

“This expedient capability shortens the forces’ response time and provides the warfighter increased flexibility for landing zones and medical evacuations.”

The Mobi-Mat is a light tri-dimensional polyester mesh that comes in rolls of 13 feet, 11 inches by 33 feet, weighing 176 pounds. Two men can transport the roll and three can unload, unroll, connect and stake it down.

“The Mobi-Mat installation rate is a minimum of 10,000 square feet per hour for a 16-man team on an eight-hour shift, using only common handheld or powered tools,” said Hamon, and the same goes for its removal rate. “The Mobi-Mat system has the ability to accomplish this process of installation, removal and re-installation a minimum of three times in any 12-hour period, including all applicable anchoring installation and removal iterations.”

CGear, a company based in Port Melbourne, Australia, provides lightweight flooring composed of two layers of woven polyethylene mesh sewn together, with reinforced binding at the edges. The product, known as CGear Tactical Helimat, is designed to be used on the ground, which is relatively flat, said the company’s chief executive officer, Glen Sinclair-Gibson.

The CGear Tactical Helimat includes multi-layered, open-weave polyethylene mesh, which prevents brownout by inhibiting the sand and dust underneath the mat from coming back up even when being pounded by a powerful rotor downwash.

“The product was originally designed as a beach mat,” explained Sinclair-Gibson. “The holes in the polyethylene mesh are very fine, allowing sand to fall through them but at the same time preventing the sand from coming back up. One of the guys in the company flew helicopters so we put a prototype together for use as a landing pad. When we tested we found again that the sand went through but didn’t come back up.”

From that point CGear was invited to demonstrate the product to the U.S. Marine Corps and has been awarded two contracts since 2005 to deliver a total of 2 million square feet of the product.

The size of each segment is 20 feet by 20 feet. Sizing of the landing pad depends on the rotor span of each particular helicopter, with



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dimensions of the helipad approximating 33 feet wider than rotor span, in all directions. The 100 foot by 100 foot helipad configured with 25 segments, suitable for a Black Hawk, Huey or Super Puma, can be contained in less than 211 cubic feet. A Chinook would require a configuration of 6 by 6 Helimat segments, or 120 feet by 120 feet.

The shape of the CGear Tactical helipad can be customized to suit individual requirements, said Sinclair-Gibson, and it can be quickly and easily moved from one task to another. It can be packed up and deployed at forward arming and refueling points, increasing helicopter time over target. The fabric’s

weave technology prevents it from tearing or fraying, and it is resistant to fuel and oil spill damage.

The CGear Tactical Helimat has been extensively tested by the U.S. Marines and other military services, according to Sinclair-Gibson. “In U.S. Marine Corps trials at Navair Lakehurst Airbase, the CGear Tactical Helimat stood fast, even when the Marines attempted to lift and rip apart CGear’s joining and anchoring systems using a Huey, a Black Hawk and a Super Stallion helicopter,” he said. “There was no risk of the Helimat being sucked up and tangled in the rotors when correctly installed.” Testing of the Tactical Helimat in Abu Dhabi in November 2007 using a Chinook helicopter also confirmed that the product eliminates brown-out and FOD.

Soil stabilization products improve the properties of soil to make it amenable for aircraft landing purposes. These products are sometimes used by themselves but also in conjunction with matting materials.

“We refer to soil stabilization products as improving the engineering properties primarily by increasing the strength of soil,” said Kent Newman, an ERDC research physical scientist. “There are numerous commercial products used for stabilizing soils.”

Bob Vitale, CEO of Midwest Industrial Supply Inc., echoed that view. “In my view, the preferred method must stabilize or modify the surface area, eliminate dust and FOD, must be simple with ease of handling and use, and must be able to be deployed fast.” Midwest specializes in dust control, soil stabilization and erosion prevention



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