Erosion Control - A Natural Solution

Terrafix® Coir Mats and Coir Logs are made of pure coconut husk fibre - 100% natural and biodegradable. Coir fibre is durable and strong, with the right properties for being spun and woven into a high strength mat.

Features

• Coir Mat erosion control mattings are made from coir fiber which is 100% natural, organic, biodegradable and safe to wildlife
• More flexible than mattings made from bristle coir fibre. This characteristic allows Coir Mat to interface with the soil surface
• High tensile strength and durability makes it suitable for the most severe erosion control problems
• Easy to install
• 36 to 72 months longevity to allow for full vegetation establishment
• Absorbs water and acts as a mulch on the surface as well as a wick in the soil mantle. This creates an ideal micro-climate for the germination of seeds
• Open mesh construction provides an excellent opportunity for the growth of vegetation
• Adds fertility to the soil after biodegradation
• Accelerates the development of aquatic and riparian habitat
• Accepts hydraulically applied products
• Traps sediments and encourages deposition
• Environmentally and aesthetically pleasing
• Provides effective erosion control of steep slopes and high velocity flow channels
• Provides economic and environmentally sound stabilization of stream banks & shorelines

Applications

• Slope and channel stabilization
• Stream and river bank stabilization
• Wetland construction
• Golf courses
• Erodeable sea shore
• Dunes
• Tidal marshes
• Detention ponds
• Highway and rail embankments
• Mining operations and landfills
• Intermittent flow channels
• Ski slopes and ski lift tracks
• Pipelines
• High altitude planting
• Reservoirs
• Construction sites

To view our complete product line visit us at www.terrafixgeo.com
Coir Mats

Coir Mats are made from 100% natural biodegradable coconut fibre and are naturally resistant to rot and moulds. They are excellent for controlling soil erosion by holding the soil in place and dissipating the force of heavy rains and run-off water.

With a longevity of 36 to 72 months, Coir Mats will provide good soil support while allowing natural vegetation to become established. They will also promote growth of new vegetation by absorbing water and preventing the topsoil from drying out, creating an ideal micro-climate for seed germination.

Coir Mats are available in 3 varieties, being Coir Mat 400, Coir Mat 700 & Coir Mat 900, with the number corresponding to the density in g/m² for that particular mat.

Technical Specifications for Coir Log

<table>
<thead>
<tr>
<th>PROPERTY</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Netting</td>
<td>Coir</td>
</tr>
<tr>
<td>Diameter</td>
<td>30 cm</td>
</tr>
<tr>
<td>Length</td>
<td>2.28 m</td>
</tr>
<tr>
<td>Weight per 7.5 ft (2.28m)</td>
<td>18 kg</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>350N</td>
</tr>
<tr>
<td>Inner Core Density</td>
<td>112 kg/cu.m</td>
</tr>
</tbody>
</table>

Coir Logs Specifications
Coir Log Installation

To insure successful installation of Coir Logs, it is important that proper staking procedures are followed to prevent logs from being displaced from the shoreline.

For sites such as small ponds, or where water flow is slow moving, a minimum of 4 stakes per 2.28 meter log can be used (Fig. 1.1). The wood stakes should be placed along the water side of the Coir Log and the stake should be held in place using twine (Fig. 2).

On medium water flow sites, at least 6 stakes should be used per 2.28 meter log (Fig. 1.2). If there is a potential for water flow or ice to lift the log from position, the log should be held in place using twine (Fig. 3).

On high water flow sites, such as lakes or in fast moving currents, a minimum of 8 stakes should be used on a 2.28 meter log (Fig. 1.3).

Coir Mat Installation

Site Preparation: Grade and shape the area of installation. If applicable, prepare seed-bed by loosening 5 cm to 8 cm of topsoil.

Seeding: Seed the area before the installation of Coir Mat. For best results, a veneer of soil should be raked over the broadcast seeded surface. All check slots and other areas disturbed during the installation must be re-seeded.

Anchoring: U-shaped wire staples (11 gauge minimum 15 cm to 30 cm long) or wooden stakes can be used to anchor the matting to the ground.

Installation on Slopes

• Begin at the top of the slope and anchor Coir Mat in a 30 cm deep initial anchor trench. Backfill trench and tamp earth firmly.
• Unroll matting down slope.
• Overlap edges of adjacent parallel rolls 15 cm and anchor with staple at 30 cm centres.
• When Coir Mat must be spliced, place end over end (shingle style) with 30 cm overlap and anchor using two staggered rows of staples at 15 cm centres.
• Lay mat loosely and anchor sufficiently to maintain direct contact with the soil.
• Anchor, fill and compact end of the matting in 30 cm x 15 cm terminal anchor trench.

Installation in Channels

• Dig 30 cm x 30 cm initial channel anchor trench across the channel at the upstream end.
• Excavate intermittent 15 cm x 15 cm check slots across the channel at 7.6 m to 15 m intervals along the channel depending on the slope gradient.
• Cut 15 cm x 15 cm longitudinal channel anchor slots along each side of the installation to bury the edges of Coir Mat.
• Begin the initial anchor trench installation in the channel centre. Secure initial ends of Coir Mat using anchors at 30 cm centres, backfill and compact soil.
• In the same manner, position adjacent rolls in the initial anchor trench overlapping the preceding roll a minimum of 15 cm.
• Unroll centre strip downstream.
• Unroll adjacent mats downstream in similar fashion, maintaining 15 cm wide overlap. Anchor through the overlapped area at 30 cm intervals.
• Secure the edges of Coir Mat along the longitudinal trench using anchors at 30 cm centres.
• Fold and secure the matting snugly into all transverse check slots. Lay the matting in the bottom of the slot and then fold back against itself. Anchor through both layers of matting at 30 cm intervals then backfill and compact soil. For non-critical installations, place two staggered rows of anchors at 15 cm centres in lieu of check slots.
• When Coir Mat must be spliced, place upstream matting over the downstream matting (shingle style) and anchor using two staggered rows of staples at 15 cm centres.
• Anchor, fill and compact downstream end of the matting in terminal anchor trench.
Coir Logs

The coconut coir log has a functional longevity of approximately 36 to 48 months. The functional longevity period will depend on the micro climate, where the coir log is laid and also on the external environmental conditions the log is exposed to. The functional longevity is enhanced by the strong spun bristle coconut fiber along with the high compaction of coconut fiber while supporting the vegetation. Coconut fiber is a natural product from the Coconut Palm tree (Cocos nucifera) and 100% biodegradable product without any external additives (chemicals or any other colourings).

Coir Logs are made out of 100% natural biodegradable coconut fibers and the product composition is divided into two categories, the outer netting and inner core material. The outer netting is made with high tensile machine spun bristle coconut fiber. The high tensile bristle coconut fiber netting is made up to an open area of 25.4mm x 25.4mm opening. The inner core is filled up with hydraulically compacted coconut fiber and coir logs are available in two different densities. This product is highly recommended for bank stabilization and shore land restoration, where the banks are subjected to severe erosion. The coir logs will act as a barrier and cut down the high water waves hitting the bank and at the same time will facilitate the vegetation establishment to grow and naturally protect the bank erosion.

![image of coir logs]

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Coir Mat Specifications

Coir Mats are made out of 100% natural biodegradable coconut fibers and the product composition is divided into two categories, the outer netting and inner core material. The outer netting is made with high tensile machine spun bristle coconut fiber. The high tensile bristle coconut fiber netting is made up to an open area of 25.4mm x 25.4mm opening. The inner core is filled up with hydraulically compacted coconut fiber and coir mats are available in two different densities. This product is highly recommended for bank stabilization and shore land restoration, where the banks are subjected to severe erosion. The coir mats will act as a barrier and cut down the high water waves hitting the bank and at the same time will facilitate the vegetation establishment to grow and naturally protect the bank erosion.

![image of coir mat]

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<table>
<thead>
<tr>
<th>Technical Specifications for Coir Mat 400, 700 &amp; 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Size with mesh (L x W)</td>
</tr>
<tr>
<td>Tensile Strength (dry)</td>
</tr>
<tr>
<td>Water Absorption (dry)</td>
</tr>
<tr>
<td>Bursting Resistance</td>
</tr>
<tr>
<td>Tear Resistance</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Water Absorption</td>
</tr>
<tr>
<td>Shore Astern</td>
</tr>
</tbody>
</table>

*Values represent standard tests (dry tests).

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The coconut coir log has a functional longevity of approximately 36 to 48 months. The functional longevity period will depend on the micro climate, where the coir log is laid and also on the external environmental conditions the log is exposed to. The functional longevity is enhanced by the strong spun bristle coconut fiber along with the high compaction of coconut fiber while supporting the vegetation. Coconut fiber is a natural product from the Coconut Palm tree (Cocos nucifera) and 100% biodegradable product without any external additives (chemicals or any other colourings).
Coir Logs

Coir Logs are made out of 100% natural biodegradable coconut fibers and the product composition is divided into two categories, the outer netting and inner core material. The outer netting is made with high tensile machine spun bristle coir fiber. The high tensile bristle coir fiber netting is made up to an open area of 25.4mm x 25.4mm opening. The inner core is filled up with hydraulically compacted with coconut fiber. The coir logs are available in two different densities. This product is highly recommended for bank stabilization and shore land restoration where the banks are subjected to severe erosion. The coir logs will act as a barrier and cut down the high water waves hitting the bank and at the same time will facilitate the vegetation establishment to grow and naturally protect the bank erosion.

Coir Mat Specifications

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The coconut coir log has a functional longevity of approximately 36 to 48 months. The functional longevity period will depend on the micro climate, where the coir log is laid and also on the external environmental conditions the log is exposed to. The functional longevity is enhanced by the strong spun bristle coir fiber along with the high compaction of coconut fiber while supporting the vegetation. Coconut fiber is natural product from the Coconut Palm tree (Cocos nucifera) and is 100% bio-degradable product without any external additives (chemicals or any other colourings).

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST METHOD</th>
<th>UNITS</th>
<th>COIR MAT 400</th>
<th>COIR MAT 700</th>
<th>COIR MAT 900</th>
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<tbody>
<tr>
<td>Tensile</td>
<td>ASTM D 3959</td>
<td>lb/in</td>
<td>3,500</td>
<td>3,500</td>
<td>3,500</td>
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<tr>
<td>Mass per unit area</td>
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<td>oz/ft²</td>
<td>400</td>
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<td>Wet tensile strength</td>
<td>ASTM D 1504</td>
<td>kN/m²</td>
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<td>7.76 x 10²</td>
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<tr>
<td>Bursting tensile strength</td>
<td>ASTM D 4055</td>
<td>%</td>
<td>86.49 x 10²</td>
<td>86.49 x 10²</td>
<td>86.49 x 10²</td>
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<tr>
<td>Bursting strength</td>
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<tr>
<td>Water absorption</td>
<td>ASTM D 1107</td>
<td>%</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
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*Material cost is (in USD per bale of 1000)
Coir Log Installation

To ensure successful installation of Coir Logs, it is important that proper staking procedures are followed to prevent logs from being displaced from the shoreline.

**Site Preparation:** Grade and shape the area of installation. If applicable, prepare seed-bed by loosening 5 cm to 8 cm of topsoil.

**Seeding:** Seed the area before the installation of Coir Mat. For best results, a veneer of soil should be raked over the broadcast seeded surface. All check slots and other areas disturbed during the installation must be re-seeded.

**Anchoring:** U-shaped wire staples (11 gauge minimum 15 cm to 30 cm long) or wooden stakes can be used to anchor the matting to the ground.

Installation on Slopes

- Begin at the top of the slope and anchor Coir Mat in a 30 cm deep initial anchor trench. Backfill trench and tamp earth firmly.
- Unroll matting down slope.
- Overlap edges of adjacent parallel rolls 15 cm and anchor with staple at 30 cm centres.
- When Coir Mat must be spliced, place end over end (shingle style) with 30 cm overlap and anchor using two staggered rows of staples at 15 cm centres.
- Lay mat loosely and anchor sufficiently to maintain direct contact with the soil.
- For slopes 2:1 and steeper use a minimum of 2 staples per square metre and for slopes flatter than 2:1 use a minimum of 1 staple per square metre.
- Anchor, fill and compact end of the matting in 30 cm x 15 cm terminal anchor trench.

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- Dig 30 cm x 30 cm initial channel anchor trench across the channel at the upstream end.
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