

New products

B.C. company provides an answer for soil erosion control

A Vancouver company has come up with an idea in the field of engineering. Deltalok's invention is a simple mechanism that interlocks soil bags, now making them practical as both soft and hard armour application solutions.

Its use extends to such areas as erosion control, retaining walls and environmental restoration, and has been put to use in various projects around the globe.

Unlike reinforced concrete walls, pre-cast concrete panels and concrete blocks, Deltalok soil bags can vegetate and produce a visually-pleasing, natural green finish.

Hun S. Kim is the group chairman and CEO of Deltalok Inc. and a veteran of the civil engineering industry for close to three decades. He saw that there was a significant void in the industry, a gap between traditional hard and soft armour applications. He then posed the simple question, "How can we give the market a completely natural-looking earth wall solution while not compromising structural integrity and permanence?"

In search of an answer, Kim went to his basement and devised the Deltalok system of interlocking and structurally reinforcing soil bags for the construction of retaining walls, culvert headwalls and a myriad of other applications that were never before possible without the use of hard armour. He then put his numerous resources to work to take the idea beyond the concept stage and began manufacturing the Deltalok system, in Canada, for use in the engineering field.

The system is based on combining a simple yet



unique (patents are pending worldwide) soil bag interlocking mechanism with traditional soil reinforcement methods that have been practised for more than 20 years.

This combination now means a single system is available to provide for both soft and hard armour applications in the building of structural vegetated retaining structures, without the need for concrete or steel.

The Deltalok system has been designed to incorporate existing materials, such as geotextiles and geogrids, that have been widely accepted within the industry for years. It comprises key components that work together as a system or in tandem with other existing materials on the market.

The "standard unit" is made of a tough yet lightweight plastic, is rectangular in shape with strategically-positioned "claws" top and bottom to "grab" soil bags as they

are stacked in a "delta" (pyramid) formation. Thus, it "interlocks" conventional soil bags, improving height, stability and strength of self-standing bagwork walls like never before. Gone are traditional, unsightly concrete walls, and in their places...vegetation of choice, incorporated into the soil bags themselves. Grass, fescue, plants...it's the project owner's choice. And when you think about it, when was the last time you saw graffiti spray-painted onto grass?

The "engineered" unit interlocks soil bags and acts as a mechanical connection to geogrids for engineered walls. The "GTX bag" is used for the wall face, making attractive vegetation of the wall face a reality.

Aside from the pleasing visuals of naturally vegetated retaining walls, Deltalok also means ease in construction and transport of materials.

For illustration, Deltalok system materials needed for 1,000 square feet can comfortably fit inside a typical sport utility vehicle. Similar square footage of retaining wall components—using traditional hard armour materials—would require more than 1,000 blocks weighing more than 75,000 pounds, not to mention the equipment required to put them in place.

The City of Abbotsford, B.C. had a distinct need...to create culvert headwalls in projects that required an ecosensitive solution due to their proximity to fish-bearing streams. The structural integrity of the system made it possible for the city to save an existing roadway from further erosion damage. Steep and strong bagwork wall faces were created by using Deltalok standard units and