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New Products

A-Jacks: A new way to use concrete in streambank stabilization.

Few would argue that the time has come and gone for forcing creeks into concrete channels. As the feature "Nature as Landscape Architect" (Feb. 2000, p.78) discusses, technology in soil bioengineering has advanced to the point where it is rarely justified to place a stream into a "concrete straitjacket." But somewhere between the completely organic approach of using only plants and plant parts and the outdated concrete channel you will find a new product called A-Jacks.

These concrete structures—which come in diameters of 24, 48, 72, 96 and 120 inches—when combined with bioengineering products and techniques are an innovative way to provide fast streambank stabilization while at the same time creating habitats for wildlife and plants. The result is a natural appearance, ecological sensitivity, and fast yet enduring erosion control.

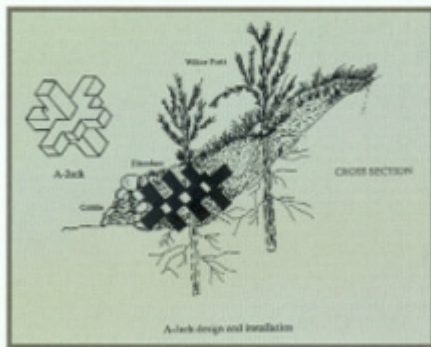
Each A-Jack unit comes as two separate pieces assembled by sliding one half into another. Mortaring the joints helps hold them together during installation, but is not a mandatory step in the installation process. The result is a cross-shaped concrete unit that resembles the toys commonly known as "jacks." Each piece of a 24-inch unit weighs about 40 pounds. Each of the 96-inch units weighs in at more than a ton and requires a backhoe and sling for assembly.

The actual installation is similar to using riprap. The streambed is excavated to form a shallow trench at the base of the eroding bank to a level that is below the elevation of the streambed. Next, two or three rows of assembled A-Jacks are set into place and held together by the interlocking action of the units. Depending upon the slope and volume of water, an

upper row of A-Jacks may be set in place along the vertical bank. Various types of geotextiles can be used between A-Jacks to reduce the erosion and movement of fine soils while root systems are developing.

With the A-Jacks in place, rooted stock, cuttings, and even plants with small root-balls can be planted between the units at a depth below the level of the water table. Additional plants can be added behind the row of A-Jacks as well.

Now the area can be back-filled using soil removed when digging the trench. Because this soil is typically wet and "soupy," it will ooze into the pore space between the concrete units. The bank is then sloped over the A-Jacks and tamped into place with the back face of a backhoe bucket.



The last step is to seed the bank (where desired), then cover with a geotextile. As with any new planting, seeded banks or plants stuck into the soil between the A-Jacks above the water table will need regular irrigation to get them established.

As the drawing above shows, the finished product presents a totally biological



BENEATH THIS VERDANT SETTING A MATRIX OF CONCRETE HOLDS THE STREAMBANK IN PLACE.



face to the world with an underpinning of man-made structural stability. Fish, fowl, reptiles, and mammals can all find haven in the spaces left between the units, and there is ample room for root growth of the various cuttings.

While ideally suited for stream and riverbank restorations, this product has also been used successfully as a means of shoreline stabilization along lakes and oceans. It has also proven useful as a means of stabilizing the base of underwater piers in rivers and tidal basins. LA

For more information on A-Jacks, contact Armotec Erosion Control Solutions at:

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