

Afghanistan STABILIZATION OF MILITARY AIRSTRIP



QUESTION

November 2005. A military base in Central Afghanistan was experiencing problems with their only one landing strip, used mainly for Hercules C130 supply aircrafts. During landings and takeoffs, a lot of dust raised up from the landing strip.

Problems were mainly due to the clayey nature of the soil. This factor made landing on the runway difficult and dangerous.

Flights would have to be suspended at times, which would cause serious delays in the refueling of the aircrafts.

Hercules C130 taking off in a dust cloud.



GOAL

The Military decided to remedy this problem by stabilizing the runway

To achieve this, the main consideration were:

- The military base is in a remote location with hostile surroundings
- There is no local gravel that could be used to surface the runway
- If lime or cement stabilization of the base were to be a consideration, this material would have to be shipped in with truck convoys through Pakistan, and which would probably never reach the base's location due to hostile action along the way.
- The time constraints to get this project completed before the rainy season set in also prevented the lime or cement option, as well as the other option of setting up a crusher and grading sieves for local gravel production.

SOLUTIONS

These factors led to the consideration of using a liquid soil stabilizer like TERRA PLUS

TERRA PLUS, a liquid stabilizer for poor soils, offers a better stabilization and improves the CBR of the soil. **TERRA PLUS** can be effective just by sprinkling it.

Here is the technique we used to apply the product: the needed quantity was diluted in water and sprinkled on the airstrip by an aircraft driven by the local military troops.

Although the initial proposed treatment method was to scarify the surface or to haul in a suitable layer of soil and to then apply the stabilizer, it soon became apparent that these options would not be suitable, since every day, on the landing strip, several aircrafts would land and/or take off.

STABILIZATION OF MILITARY AIRSTRIP

Afghanistan

Drums loaded into an aircraft at Kabul Airport



Compacting the treated runway



Finally, applying on the surface **TERRA PLUS** mixed with water, in low quantities and with frequent applications, proved to be the best solution. The process has been accomplished without causing much troubles to the scheduled landings and departures.

Shortly after completion, rains set in for three days non-stop, with the runway hardening and being solid enough for the planes to continue using the airstrip. The runway was then also compacted with a vibrating roller compactor in order to *leave the surface hard and dry.*

The landing stripe has stabilized now to such an extent, that the C130 planes leave rubber tire marks on the runway surface where the aircraft wheels touch down and make contact with the runway.

Dust has been reduced significantly as well.

Tire marks on the runway where planes touch down



CONCLUSIONS

Unlike traditional hydraulic binders, **TERRA PLUS** is indicated for the stabilization of poor surfaces and for dust control on:

- CONSTRUCTION SITES
- REINFORCED SOIL STRUCTURES
- ROAD EMBANKMENTS
- MINES AND QUARRIES
- AGRICULTURAL ROADS
- BANKSIDE ROADS

TERRA PLUS can be applied just by using few millimeters per sqm according to the type of aggregate available on site.

TERRA PLUS can be applied with Pulvimixer, ground milling machine, grader, compactor roller, and barrel sprinkler, improving the daily production per sq. meter.

Furthermore, soils and aggregates treated with **TERRA PLUS** can be reused, since the product is environmentally certified.

Close up view of tire marks



For further information, please contact us at ecoroads@fullservice-it.com.

