

The Great Advantage:

TERRA-3000® can be used "in plant" pre-treatment of any soil mix "in plant" allows timely unlimited stockpiling of pre-treated material without any loss of effectiveness.

TERRA-3000® offers two ways to be used on the site:

"in place", with the in-situ soil, using a soil mixer for the application of the **TERRA -3000®**.

And "in plant", using any stationary mixer to pre-treat the in-situ soil or soil mixes and stockpile the material until weather conditions or the site allow to use it, simply by placing, levelling and compacting, and saving in this way a lot of time on the site – thus prolonging the actual construction season in the field.



One of the great advantages of **TERRA-3000®** is the possibility of pre mixing any in-situ soil or soil mix, stockpiling the treated material for unlimited time and still having the full effectiveness. Pre-mixing allows to use the bad weather periods to carry out jobs which otherwise could not be done, saving time in this way.

In quarries and gravel pits it becomes possible to compose by using any waste material in proper soil mixes that after treatment will always have the same quality parameters in respect of E-modulus or any other specification required. This offers a new range of ready-to-use products for the construction industry.

The specific character of **TERRA -3000®** will allow to recycle and upgrade waste material which otherwise would be costly in disposing the same, e.g. polluted material from road rehabilitation or the rehabilitation of railway tracks. Due to the fact that polluting ingredients can be immobilised by making the treated material impervious, it becomes possible to use such waste without the danger of harmful leakage.

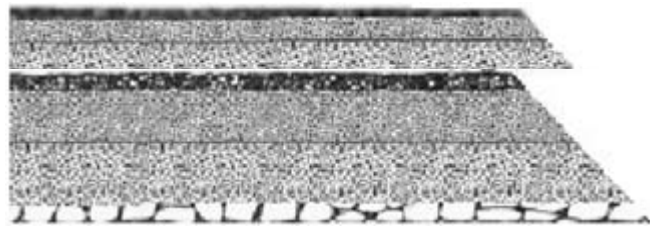
Pre-mixing has the great advantage that you become independent of the weather conditions:

- You can prepare the proper soil mixes, as found suitable ahead in your laboratory, taking into account the requirements of the site;
- You can mix even with higher moisture content which makes the procedure easier and respects the fact that the better the mixing process, the less additives are required. The quality of the mix can easily be checked and always remains on the same level.

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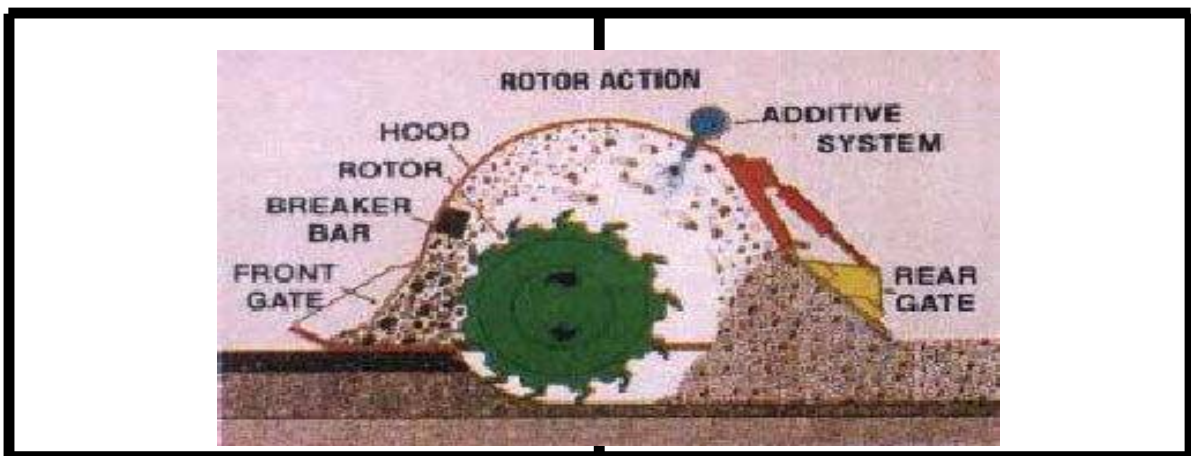
We recommend treated layers of 250 – 300 mm
 Where required due to the traffic 400 mm treatment will be the recommendation.



It is obvious that such differently treated layers can be built-in more accurately with pre-mixed materials than sub-base and base course layers and also allow to make optimal use of any saving possibility in the design of a construction.

The better the mixing, less additives are needed... and the better the results - therefore "in-plant" mixing can always be better than "in-place" mixing, but there exist machinery equipment which secure also "in-place" excellent results.

For the proper mixing into the soil professional soil mixer are required, because the better the mixing, the better the result and the possibility of saving costs if less additives yield the required result.



The FAE soil mixer, attached to a heavy tractor, can give excellent performance and will be the most economical solution, compared with self-propelled soil mixers, which cost several times more.

Equipment to be considered ...

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What machinery equipment is required for the proper application of **TERRA-3000®**?

This question is often presented - there is no difference to conventional soil stabilisation methods - **TERRA-3000®** must be applied in the adequate quantity and properly mixed with the soil or soil mix. What equipment is needed on the site when working with pre-mixed material?

Due to the fact that the application of the additives has already been done during the pre-mixing, you need the following equipment on the site:



The treated material has to be levelled with the GRADER to the proper layer thickness. This step is repeated if two layers as sub-base and base course are applied, with intermediate rolling.

If the pre-treated material is properly applied, it may be necessary to sprinkle water onto the layer to bring the moisture content close to the OMC. Then compaction starts, if possibly first by a sheepfoot or a tire roller, followed by intermediate levelling with the grader and final compaction with a flat roller. Now the road is ready for the wearing course on top.

What equipment is needed if **TERRA-3000®** is used "in place" with in-situ soil or for the rehabilitation of a worn road?

If the mixing process is carried out "in place", it needs more time than applying only the finally mixed material from a central mixing plant. In the following the single steps and the required equipment are described:



First of all the GRADER will rip off the in-situ soil and prepare it for the treatment.

If necessary, missing fractions have to be imported to give the in-situ soil better mechanical strength and density. The missing fraction can usually be borrowed nearby. Thus clayey soil will be added if the soil is too sandy or too coarse; sandy or coarse material will be added if the in-situ soil is too clayey, which is always combined with too high a shrinkage potential. The imported material will be levelled with the grader.

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The Application of **TERRA-3000®** is carried out with a special milling machine with automatically injection.



When applied, the additives will be inter-mixed with the proper professional SOIL MIXER - the better the mixture the better the result.



Cohesive soils should always be rolled with a sheepfoot roller to get the kneading effect, or a tire roller. For the surface use a flat roller.

TERRA-3000® can upgrade any layer in an embankment of a road or railway, e.g. sub-grade, sub-base or base course, but it should not be used as a wearing course.

WHY ? Soil remains soil, even if its properties have been dramatically improved. To achieve this improvement you have invested, it would be nonsensical to let the unprotected soil surface be ground away by mechanical abrasion. Sooner or later it will ruin your investment, which can so easily be protected by applying a WEARING COURSE on top of the embankment.

The WEARING COURSE can be:

- An asphalt pavement of 3-5 cm asphaltic hot mix concrete (long lasting)
- A thin reinforced layer of Portland cement concrete, (long lasting)
- A layer with paving stone of concrete or asphalt hot-mix, (long lasting);
- A double coating with asphalt emulsion, covered with small crushed stones (chips), (good solution and easy to repair if necessary);
- A sand seal, whereas an asphalt coating is covered only with sand (only 3 to 4 mm thick); (temporary protection);
- Application of any thin matrix of surface coating material for dust control, such as asphalt primer, copolymeric solutions in water, colorless coatings and similar applications (temporary protection but easy and cheap to renew).

Whatever is used prevents that the treated soil from being ground to dust and lost from polluting the surrounding, and saves the full value of the investment. Also the treated road will be safer, because cohesive soils, when becoming moist tend to produce a slippery surface.

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