STABILISED SOIL SURFACE (SURFACE OPTION No. S 04)

DESCRIPTION

Weak or problematic soils can be modified insitu by stabilisation to improve their properties and ability to carry traffic throughout the year. The stabilised soil can support light traffic in some circumstances without surfacing.

Stabilisation options include adding cement, lime, or various chemical additives to modify the properties of the insitu soil, or bind the soil particles together. Mechanical stabilisation involves mixing in particle sizes that are lacking in the insitu soil. Stabilisation can be carried out using single axle tractor rotovators, 2 axle tractor mounted rotovators or specialist rotovating equipment. The stabilised soil is then shaped, and compacted using appropriate equipment and at a suitable moisture content.

If not surfaced, a camber (crossfall) of about 3 - 7% should be provided to the stabilised and compacted soil, falling away from the road centre line to disperse rainwater sideways. Side drainage must be provided to ensure rain water flows away from the road. Alternatively the level of the road should be raised above surrounding ground on embankment.

Stabilised soil is also often used as a sub base or road base, covered with one of the other surfacing options.

ADVANTAGES	DISADVANTAGES
❑ Low cost surface option for basic access. ❑ Suitable surface for light traffic and low flows. ❑ Utilises the in situ material. ❑ Can be constructed by labour and simple, low cost equipment. ❑ Relatively easy to maintain using labour or simple, low cost, grading equipment. ❑ Can be used as a road base or sub base, or as an intermediate surface in a planned and resourced 'stage construction' strategy.	❑ Only appropriate for light traffic as a surface. ❑ Stabiliser MUST be matched to the in situ material characteristics (e.g. generally cement for sandy soils and lime for clays). ❑ Cement stabilisation must be carried out within tight time constraints. ❑ Requires good site quality control to ensure good, thorough and consistent mixing, and timely and appropriate compaction. ❑ Some products are sold for inappropriate applications. ❑ The high cost of some imported stabilisation products makes other options more cost effective. ❑ Workers should wear appropriate protective clothing. ❑ High maintenance surface requirements (but often less than gravel in financial terms). ❑ Rain water surface erosion on gradients.

