

TABOSS

POLISH MANUFACTURER OF GEOSYNTHETICS

Roads



Erosion control of slopes




Water reservoirs



Amphibians protection



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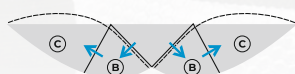
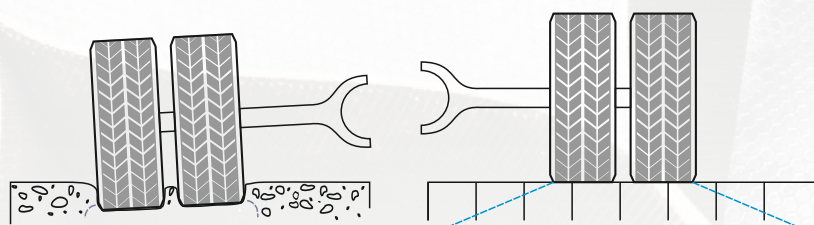


ROADS, PARKING LOTS, FOUNDATIONS

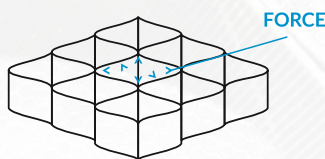
Increased population densities in the 21st century have resulted in an expansion into areas with low-bearing soils, requiring the use of geosynthetics to reinforce and stabilize them. Weak and unstable soils (peat, silt, loess-like) are the basic technical problem for the construction of significant infrastructural elements such as permanent roads, railroads and other communication facilities. The concept of enclosing backfill construction materials inside a lightweight, spacious, flexible, yet optimally strong geosynthetic, such as a cellular geocell, enables a new approach to the design and implementation of structures for soil stabilization and reinforcement.



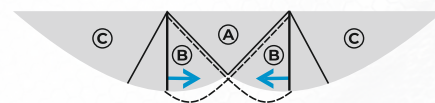
The geocell we have been producing since 1999 is made of ultrasonically bonded polyethylene strips. After unfolding it forms a spatial structure that stabilizes, strengthens and stiffens the structural backfill compacted therein. This is possible due to the phenomenon of soil compressibility and the characteristics of a cellular geocell (where the peripheral strength of cells and the passive resistance of filled adjacent cells prevent soil deformation in adjacent cells in a way that prevents their displacement under force)



Without geocells system soil deforms when A area moves to B and C areas.



Spread of limiting force



Geocells system prevents soil deformation limiting B area in a way that prevents their displacement under force.

TABOSS geocells are manufactured on production lines designed by our engineers using American DUCANE ultrasonic welders. To meet market demands, we have expanded our range from three to six standard cell sizes (340 mm; 380 mm; 440 mm; 530 mm; 680 mm and 880 mm weld spacing). In addition, they can be manufactured in five variations of strip thickness, and a height range from 2.5 to 30 cm.

At the same time, thanks to semi-automatic welders developed at TABOSS, we produce geocells of non-standard dimensions. This results in great flexibility in meeting the needs of our customers, especially when it comes to optimizing waste costs and installation efficiency.

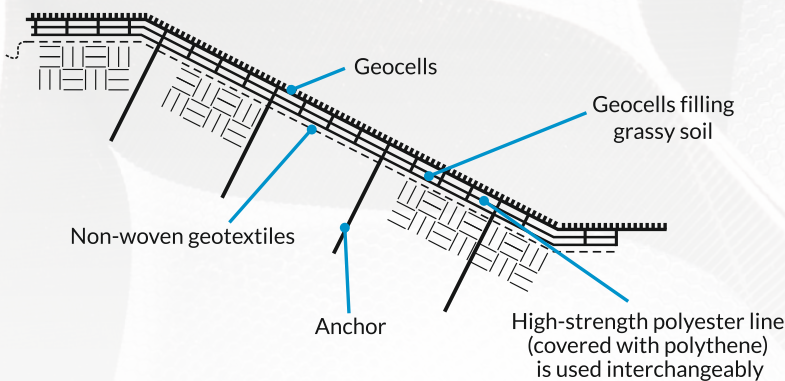
An important advantage of strips used to manufacture TABOSS geocells is above-average puncture, abrasion and elongation strength, while maintaining high elasticity. This is possible through the use of proven and perfected over the years, special mixtures of raw materials HDPE, LDPE, PE.



EROSION CONTROL OF SLOPES

In the process of erosion control of slopes and ditches, the soil filling the cells is held in place by their walls, which form a series of mini valves. Geocell sections, connected in a patented and unique way, provide protection for slopes and hill-sides. Thus, the development of runoff streams, produced by concentrated surface runoff crossing the ground, is inhibited. This mechanism reduces the velocity of water flow, which consequently also reduces the value of the erosive force of surface runoff. The application of TABOSS System® means obtaining resistant and durable protective covers even in case of steep slopes and ditches.

Based on our 20 years of experience in designing and construction of slopes covered with vegetation, where geocells close and reinforce the green layer, we recommend TABOSS II or BasicNET geocells. Cells increase the natural resistance of vegetation to erosion and protect the root zone from loss of soil particles. For slopes not covered with vegetation, geocells improve the erosion resistance of granular materials. Hydraulic energy is dissipated and individual soil particles do not move downward because they are protected from destructive gravity forces and downward displacement. If it is not possible to insert pins, we design wire protection and offer dedicated products such as ATRA-CLIP.



SLOPES PROTECTION IN GEOCELLS SYSTEM SUSTAINS VEGETATION (GRASS)



Features	Tested acc.	Unit	Geocell Type-A TABOSS Tec	Geocell Type-B TABOSS II	Geocell Type-C TABOSS BASICnet	Geocell Type-D TABOSS EconomicNET	Geocell GeoQuib
Strip thickness		mm	1,5 ± 0,2	1,5 ± 0,2	1,4 ± 0,2	1,2 ± 0,2	1,5 ± 0,2
Tensile strength kN	PN ISO 10319	kN/m	30.00 (-1.0)	25.00 (-1.0)	21.00 (-1.0)	18.00 (-1.0)	25.00 (-1.0)
Tensile strength, perforated material, 60%, kN	PN ISO 10319	kN/m	18,00 (-1.0)	15,00 (-1.0)	12,60 (-1.0)	10,80 (-1.0)	15.00-17.00 when connecting
Elongation under maximum load	PN ISO 10319	%	51.30 (±10)	51.30 (±10)	51.30 (±10)	51.30 (±10)	30.00 (±10)
Shearing strength, kN	PN ISO 10321 PN ISO 13426	kN/m	26.00 (-1.0)	22.00 (-1.0)	22.00 (-1.0)	18.00 (-1.0)	22.00 (-1.0)
Breaking and abrasion strength, kN	PN ISO 10321 PN ISO 13426	kN/m	28.00 (-1.0)	21.00 (-1.0)	18.00 (-1.0)	16.00 (-1.0)	21.00 (-1.0)



RESERVOIRS AND DRAINAGE DITCHES

By using cellular geo-mesh, the unique properties of water structures can be designed and fully utilized. This is possible by filling the cells with various materials, such as soil, aggregates or concrete. This allows the type and weight of fill to be tailored to the design of the reinforcement, hydraulic, structural, and geotechnical conditions. Geocells offer countless types of flexible protection for open watercourses and water structures. The system provides stability and protection to channels subject to erosive forces.

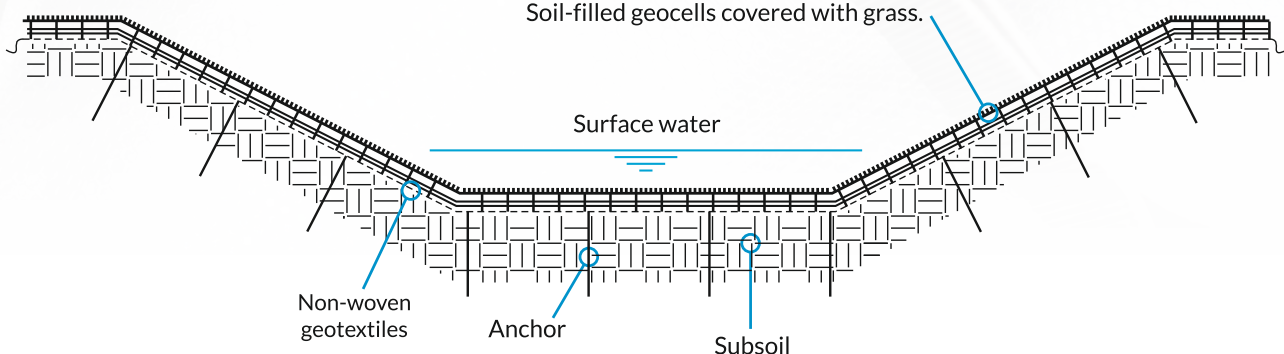
Protecting channels with geocells gives a cover of strictly defined roughness and stability. For ditches with sporadic flow and a longitudinal gradient of up to 2%, cells filled with humus and seeded with grass are perfect. For steeper sloping ditches, cells filled at the bottom with bedding material are ideal. On mountain ditch slopes, on the other hand, it is recommended to fill all cells with 63-100 mm hydro aggregate. Concrete fill, however, is recommended for areas with continuous flow or high water velocity.

The cover created by geocells increases natural resistance by encasing and protecting the root zone of the vegetative layer. This consolidates and reinforces the vegetative layer when water flow is strong, directing it over the structural layer.



Periodic water flow streambeds

Protective channels in the geocells system.
Soil-filled geocells covered with grass.





GREEN PARKING LOTS

Minitabo geocell is a product that for over 12 years has been balancing high durability requirements with the desire to preserve the natural character of the developed surface. It is perfect for extensive green areas, driveways, access roads, parking lots, embankments and sidewalks, walkways and is manufactured in two cell sizes: 220 mm (diagonals of 12 cm x 16 m) and 280 mm (diagonals of 20 cm x 29 cm).

MINITABO grids are an alternative to “heavy” (physically and optically) concrete paving slabs, concrete openwork panels, hard plastic grating, asphalt and other types of paved surfaces. Once grass is seeded or another fill is applied, the grid becomes invisible. This allows designers and investors to take full advantage of the aesthetic qualities of natural pavement, designing areas with variable color or texture. Such a surface is at the same time highly resistant to mechanical damage – driving, wiping and trampling.

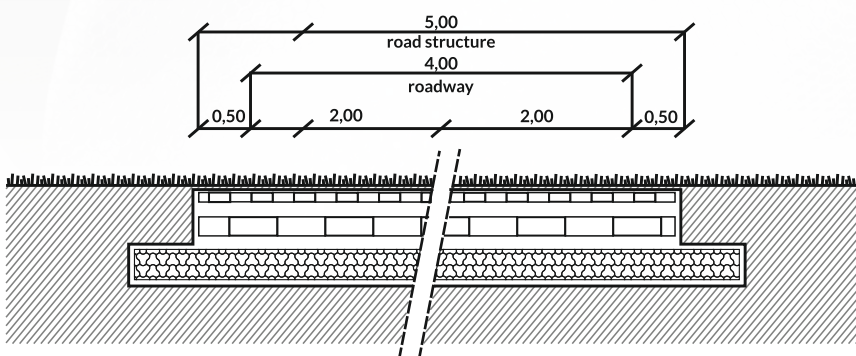
MINITABO also provides 100% biologically active pavement. This allows lawns, reinforced with a grid, to be irrigated and fertilized without difficulty. As a result, they develop perfectly and the even surface facilitates care (rolling, aeration, verticulation, cleaning of fallen leaves, reseeding, raking, removal of weeds, removal of so-called felt), which is not possible with similar products available on the market. The material of which the MINITABO grid is made, is neutral for the environment and resistant to weather conditions (moisture, extreme temperatures). Its material is fully recyclable granulate (HDPE) from recycled sources.



Fill examples

The most common type of filling in the MINITABO grid system is grass and mineral and organic materials – grit, gravel, sand, sawdust, shredded bark. The variety of filling variants gives the possibility of an effective, original arrangement of the area – in terms of colors and surface type. The only limitation in this case is the imagination of the designer and investor.

EXECUTION OF GRASSY ROAD



- 2,0 cm - mechanically stabilized layer of hummus and sand mixture 2:1, which makes up a surplus of filling mixture in the TABOSS geocell; made together with the filling of the geocell; density indicator Is . 1,0
- 5,0 cm - a textured MINITABO geocell with the 12,5 x 16,5 cm cells; height of 5,0 cm, filled with mechanically stabilized layer of hummus and sand mixture 2:1, which protects grassy road against rutting; density indicator Is . 1,0
- 3,0 cm - layer of mineral aggregate (sandy gravel or sand) of the 0/31,5 mm fraction, which makes up a surplus of filling mixture in the TABOSS geocell; made together with the filling of the geocell; density indicator Is . 1,0
- 10,0 cm - a textured and perforated TABOSS-100 geocell with the 21 x 25 cm cells, height of 10,0 cm, filled with mineral aggregate (sandy gravel or sand) of the 0/31,5 mm fraction; density indicator Is . 1,00
- 15,0 cm - separation and filtration mattress of the mineral aggregate (sandy gravel or sand) of the 0/31,5 mm fraction, stabilized mechanically; density indicator Is . 0,9. StradomGeo-24 geotextile mattress reinforcement.



SYSTEM PROTECTING MIGRATION OF AMPHIBIANS AND RODENTS

Another product of our company are FROGsystem® protective panels used in order to achieve appropriate ecological effectiveness, i.e. protection against reptiles and amphibians. They are especially recommended at the locations of passages for small animals and amphibians. The use of FROGsystem® product guarantees tightness between the mesh and large objects (overpasses, bridges).

Our panels have been used, among others, in the following highway sections: A1 contractor Budimex - Dromex; A1 Dragados; S69; S1 and A4.

The use of FROGsystem® elements is aimed at reducing amphibian mortality (on roadways and in anthropogenic traps) and increasing the effectiveness of amphibian use of animal passages. The system was developed jointly with the staff of the departments of the General Directorate for National Roads and Motorways and the University of Life Sciences. Our protective and guide fences effectively protect all species, at every stage of crossing the ecological barrier resulting from the presence of a road. Also, by using an innovative HDPE bonding profile, we ensure 100% bonding of the panels during periods of varying temperatures. Another innovation in effective animal protection is the ability to perforate the underground portion. This allows the grass roots to grow freely, resulting in an additional connection to the ground, increasing the rigidity of the entire structure and protecting against theft.

The production technology allows the system to be modified and adapted to the individual needs of the customer. It is possible to make the panel in a version protecting only against migration of amphibians and reptiles, or only in a version preventing mammals from undermining the fence.

As a dedicated product, we also manufacture Stop-Gutters that connect to our fences in a systematic way. Produced elements are tailored to the requirements of the customer grating load capacity to D250 and a gutter width of 50 cm.



ELEMENT FROG ST-50

