Road construction in any desert or sandy soil area can be a formidable undertaking especially if the site is remote with no acceptable fill material. A method for confining the sand and making it stable, allowing repeated passes by heavy, loaded vehicles was successfully provided with the GEOWEB® cellular confinement system.

**EARLY PERFORMANCE TESTING**

Both the U.S. Army Corps of Engineers (USACE) and U.S. Desert Storm forces found a solution for building fast access roads across sand with the GEOWEB System. By utilizing the principle of soil confinement to enhance soil strength, the GEOWEB System turns sand into a load supporting composite structure that can support heavy loaded vehicles under repeated load cycles.

Building sand roads with the GEOWEB system was well proven through a U.S. military exercise known as JLOTS II (Joint Logistics Over-The-Shore) conducted by the USACE, Waterways Experiment Station. This military exercise constructed sand roads using the GEOWEB system and applied thousands of traffic cycles by 100 rubber tired military vehicles of various wheel loads.

**ALGERIAN SAHARA DESERT:**

An American oil company wanted to access four drilling sites located 800 KM south of the Mediterranean Sea coast and 160 KM from the nearest village. Transporting both construction equipment and suitable building materials would be difficult and expensive. Asphalt roads were unacceptable because of the high costs associated with mobilization to these remote locations and local rates of installation. In the desert sand, rubber tired vehicles became bogged since the sand alone offered little support. Considering the task, the oil company decided to build a test road with the sand filled Geoweb system.

**Testing Performance**

After the GEOWEB system was installed and filled with the local sand using a front-end loader, the system was tested using 40 ton and 80 ton gross weight trucks. The first 4000 passes of traffic were applied by a 40 ton Haliburton truck. The road performed very well with sustained traffic speeds of 35 mph. This was excellent considering the conditions.

One-thousand additional traffic passes were made using 80 ton trucks. Total traffic count was 5,000 passes with no deterioration in the performance of the road. Following the test, additional Geoweb sections were ordered to build a 15 KM road to access the first drilling site.
CANADIAN OIL SANDS REGION:

Sand Access Roads and Drilling Pads
Canadian oil producers employ the GEOWEB® system on their access roads and drilling pads to reduce expensive aggregate and operational maintenance requirements.

Overcoming Challenges
Design and construction challenges include supporting heavy loads exceeding 125,000 lbs. (15,000 lbs. wheel loads) over very soft subgrades of muskeg and saturated clay. The road solution needs to be constructible in sub-zero temperatures and hold up to heavy rig and truck traffic even during the spring thaw, which completely degrades what little strength these subgrades have.

Proven Performance
Numerous roadways and drilling pads have been built utilizing the Presto GEOWEB® system. All are performing to expectations and the GEOWEB® system reduces typical cross section from 5 ft. (1.5 m) to less than 12 in. (300 mm), saving the customers significant cost and conserving local resources by utilizing local sand for infill.

PERMAFROST REGIONS:

The GEOWEB system is weather-resistant and can be installed in virtually any weather condition, even when the ground is frozen or the rain is falling.

The GEOWEB solution is fast to deploy and install, helping to keep costs down even in the most difficult site conditions.