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COCONUT- & JUTE-FIBRE

Erosion Control Mats

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KEY ADVANTAGES
at a glance

→ Natural erosion control

→ Extremely flexible and mouldable

→ Biodegradable:
An environmentally-friendly overall concept

COCONUT- & JUTE-FIBRE
Erosion Control Mats

Inclined earthworks, such as embankments, noise barriers and riverbanks, are extremely susceptible to erosion until the fill material has been fully consolidated and the surface has been covered with vegetation and root growth. Particularly heavy rainfall can lead to extensive erosion damage and earth slippages, which may result in extremely costly and sometimes repeated repair work.

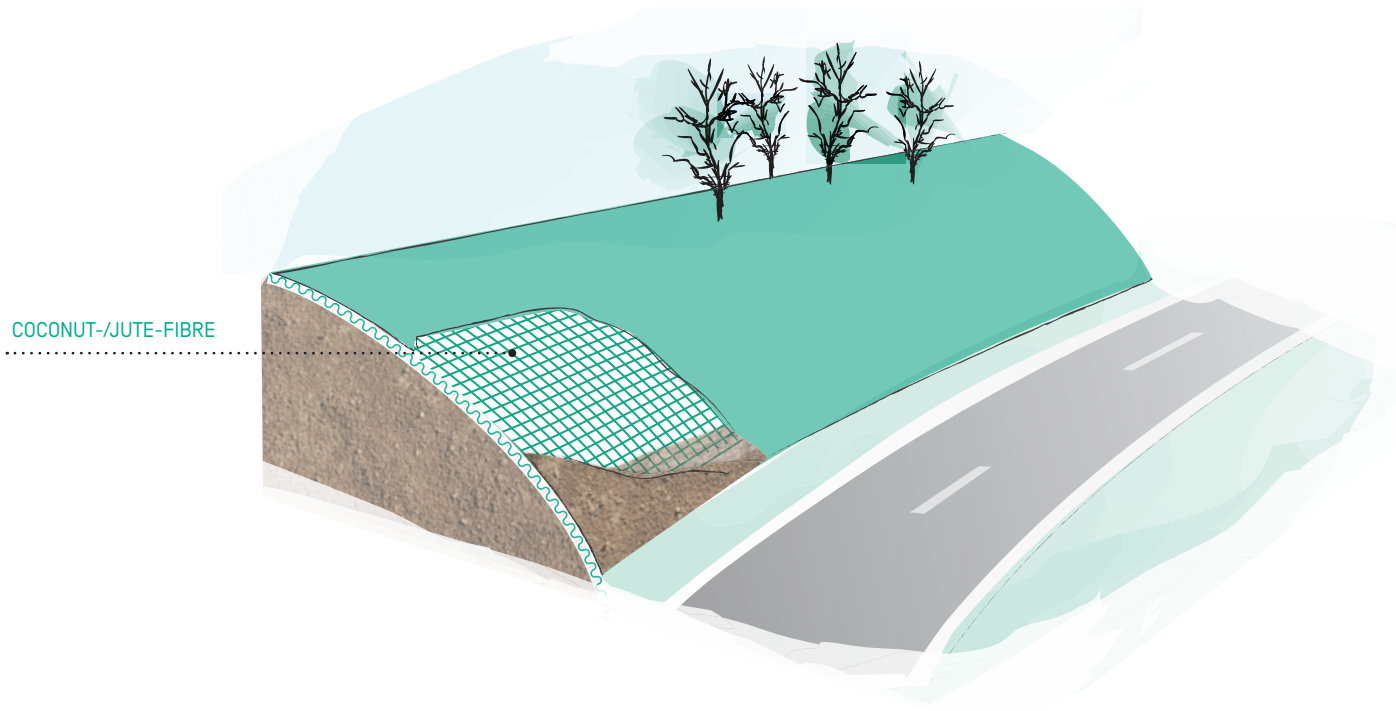
These costs can be avoided by careful planning and design. Investment in suitable erosion protection measures at an early stage is cost-effective and saves designers, authorities and developers from public criticism.

The rapid establishment of an evenly greened surface is important not only for safety and stability reasons but also for the general interest in creating a natural and intact environment. For this purpose, erosion control mats of different types are increasingly used as a stabilising layer that is placed on top of the seeded surface.

PRODUCT DETAILS
and properties

Erosion control mats made of woven coconut fibre or woven jute fibre also benefit seed germination since they balance out fluctuations in temperature. Furthermore, these fibres store water very well and release it again very slowly, and this helps prevent the soil from drying out.

COCONUT- and JUTE-FIBRE Mats are easy to lay and they adapt flexibly to the shape of the ground – uneven surfaces can also be uniformly covered. The mats also rot without leaving any residue and become valuable humus.



Fixing materials:
The mats are held in place with special wooden pegs or metal fixings, depending on the type of application. These make sure that the erosion control mats are securely bonded to the subgrade and prevent them from becoming detached under the effects of weather conditions.

FUNCTIONS
COCONUT- & JUTE-FIBRE

Erosion control

COCONUT-FIBRE Mats and JUTE-FIBRE Mats provide a cost-effective solution for protecting embankments, river banks and shore areas from the undesirable erosion of soil caused by the effects of water and wind. The mats protect seeds from extreme fluctuations in temperature, creating favourable conditions for germination. These natural erosion control mats also store excess water and release it again very slowly. This prevents the top layers of soil from drying out quickly.

APPLICATIONS
COCONUT- & JUTE-FIBRE

Inclined surfaces
In highway and water engineering there are many types of sloping earthworks that require effective erosion protection. Embankments, noise barriers, dams, dykes, rainwater retention basins, riverbanks and landfill sites are all typical fields of application for erosion control mats made of coconut fibre or jute fibre.

The subsoil must contain sufficient humus for the vegetation to be able to grow adequately.

Applications matrix at a glance

We are happy to supply current data sheets, specifications, certificates and technical verifications on request.

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Properties	JUTE-FIBRE 500	COCONUT-FIBRE 400	COCONUT-FIBRE 700
Type of product	Natural-fibre woven fabric		
Raw material	Jute fibres	Coconut fibres	Coconut fibres
Mass per unit area [g/m²]	500	400	700
Mesh size [mm]	18 × 11	18 × 21	16 × 16
Max. long./transv. tensile load [kN/m]	6 / 3	10 / 6	11 / 13
Service life* [years]	1	3	3 – 5
Areas of application			
Embankments up to 1:1.5	●	●	●
Embankments up to 1:1		●	●
Embankments steeper than 1:1			●
Initial growth support	●	●	●
Temporary erosion control	●	●	●
Ski slopes			●
Riverbank protection			●
Summer dykes		●	●
Rainwater retention basins		●	●
Flood barriers		●	●
Zone between high and low water			●

● Suitable

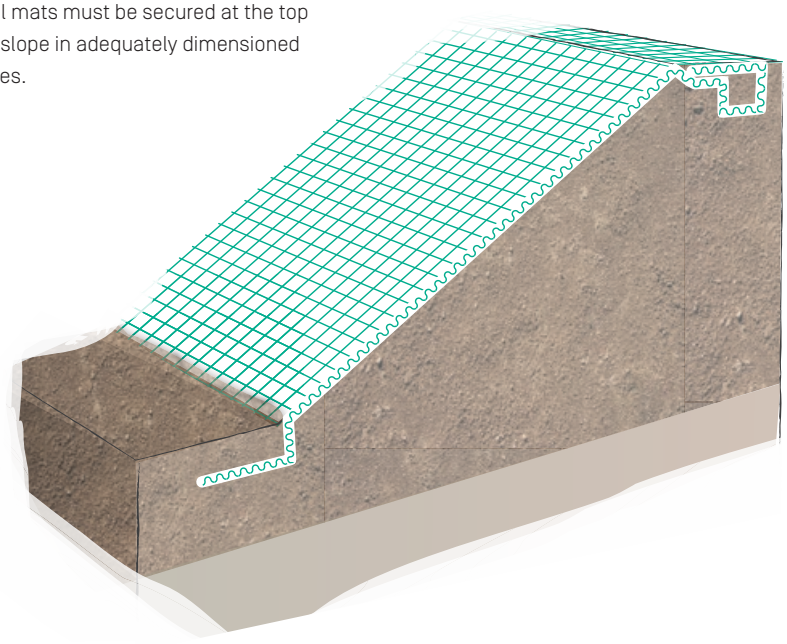
*The service life is a guideline value since it depends on actual site-specific factors such as the solar radiation, soil, water, climate and erosion conditions.

INSTALLATION INSTRUCTIONS
COCONUT- & JUTE-FIBRE

1. The erosion control mats must not be exposed to the elements during storage or transport. Otherwise, mould growth and premature biodegradation could occur.
2. The subgrade must be even and free of stones and lumps of earth.
3. The subsoil must contain sufficient humus for the grass to be able to grow. Otherwise, the surface must be covered with a humus layer at least 5 cm thick and screeded off to create an even surface.
4. The seed must be suited to the location and be sown evenly and in sufficient quantities.
5. The erosion control mats must be in contact with the subgrade over their entire area, since growth, vegetation and erosion control are only possible if direct contact is ensured.
6. The mats are fixed at grid intervals of approximately four to five fixing points per square metre, depending on the gradient.

Installation detail
Embedding trenches

The erosion control mats must be secured at the top and bottom of the slope in adequately dimensioned embedding trenches.



Fixing materials

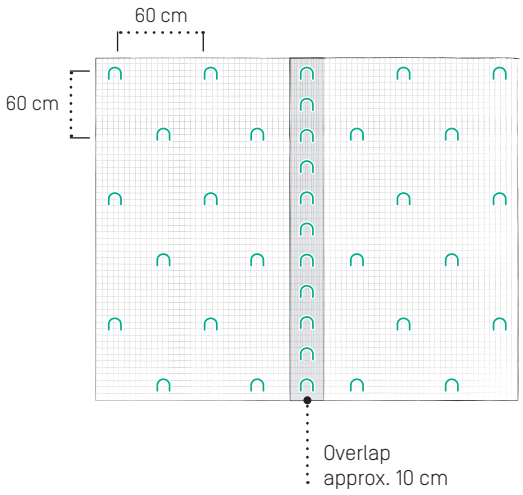
The permanent fixing of open-mesh embankment mats made of jute or coconut plays an essential role in ensuring successful erosion control. Usually, clips, staples, fixings or clasps made of metal, plastic or wood are used for this purpose. These make sure that the erosion control mats are securely bonded to the subgrade and prevent the mats from becoming detached under the effects of weather conditions. Depending on the soil properties, the slope inclination and the type of application, the special wooden pegs or metal fixings are used.

Wooden pegs
The wooden pegs with a cross-piece are ecologically sustainable and are used mainly for close-mesh fabrics and predominantly soft or sandy soils.

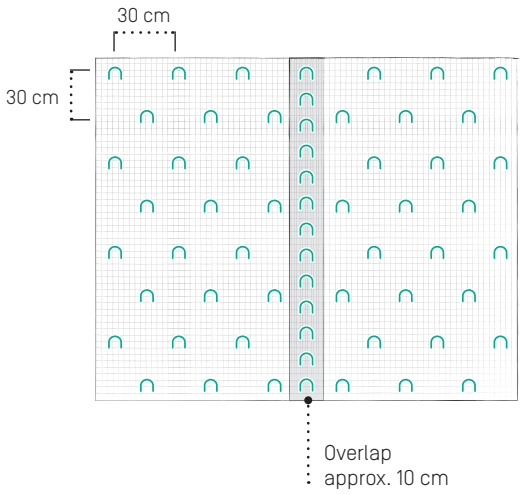
Metal fixings
The metal fixings are the preferred option for fixing wide-mesh erosion control fabrics or when used on predominantly compact soils.

Fixing grid

Slope < 1:5



Slope ≥ 1:5



The overlap must be planned with the direction of the prevailing wind in mind, so that the wind does not blow directly under the edge and lift the mat.

SUSTAINABILITY
and ecological advantages

Biological and sustainable slope protection and erosion control

Ecology and sustainability are decisive criteria when selecting erosion control products. When it comes to temporary erosion control measures and gentle slopes, biodegradable mats made of jute-fibre and coconut-fibre fabric are the first choice.

The COCONUT-FIBRE Mats are made of 100 percent pure double-twisted coconut yarn. They are not chemically treated and are therefore completely biodegradable. The mats have a service life of three to five years, depending on the environmental and weather conditions.

The wide-mesh JUTE-FIBRE Mats rot completely over a period of one to two years, depending on the environmental and weather conditions, to produce a vegetation-friendly humus. The mats are therefore ideal for providing short-term erosion control.

Natural-fibre fabrics are also suitable for recultivating and securing raw soils as well as for protecting slopes. If, after construction measures, only a small amount of humus-rich soil capable of supporting vegetation remains, natural-fibre mats can be used to prevent leaching of the remaining fine soil particles and to form a basis for the development of a new soil layer.

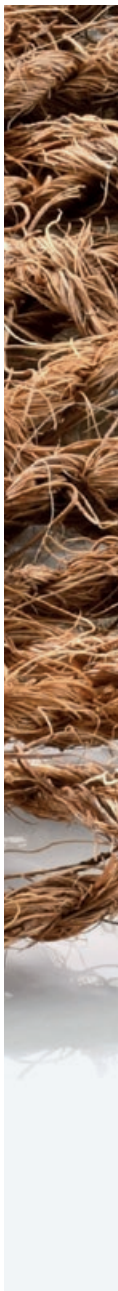
Made from renewable raw materials

100 % biodegradable

ADVANTAGES

COCONUT- & JUTE-FIBRE Erosion Control Mats

- → Natural erosion control
- → Secure bedding of seeds
- → High water storage capacity
- → Wide range of applications
- → Extremely flexible and mouldable
- → Biodegradable
- → Environmentally-friendly overall concept



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