

# TERRA PLUS

ECOFRIENDLY DUST STABILIZER



**STRABAG S.p.A.** has been successfully using our products for dust control and soil stabilization, i.e. **SOIL SEMENT NF69** and **ENVIROKLEEN**, in many of their construction sites. On the basis of the good

results achieved, they asked us to test **TERRA PLUS**, our latest ecofriendly stabilizer, in order to see if they could use it to replace standard hydraulic binders like cement and lime.

The test took place in **March 2016** at the “**PEDEMON-TANA**” construction site. **Three different aggregate types were treated:**

## TEST 1

Very compacted road base.

## TEST 2

Very compacted road base.

## TEST 3

Poor vegetating topsoil, ground level.



Tests 1 and 2 were made on the same road but with different aggregates and different application methods. Both treated areas were very compacted.

In **TEST 1**, the soil has been milled with Pulvimixer (depth: 20 cm), while spraying 8 mL of **TERRA PLUS** diluted in 2 L of water per sqm. After that, the soil has been milled once again with Pulvimixer in order to obtain the optimal mois-

ture rate in the aggregates. Finally, the aggregates have been with proper roller compactor.

In **TEST 2**, **TERRA PLUS** has been simply sprayed, always in the same quantity as in TEST 1. The wetting was performed in 5 different steps, in order to not saturate the soil. Afterwards the aggregates have been with proper roller compactor.

**TEST 3** has been taken on a very poor vegetal aggregate near to a farmland area, and it had almost zero bearing capacity.

The application method and the quantity of **TERRA PLUS** was the same as in TEST 1.

*Right after compaction of the aggregates, it was possible to immediately open the treated areas to traffic.*

## TERRA PLUS ECOFRIENDLY DUST STABILIZER

1. Soil milling (depth: 20 cm)



2. Spraying Terra Plus



3. Mixing aggregates with Terra Plus



4. Final compaction



After application of the product, treated surfaces were wetted (only with water) once a day for the following 5 days – except in rainy days.

Laying procedures were much quicker than when applying traditional binders, and load testing made before the application of the product showed that TERRA PLUS can increase the bearing capacity of poor soils.

AREA	AGGREGATE	CBR PRE-TEST	AFTER 24 H	AFTER 48 H	AFTER 10 DAYS	APPLICATION METHOD
TEST 1	A1b	231 Md(MPa)	120 Md(MPa)	150 Md(MPa)	200 Md(MPa)	PULVIMIXER
TEST 2	A1a	103 Md(MPa)	188 Md(MPa)	176 Md(MPa)	188 Md(MPa)	SPRAYING
TEST 3	A6	13 Md(MPa)	30 Md(MPa)	60 Md(MPa)	111 Md(MPa)	PULVIMIXER

## CONCLUSIONS

The most remarkable results were obtained in TEST 3, where the CBR value of the a vegetal soil (AASHTO Table 10006-A6) increased of 850% after 10 days, and in TEST 2, where the CBR value increased of 83% just by spraying the ecofriendly emulsion.

TEST 1 showed instead a decline of its initial CBR value - as the milled soil was already very compacted - but it is anyhow remarkable that the same value quickly increased in a few days, finally returning to its original state after few days from the treatment test.

TEST 2 > Spraying application of Terra Plus



The effectiveness of **TERRA PLUS** with poor aggregates and its quickness of application have been demonstrated by this test. Moreover, the test showed that it would be possible to stabilize up to 20.000 m2 of construction site roads in one day just by spraying their surface..

One further advantage of **TERRA PLUS** is that it is an eco-friendly certified product – which means that it is not considered hazardous waste, and that reutilization of treated aggregates is allowed.

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