



Stabicol® CE

Introduction

In addition to the roads paved with asphalt, most countries also have hundreds of kilometres of unpaved paths and dirt roads. These dirt roads are usually in nature areas, such as woods, in the dunes and on the heaths. The structure of paths varies from attractive, fine, yellow sand to grey, soil-like material. They fit in to their natural environment so that covering them with a layer of asphalt, for example, would detract from the surroundings.

Another problem, ruts, is caused by relatively heavy traffic such as cars and tractors. In wet weather this results in large puddles that make normal use of the road impossible. The manager of the road has to act to keep the dirt roads passable and this is a regularly occurring and costly business.



Maintenance

Managers of dirt roads often have problems with maintaining them. The dirt roads are also used by vehicles belonging to people living in the neighbourhood, by agricultural workers and by those who have to maintain the track as well as by walkers and cyclists. Dust is one of the commonest problems.

Stabilizing soil with Stabicol CE

One way of limiting the maintenance needed on dirt roads is to stabilize the soil. Latexfalt has developed Stabicol CE for this. This is an almost colourless, synthetic bitumen emulsion with almost the same properties as standard bitumen. The big advantage of Stabicol CE is that after mixing it with sand the natural colour of the sand is still left.





After mixing the emulsion has excellent adhesive properties to various minerals. The plastic and elastic character of the binder means that the final product can deform slightly, depending on the amount of emulsion used, and fewer puddles are formed because of the porous nature of the soil- Stabicol CE mix. Naturally, the porosity also depends on the type of soil or sand. Dust formation is kept to a minimum by the good adhesive properties.

The type of soil

The substance found on roads and paths in woods and dunes is generally called sand, but it usually is not actually sand but a mixture of sand, clay, chalk, humus and other organic materials. The amount of Stabicol CE required varies according to the difference in the drainage characteristics and the composition of the sand present. Soil samples must be taken and investigated before each project starts in order to determine the required dosage of Stabicol CE.

Semi-hard

Semi-hard surfaces, such as Gralux, can also be stabilized in the same way with Stabicol CE in order to reduce problems and maintenance.

Method of application

Mixing-in-place – The sand track can be simply loosened down to the necessary depth using a cutter. The depth required depends on how intensively the road or path is used and must be determined beforehand. The soil should then be moistened with water. The Stabicol CE is then applied and mixed with the layer using the same cutter. After that a roller can be used to seal the surface.



Mixing-in-plant – The sand supplied can be mixed with Stabicol CE in a mechanical mixer. The sand should be mixed in the mixer with water first and then the required amount of already stirred emulsion added. This liquid mass can be poured onto the surface directly without any other preparation. Because an emulsion is used it is better to carry out the work before the cold and wet season.



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Fixing sand

Stopping the erosion of sandy ground or dunes is another application of Stabicol CE. Sand is often used during construction work. This sand is usually delivered first in order to prevent stagnation during the construction work. This often means large heaps of loose sand, with sand blowing around in strong wind and causing a nuisance. Sand can get into houses with the resulting complaints from those living there and sand on the roads can lead to dangerous situations. This can be prevented by fixing the top layer without otherwise affecting the sand at all. Stabicol CE that has been diluted with water can be sprayed on so that the emulsion penetrates about 2 cm deep into the sand and binds the top layer.



This binding is sufficient to stop the wind having any effect while still leaving the material porous and it can simply be picked up and mixed with non-bonded sand to break the adhesive effect. Preventing sand erosion from dunes is also possible in this way. Spraying the sand with diluted Stabicol CE stabilizes the dune and prevents erosion.



Method of application

Fixing sand using spraying equipment – Sand heaps can be fixed by spraying on a solution of Stabicol CE that has been diluted 20 times with water. The emulsion is applied at the rate of about 1 – 2 kg/m². The emulsion penetrates sufficiently to harden a top layer of about 2 cm and this is sufficient to prevent the sand from blowing about. Because an emulsion is used it is better to carry out the work before the cold and wet season.



Appearance and lifetime

The surface is smooth after the emulsion has been applied. Depending on the type of soil the ruts that are characteristic of dirt roads will appear and will remain during frosty weather. These will recover by themselves during a following warmer period. The plastic and elastic nature of the mixture means that these ruts can be driven flat again without them crumbling away (the substance has the power of self-recovery). Experience so far has shown that a lifetime of some years can be confidently expected.

Environment

The emulsion does not contain any components that could result in any environmental regulations being exceeded provided that the product is used in the manner described.

