USE OF GEOTEXTILE FOR IMPROVING OUTDOOR SURFACES

Simple building (tent) with feeding area and watering place. The ground is reinforced with geotextile and gravel.

The ground is damaged from trampling by cattle.

Geotextile is easy to work with and very flexible.

This fact sheet explains how geotextile can be used to improve surfaces outdoors where the cattle move and feed in winter. By improving the surfaces, nutrient run-off is reduced and animal welfare is improved.

WHY USE GEOTEXTILE?

Geotextile is a cheap solution compared to concrete. It is easy to work with and very flexible.

WHERE TO USE IT?

On feeding areas outdoors

When feeding cattle in the same place outdoors during long periods of time the ground is damaged. Manure, urine, mud and waste from hay and silage causes a mess of slurry in which the cattle have to stand when they are eating. Geotextile with a protective layer of gravel can be used to solve this problem (see figure on next page).

On cattle pathways outdoors

Pathways outdoors which are used frequently by cattle, especially in the winter, get muddy and damaged. Various kinds of geotextile can be used to protect the ground.

Around watering places

Around watering places a mess of mud is usually created. It would be much cleaner if the geotextile was used around them. An area of about 10 x 10 m, with the watering cup in the middle is sufficient.

HOW DOES THE GEOTEXTILE FUNCTION?

The geotextile will separate the underlying soil from the surface at the same time as rainwater is able to penetrate into the ground. The waste that accumulates from feed and manure needs to be taken away from the eating area occasionally and placed in a manure handling system.

Geotextile can be used as a one-layer protector. In this case the ground is covered with geotextile on which a layer of up to 10 cm of sand and gravel is placed to protect the textile.

Geotextile can also be used as a two-layer protector. In this case the construction is as for the one layer protector but with the addition of a net covering the geotextile.

A third possibility is to build up the ground. The geotextile is spread out on the ground on which a layer of about 15 cm of base course gravel is spread out and vibrated. The geogrid is then placed on top of this gravel. Finally another layer of about 20 cm of base course gravel spread out and vibrated. This alternative requires more work but the result is better.

DIFFERENT GEOTEXTILES

Geotextile is made of polypropylene. There are a number of qualities of geotextile for different purposes and for different carrying capacities. The carrying capacity is classed from 1–5, where 5 has the highest carrying capacity. The width of the geotextile is about 5 meters and the length about 100 meters.

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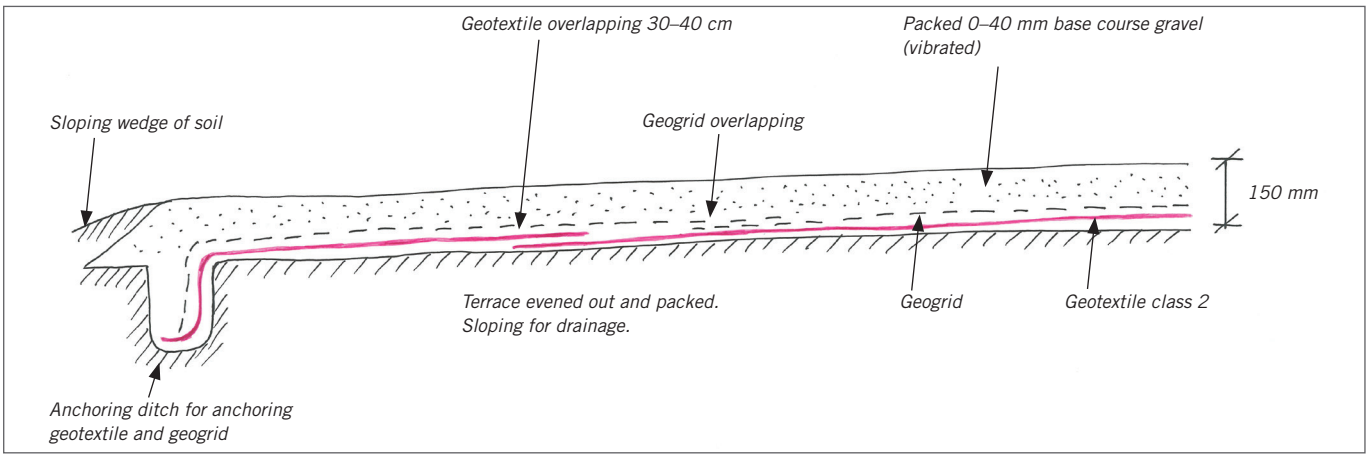

Figure: Reinforcement of ground for cattle feeding area, drinking places and paths

Geotextile and geogrid stops under laying soil from pushing up into the surface layer of sand and gravel when cattle trample on the area. Geotextile is spread out on an even area. On top of the geotextile the geogrid is laid out to reinforce the ground.

To anchor the edges of the geotextile and geogrid a ditch is dug where the edges are folded down.

A cattle pathway where the ground has been reinforced with geotextile.

READ MORE

H. von Wachenfelt (2011). Performance of geotextile - gravel bed all-weather surfaces for cattle. *Research Swedish University of Agricultural Sciences.*

L. W. Turner et al (1997). Using geotextiles for feeding and trafic surfaces. *University of Kentucky, USA.*

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