

EnkaMat® Erosion control

Handling and installation guidelines

EnkaMat on dry slopes of embankments and earth structures

EnkaMat functions as a protective reinforcing and integrated intermediate layer between natural vegetation and soil. Using proper seeds and fertile topsoil vegetation will establish. Planting root systems are integrated in the special mat structure, given a strong resistance to erosion at slopes.



Product description

EnkaMat is a three dimensional polyamide mat with an open structure. It prevents erosion on embankments, slopes and river banks, canals and reservoirs.

Areas of application, foreword

To achieve maximum performance and avoid damage of the EnkaMat material basic installation procedures should be respected. Correct handling of the product on site and during installation is of great importance. This manual gives guidance and recommendations to the installer of this product to ensure that long term performance is secured. Please inform your contact from Low & Bonar directly to get technical assistance in case any deviations to the described steps below.

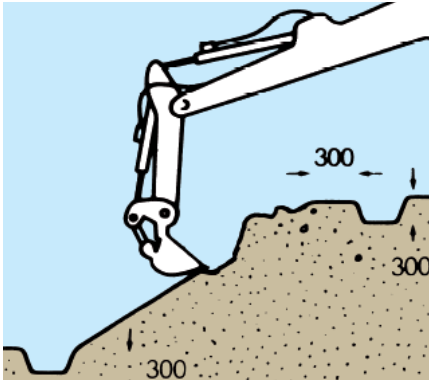
The information in this instruction reflects the experience gathered over time by Low & Bonar. The actual installation procedure must be aligned to fit to site-specific circumstances and available working equipment.

Transport, storage and handling

The rolls are packaged for normal transport and offers sufficient protection against normal weathering impact. The rolls must be handled with care during unloading and transport on the construction site:

- the rolls of the product must be stored on a dry, clean and even surface;
- the stack of product should not be more than four rolls high, and they must not be burdened with any additional loads;
- the package should be opened only before the immediate use of the material;
- large rips or torn areas of packaging foil should be covered.

Installation steps of EnkaMat

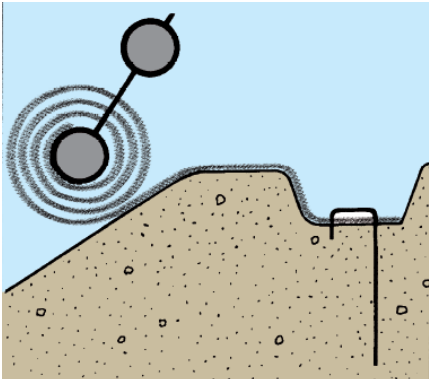


1. Excavation

Excavate the slope to as smooth profile, free from vegetation, roots, stones, etc., filling any voids. The slope must be stable and properly compacted, in particular in the backfilled areas. Excavate anchor trenches at the toe and shoulder of the bank not less than 300 mm deep. If the soil is of poor quality, the surface layer should be improved by the inclusion of well compacted top soil.

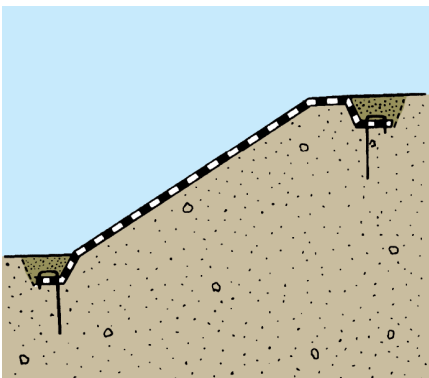
Important:

EnkaMat is an erosion control material, and will not increase the internal stability of unstable slopes.



2. Laying

Place the matting in either trench, pin at 1 meter centers, unroll EnkaMat and slightly tensioned. EnkaMat 7220 and 7210 should be laid flat-back down. Work either from the shoulder down or from the toe up; we advise against longitudinal installation on steep slopes. Cut to the length required with a sharp blade and pin at 1 meter centers into the other trench.

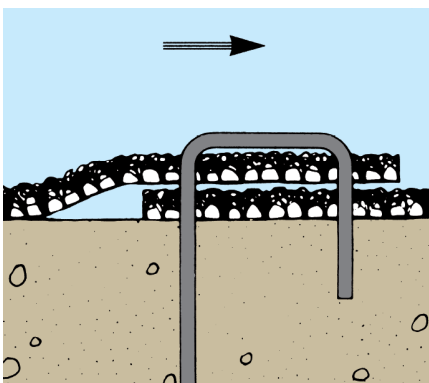


3. Trenches

Backfill the anchor trenches and compact.

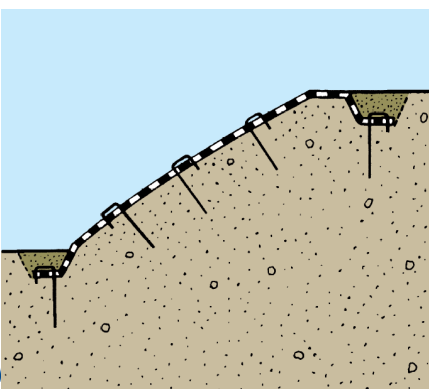
Important:

Concentrations of surface water run off should be prevented from flowing over the newly laid slope either by a small bund along the shoulder or diversion through gutters or pipes laid on the slope.



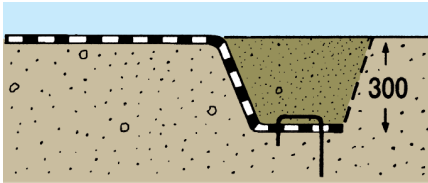
4. Securing of overlaps

In watercourses overlaps of 150 mm min. should be made with the upstream section laid over the downstream section. All overlaps should be pinned at max. 1 meter centers; in severe conditions additional pins at 500 mm centers are recommended. Particular attention should be paid to pinning at water level. On dry slopes overlaps of 100 mm are required.



5. Intermediate pinning

It is essential to ensure total contact between EnkaMat and the underlying soil. Intermediate pinning at regular intervals is required at high loadings. An ideal slope will be slightly convex. A concave slope should be pinned on a 1 m grid. Normal intermediate pinning would be at a rate of 1 pin every 2-3 m².

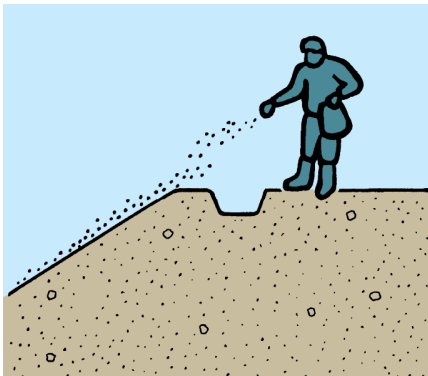
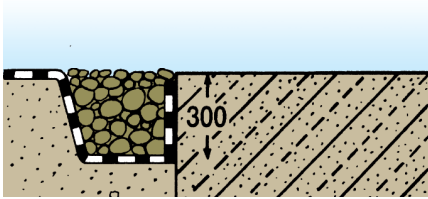


6. Securing the edges

Free edges, for example the upstream side of the mat, should be adequately secured; the connection to hard revetments or structures requires special attention. See overleaf for alternative details.

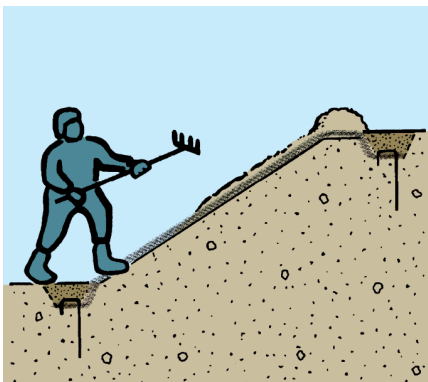
Important:

Intermediate pinning of the matting into any low spots should be carried out to ensure total contact between EnkaMat and the soil below. However, it is best to backfill or re-profile all such low spots or voids.



7. Seeding

Seed the empty EnkaMat area above normal water level with 20 g/m² of suitable indigenous seed, and plant rhizomes or aquatic plants below normal water level (or spread some soil containing rhizomes prior to laying the EnkaMat). 2/3 of the seed is to be placed into the open mat, the remaining 1/3 is to be sown on top of the finished profile.

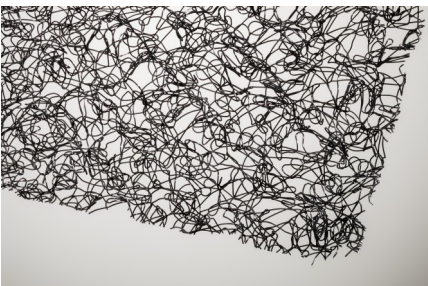


8. Topsoil filling

Rake in friable top soil to give a cover of 10 mm to 20 mm over the EnkaMat. Stone chippings should be considered where EnkaMat is to be permanently submerged or subjected to high water velocities (approximately 15 kg/m² of 2-6 mm angular gravel to be raked in prior to top soil filling of the upper section). The recommended soil cover results in optimum filling of the mat after natural compaction.

Hydroseeding can be applied in addition to the the normal use of the product. The seed mix selection and slurry composition should be determined by seeding experts, taking into account the local climate, slope exposure and subsoil conditions.

Product picture



EnkaMat® 7010, 7018, 7020, 7210, 7220

EnkaMat is a strong, three dimensional mat with an open structure, made from high quality polyamide (PA) monofilaments which are welded where they cross. It is available in thicknesses up to 20 mm.

China +86 519 6858 5555
France +33 1 74 90 00 13

Germany +49 6022 812020
Hungary +36 23 610 870

The Netherlands +31 85 744 1300
USA +1 800 365 7391

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