**INSTALLATION OF FIBRE ROLLS AND BAGS**

* Always, due to their weight, install dry fibre rolls as wet fibre rolls are more difficult to handle and can slow down operation time. (www.coirproduct.com).
* The denser the fibre roll the longer the application will last. On some sites longer lasting applications will be required where vegetation has more difficulty establishing (www.coirproduct.com).
* For all applications it is critical that the products are placed parallel to the contour or perpendicular to the expected flow of water.
* In order to fill each bag with material, open the mouth of the bag and place fill material into it. Using a pick handle, force the material to the back of the bag. Do this until the bag is completely full and has expanded to its maximum volume. Half full bags do not have the same height and therefore do not trap as much sediment as a full bag.
* Place the bags in position so that they fit snugly against the surrounding soil, ensuring that no water can erode underneath them and so that they are closely abutted to one another. This is very important and if not done correctly will result in erosion at this point in the intervention.
* Dig small trenches that are deep enough to contain the bottom half of the product, approximately 200 mm
* Commence the installation of the product from the bottom to the top of the site.
* The products must be keyed in well to the banks of the erosion problem such that water flows over the product and not around it, which may lead to erosion and product failure. It is important that water must be able to flow over the product and not around it. For more information see www.earth-savers.com.
* Wooden stakes, broom sticks, metal pins or duckbill anchors (www.ropecon.co.za) can be used to secure the products.
* If hard fill material is used in the fibre bag, make pilot holes with a metal rod through the fibre bag and then use the wooden stakes or broom sticks.
* In gully floor applications soil anchors should be used in conjunction with the pegs. This gives the fibre bags a more secure anchor in situations where high velocities are expected during high rainfall events.
* The anchors are placed on the upstream and downstream side of the product and tied together with wire.
* Depending on the soil structure anchors should penetrate the soil to a minimum depth of 500 mm below the surface. ([www.cocoterra.de](http://www.cocoterra.de).)
* Drive the stakes through the products leaving no more than 50 mm of the stake exposed. Stakes should be placed every 1.5 meter of the length of the roll.
* On very steep or erosive slopes, additional stakes may be placed on the downslope side of the roll.
* The use of staples, stakes and pegs as soil anchors is discussed later in this section.
* Products used on the edge of water bodies must be placed so that 50 mm of the roll extends above the surface of the water (www.kristar.com).
* At the edge of water bodies drive stakes 300 mm apart in parallel to the product.
* Place the product in position and using coir lacing or wire, lace the parallel stakes together keeping the product in position (Figure 6.23; www.kristar.com).
* Wave action on the edge of water bodies will dislodge items and if the product is not correctly anchored the wave action will lift and drop the product until it dislodges, causing the product to fail.
* The vegetation removed during the sloping can be used to plant in the product or in the soil behind the product.
* According to African Gabions (2004), it is recommended that 2 plants be planted every 300 mm along the length of the product.
* In sites where there is gully erosion, the products should be used in conjunction with sloping of the problem. Once the sloping has been completed, the products should be placed into position so that no soil surface area is exposed.
* Where the water enters the gully head erosion it is very important to fit the product as tightly as possible against the soil surface.
* The pegging of these products is very important, since if any of the products should move, gully head erosion may continue. This will concentrate water flow and undermine the products.



**Stakes and Pegs**

Fibre rolls and fibre bags must be pegged into position to secure them in the required positions. If these applications are not pegged into position correctly ,they can be moved out of position, which can result in

the application failing. There are many different kinds of pegs that can be used in pegging down

applications, including steel pegs, plastic pegs and wooden stakes. They all serve a common purpose, but cost effectiveness and durability should be the final factors in deciding upon which to use. In certain areas of South Africa broom handles can be acquired and used as pegging material. According to African Gabions (2004) the pegs should be a minimum length of 0.8 m long and 40 mm wide. The peg can be driven in on the vertical or perpendicular to the slope, although on steeper slopes the peg should be driven in at an angle between perpendicular to the slope and vertical. This decreases the possibility of the product moving when

 backs up against it. Where applications need to be anchored, soil that is not firm on the surface, as

is typically found in permanent wetland areas, then soil anchors such as duckbills should be used. These are driven with a steel rod deep into the soil (usually at least 500 mm below the surface) to firmer layers below and are connected to the application with well-tensioned wire.

See www.ropecon.co.za for further details