegetation establishment providing habitat for insects, molluscs and other invertebrates, which in turn supports fish and water bird populations
- Unvegetated *Salix* rock rolls blend in easily with natural freshwater and marine sediments and provide substratum for numerous faunal and invertebrate species
- Many hard revetments (e.g. concrete blocks, blockstone, rip rap, gabions) deflect and reflect water energy which can cause erosion and scour issues elsewhere. Rock rolls are absorptive rather than reflective due to the high interstitial spaces between the rocks. As such, water energy is absorbed, resulting in natural processes being retained and minimising the impacts downstream or around the rock rolls revetment





Rock rolls provide a sturdy base in bioengineering projects

Rock Rolls Applications

1. Rivers and Watercourses

Rock rolls can be used within bioengineering projects to form a robust toe that absorbs energy from water flow and wave action.

This allows the “living” elements of the bioengineering solution to establish in areas where energy levels would otherwise be too great.

The small stone size in the rock rolls allows vegetation to easily establish and so the whole revetment becomes a vegetated system.

Rock rolls are installed at the toe to withstand the abrasive action of cobbles and gravels under flood conditions, with a living element of a pre-established coir roll containing native marginal plant species to encourage plant growth through the rock rolls.

Rock rolls being used to stabilise a bank on a watercourse diversion



Natural colonization of vegetation due to accretion of sediment



Rock roll & brushwood toe tie in detail for Vmax P550



One year later





Applications

2. Shorelines

Rock rolls can be used as an alternative to rock armour to reduce the quantity of materials and to protect against wave action.



Rock rolls placed in front of coir rolls to dissipate wave action from boat wash



Reservoir shoreline one year later with excellent reed growth

3. Intertidal Zones

Rock rolls are not adversely affected by salt water therefore they can provide long term revetment that accrete sediment rapidly, especially in high sediment load intertidal applications.



Rock rolls accreting sediment on an intertidal zone





Applications



4. Spillways

Rock rolls are an ideal revetment to tie in TRM's (Turf Reinforcement Mats) such as Vmax that are often used to cover spillways.

They can be used where there is concern over hydraulic jumps or very high flow rates.



5. SuDS

Rock rolls can be used to line drainage channels to prevent erosion on steep gradients with high flows.

Rock rolls are ideal as instant protection in scour zones around outfalls adjacent to headwalls especially in flowing water conditions where hand filled wire gabions would be impossible to fill in situ.



6. Asset Protection

Rock rolls provide ideal instant protection around scour zones on assets such as bridges, pipelines, retaining walls, railway lines and highways.

**Rock rolls can
be used as an
alternative to
rock armour and
concrete.**





Rock rolls can be combined with bioengineering solutions, to create a fully vegetated revetment

Rock Roll Fixing Solutions

Anchoring solutions for erosion control and soil stabilisation

RockLock® Benefits:

- **Ultimate fixing option to prevent movement**
- **Single surface layer of materials required**
- **Protect against shallow slips**

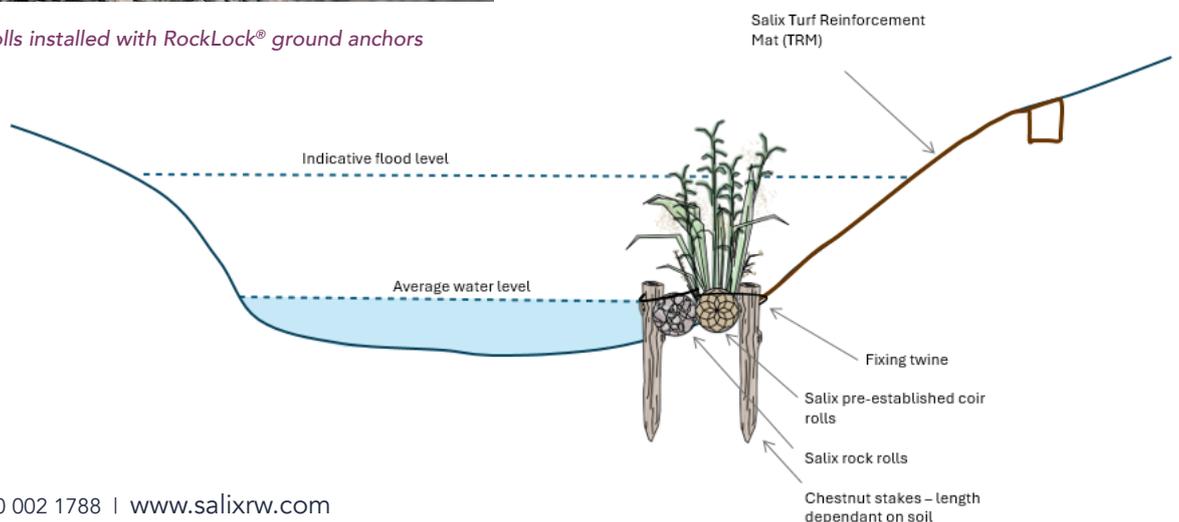


Rock rolls installed with RockLock® ground anchors

Rock rolls are typically fixed using three methods:

- Fixing twine to stitch each Rock roll to its neighbour
- Chestnut stakes
- RockLock™ ground anchors.

We offer a variety of ground anchors and fixings. Speak with our technical team to discuss the most appropriate option.





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