



*Shaping
the future* MORE GREEN
MORE LIFE

TERRAM Geocells

The honeycomb structure made of high-strength, fully water-permeable TERRAM geotextile enables a flat, root-friendly base layer in path construction, thereby preserving existing greenery during construction projects. Soil reinforcement using a root bridge serves to distribute traffic loads, thereby providing long-term protection for the underlying roots and preventing soil compaction in the root zone.



The base course construction using TERRAM geocells significantly reduces the amount of soil excavation and material required. By conserving resources, minimizing environmental impact, and reducing construction costs and time, this practical construction method is sustainable, environmentally friendly, and cost-effective. This makes this construction method suitable for the construction and rehabilitation of traffic areas, such as sidewalks, bike paths, or parking lots, as well as for temporary use as construction access roads.

This product—specifically, the root-friendly construction method used in urban path construction—was awarded the Innovation Medal for sustainable and environmentally friendly construction by the GaLaBau Trade Association.



**FURTHER
INFORMATION**



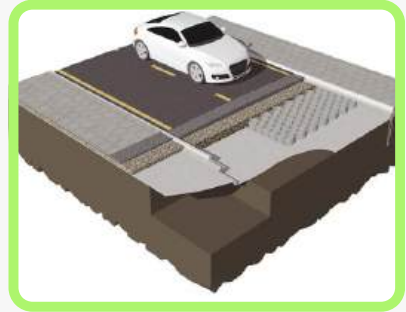
One product - many uses

TERRAM geocells offer an effective, cost-efficient, and nature-friendly solution for road construction and erosion control. When installed horizontally, they are ideal for base courses, root bridges, or construction access roads. The honeycomb system effectively distributes point loads, thereby protecting the subsoil. When used for slope stabilization, TERRAM geocells provide protection against erosion without hindering slope revegetation or rainwater infiltration.



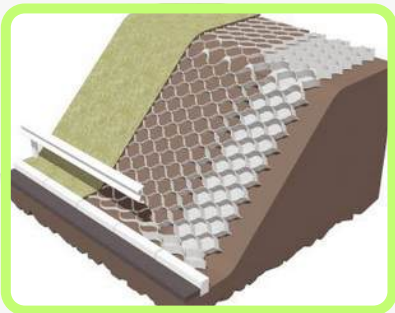
Root protection

Preserving existing green spaces without significantly disrupting nature



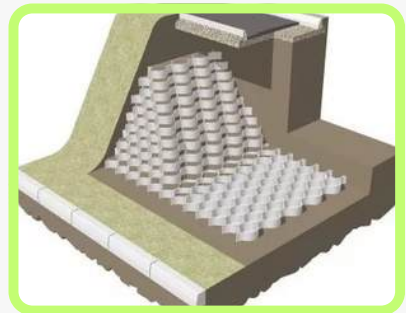
Base layer

An even base layer structure with maximum stability



Erosion control

Permanent erosion control and slope vegetation



Support structure

Reinforced soil for stabilizing steep slopes

Advantages of TERRAM Geocells



Close to nature: By avoiding invasive construction measures, CO2 emissions are reduced.



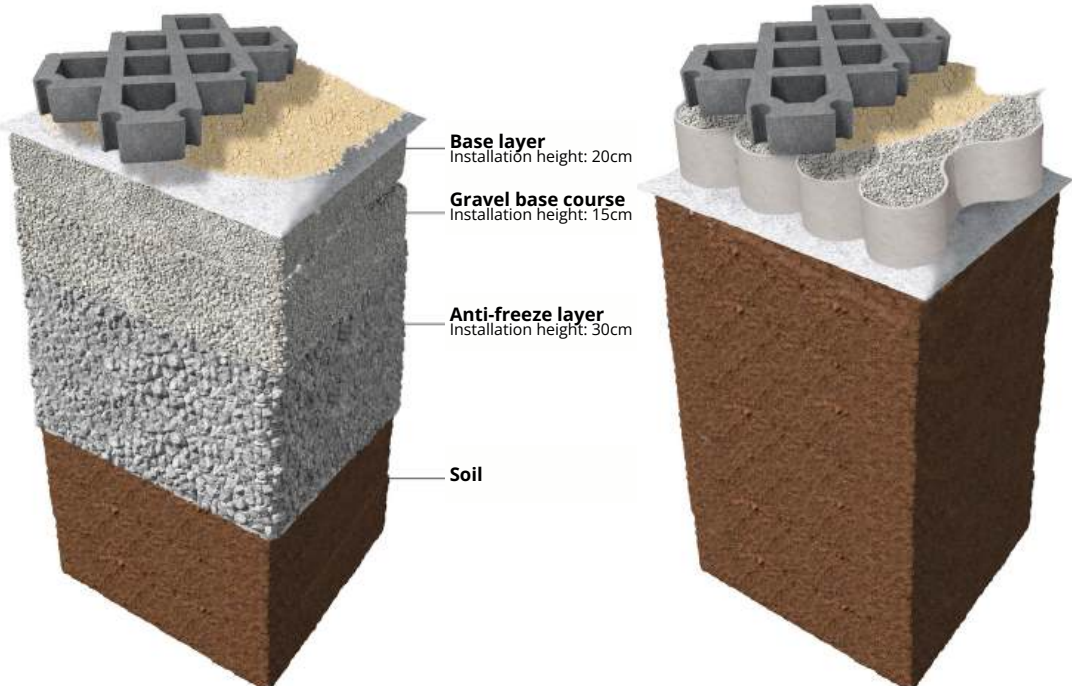
Construction time: The minimal amount of work required results in a shorter construction time



Material costs: Nearly 70% less material is required.

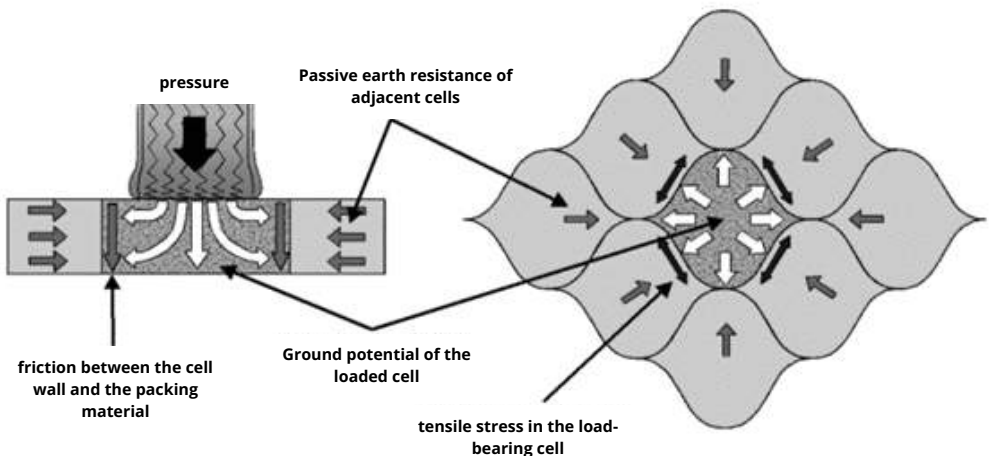


Construction costs: The low material requirements and short construction time minimize the total costs.



Functionality

The compressive load exerted by traffic movements on the base course reinforced with TERRAM geocells causes these vertical stresses to be transferred horizontally through the cell structure. The cell walls prevent the fill soil from expanding laterally under load. This significantly increases the system's dimensional stability and load-bearing capacity compared to unreinforced soil.



Due to the high mechanical strength of the TERRAM material, the deformations caused by vertical loads are restrained by the distribution of ring tensile forces within the cell structure and the passive earth resistance of the adjacent cells. The ring tensile forces activated by compressive loads result in a stabilizing cohesion of the composite system consisting of fill soil and TERRAM geocells, creating a structure with high dimensional rigidity (rigid slab). According to structural calculations, the stiffness of a base course reinforced with TERRAM geocells is approximately twice that of an unreinforced base course.

Settlement behavior

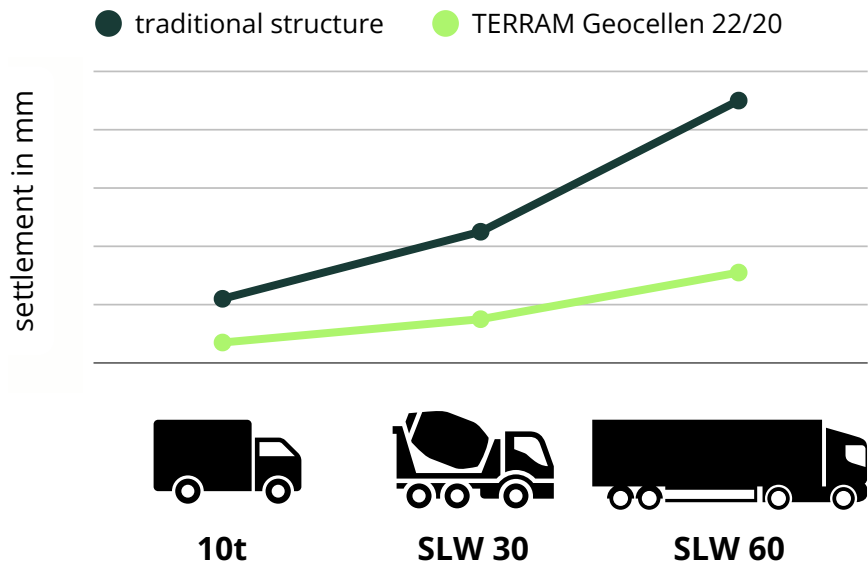
Typically, for construction roads intended for temporary use, 30 cm of loose gravel is spread and compacted to reduce the compressive loads on the underlying soil. Regular use by heavy vehicles causes the gravel beneath the wheel load to be pushed aside laterally. This results in deformations in the construction road and settlement in the subsoil. When construction roads pass through or along existing green spaces, the root zone becomes compacted and tree roots are damaged.

Heavy steel plates are often placed on top of the gravel base to increase structural rigidity and reduce the impact on the underlying soil. However, due to limited availability and logistical challenges, these steel plates are not very practical for real-world applications.

In comparison, construction roads and sites can be built using TERRAM geocells with a structure height of 20 cm. Thanks to the properties of the honeycomb structure, the fill material (gravel) within the cells is compacted and stabilized by the cell walls. This prevents lateral deformation under the pressure loads of construction vehicles and achieves high dimensional rigidity with a low installation height. This construction road distributes vertical stresses over a large area and significantly reduces settlement in the subsoil. This construction method saves on building materials. The geocell construction road can be dismantled, and the geocell elements used can be reused.



Comparison settlement construction roads



* Using a single layer of 22/20 TERRAM geocells significantly reduces overall settlement. The values represent the behavior of a typical soil after $\geq 10,000$ vehicle passes.



Successful projects

Throughout Germany, our geocells protect roots, preserve urban green spaces, and stabilize areas. Discover a selection of our projects featuring TERRAM geocells.



Euroroute R1

Many sections of the Euroroute R1 need to be replaced due to wear and tear. The goal: a sustainable solution to protect roots on forest trails and prevent cracks in the trails caused by root expansion.



Fire department Friedeburg

The Friedeburg Fire Department's grounds needed to be expanded. To carry out the construction project, large trees had to be cut down to make room for the new roads.

Surftown Munich

At o2 Surftown near Munich, Europe's largest surf park, our TERRAM geocells provide stable and sustainable slope stabilization across an impressive 1,500 m².



School campus Nuremberg

TERRAM root bridges were used to create parking spaces on the school grounds. They were also used to stabilize the subsoil beneath the running track on the sports field, which had low load-bearing capacity.



Logistics

TERRAM geocells are folded up and shipped in a space-saving manner

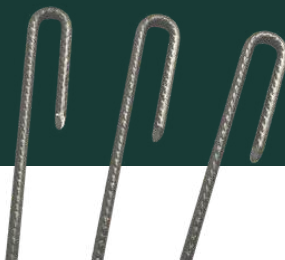
PRODUCT INFORMATION

Order no.	Type	Cell-Ø	Height	Size	Area
155668	22/20	220 mm	200 mm	3 x 6m	18 m²
155670	22/20	220 mm	200 mm	4,5 x 10m	45 m²

SUPPLIES

Mounting hook

Order no.	PU
051038	50 pcs.



Thank you very much for your attention and interest in our products.

Do you have any other questions? We're happy to assist you by phone, email, or on our social media channels.

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