



MOSOLUT
SMART FLOORS



Mosolut EASYGRID

Grassing and parking paving

SPECIFICATIONS OF THE PAVING SYSTEM



Grassing and parking paving

Mosolut EASYGRID

Mosolut EASYGRID parking and grassed paving forms an effective permeable paving system that is durable, functional and compliant with SUDS procedures (Sustainable Drainage Systems). The construction consists of a simple plastic grid designed as a surface solution for grass and gravel.

Mosolut EASYGRID porous tiles are bonded with an interlocking structure and installed on a compacted base layer. Their roll is to transfer the load from the surface to the treated substrate.

Mosolut EASYGRID porous paving with infill grass or gravel can be an effective solution for:

- Minimizing the amount of water runoff
- Improving water quality
- Providing clean water for nature and biological diversity

USES

- Permanent and busy parking lots
- Access roads, cycle paths and footpaths
- Access roads for emergency and freight vehicles



BENEFITS

- SUDS compliant. Mosolut EASYGRID porous paving with grass or gravel can improve the BREEAM and Codex compliant rating of projects
- Code for Sustainable Homes.
- Once laid, Mosolut EASYGRID offers excellent water permeability surface. It reduces the potential for clogging compared to a concrete paving system.
- A durable, non-rotting, weatherproof solution. 2 year warranty
- Lightweight interlocking profile design allows for easy and quick installation.
- Load capacity 500 tons/m², on a properly prepared and compacted subsoil.
- Low maintenance and cost effective over the lifetime of the product.
- Made from 100% plastic waste, that might otherwise end up on landfill. Mosolut EASYGRID reduces the carbon footprint of the project. At the end of the end of the product's life, it is fully recyclable.



Basic technical parameters

MATERIAL

100% recycled plastic

DIMENSIONS OF THE PAVING PART

500 x 500 x 40 mm
- 4 blocks per m²

WEIGHT

500 tun/m² with fill, on properly prepared and compacted subgrade

TYPE OF CONNECTION

interlocking, T-shaped

BOX PROFILE

62 x 62 mm internal
Average 86 % open cells/m²

COLOUR

černá

SURFACE FINISH

gravel or grass

WEIGHT

8 kg/m²

PROCESS OF MANUFACTURING

The polymer is mixed under high pressures and inserted into moulds



Parking and grassed paving Mosolut

The following information is provided as a general guide in accordance with BS7533. Further details on pavement permeability are governed by the standard BS7533 Part 13; for installation thereafter, see BS7533 Part 3. pavement design should primarily satisfy two functional types of implementation - to withstand traffic loads and to provide effective drainage of surface water.

Subgrade assessment

The strength of the subgrade shall be measured using the Laboratory Determination of Bearing Ratio. The design CBR should be

obtained by either testing, or by measuring the plasticity index of the subgrade material. In the case of CBR testing, the method described in BS1377-4 should be used: 1990 + A2: 2002, Chapter 7. The table below gives typical values for subgrade strength (CBR).

Detailed subgrade preparation should be in accordance with the recommendations in BS7533-3. Suitable subgrade should be free from soft spots and at the same time level. A levelling layer is necessary where, where the soil is structurally weak and subject to exceptional load, or does not meet the conditions for ideal functionality of the intended system.

Table 1. Soil classification guide

Soil classification	Typical range for permeability coefficient, k (m/s)	Typical range of CBR values in conjunction with Table 2	Plasticity index
Heavy clay	10 ⁻¹⁰ to 10 ⁻⁸	2 to 5	40 to 70
Clay soil	10 ⁻⁹ to 10 ⁻⁸	3 to 6	30
Clay loam	10 ⁻⁹ to 10 ⁻⁶	5 to 20	10 to 20
Sand of inferior quality	5 x 10 ⁻⁷ to 5 x 10 ⁻⁶	10 to 40	-
Sandy loam soil	5 x 10 ⁻⁶ to 10 ⁻⁴	10 to 40	-
Stony sandy soil	10 ⁻⁵ to 10 ⁻³	30 to 80	-

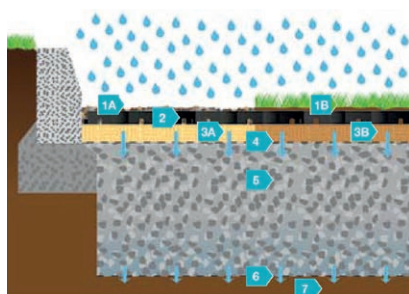
Permeable tiles Mosolut EASYGRID

Permeable flooring MOSOLUT EASYGRID absorbs up to 180 liters per second per hectare. It can therefore be an effective option for securing any terrain both for movement and stationing of vehicles. At the same time, it allows for water to pass through the surface

directly in the road structure, and it supports temporary capturing of water facilitating the weathering of heavy rains. Subsequently, it contributes to an even distribution of the accumulated water into the ground. There are three types of permeable flooring systems:

1. COMPLETE INFILTRATION SYSTEM

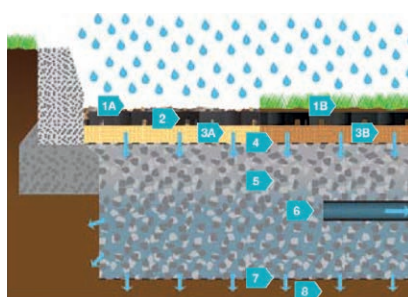
Suitable for existing foundation with good permeability. The system allows for all water that falls on the surface to pass through into the layer underneath. A temporary capturing of water occurs in the basic layer, which leads to a momentary pause before the flow continues. There is no water being directed to drainage systems, and the need for pipes and sewers is entirely eliminated. Thanks to this feature, this flooring is a particularly economic solution.



- 1A** Gravel
- 1B** Grass
- 3** Mosolut EASYGRID
- 3A** Leveling layer
- 3B** Root zone
- 4** Upper geotextile
- 5** Permeable foundation
- 6** Lower geotextile
- 7** Bedrock

2. PARTIAL INFILTRATION SYSTEM

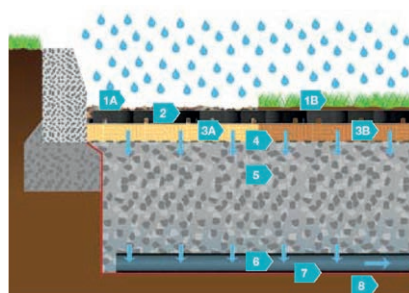
To be used where current foundation cannot absorb all water. Certain amount of water can be infiltrated - this most commonly occurs during heavy precipitation. Drainage pipes are connected to the permeable foundation and allows for siphoning away of the excess water into other drainage infrastructure such as sewer, a water stream or a gutter.



- 1A** Gravel
- 1B** Grass
- 2** Mosolut EASYGRID
- 3A** Leveling layer
- 3B** Root zone
- 4** Upper geotextile
- 5** Permeable foundation
- 6** Drainage pipe
- 7** Lower geotextile
- 8** Bedrock

3. NO INFILTRATION SYSTEM

If the absorbing capacity of the current foundation is low or it contains contaminating particles, this system allows for a complete capture of water. It utilizes an impermeable elastic membrane placed at the bottom and on the sides of the flooring in order to create a reservoir which accumulates the excess water. The drainage pipes are installed on the impermeable membrane and transport the water into water streams, sewers or water purification units. The system is particularly suitable for polluted areas, because it precludes further dissemination of the pollution deeper into the bedrock, where it could contaminate ground water.



- 1A** Gravel
- 1B** Grass
- 2** Mosolut EASYGRID
- 3A** Leveling layer
- 3B** Root zone
- 4** Upper geotextile
- 5** Permeable foundation
- 6** Drainage pipe
- 7** Impermeable elastic membrane
- 8** Bedrock

Selection of the system

Table 2. below recommends the appropriate type surface system for a range of soil conditions. Information regarding soil classification please refer to Table 1. At the beginning of the project, it is therefore essential to demonstrate the seepage soil capacity to answer the question, whether a seepage process can be considered.

For system A and system B, the highest recorded groundwater level more than 1000 mm. This is to allow filtration contaminants in the soil below the surface and also to prevent the water table from rising and reduce available retention in the subsoil.

Table 2: Guidelines for selecting a permeable paving system

		System A total infiltration	System B partial infiltration	System C without infiltration
The permeability of the substrate is defined by the coefficient of permeability, K (m/s)	10^{-6} to 10^{-3}	yes	yes	yes
	10^{-8} to 10^{-6}	x	yes	yes
	10^{-10} to 10^{-8}	x	x	yes
Highest recorded groundwater level within 1000 mm of the surface		x	x	yes
Pollutants present in the subsurface		x	x	yes



Thickness of the substrate

The design of the pavement is approached by considering the thickness of the subgrade that is required to meet both hydraulic factors and load factors. A greater base thickness is accepted for to ensure functional properties.

Hydraulic factors - Design should take into account the volume of water storage in the substrate and the infiltration rate/rate limitation of runoff. The thickness of the substrate required to provide sufficient storage capacity of water can be determined using Table 3.

Table 3. Base thicknesses to ensure sufficient water storage capacity for systems A, B and C

Rainfall data	r ^{A)}	Required base thickness (mm)					
		30 years water		100 year water		100 year old water plus 20% climate change	
		Systems A a B	System C	Systems A a B	System C	Systems A a B	System C
M60 ^{B)} = 20 mm	0,4	120	120	160	160	210	210
	0,3	140	140	190	190	240	240
	0,2	180	180	250	250	310	310
M60 = 17 mm	0,4	100	100	140	140	180	190
	0,3	110	120	160	160	210	210
	0,2	150	150	210	210	270	270
M60 = 14 mm	0,4	-	-	-	-	-	-
	0,3	90	90	130	130	170	170
	0,2	110	120	170	170	220	220

^{A)} Ratio of 60-minute rainfall depth to 2-day maximum rainfall depth

^{B)} 60-minute storm that repeats every 5 years.

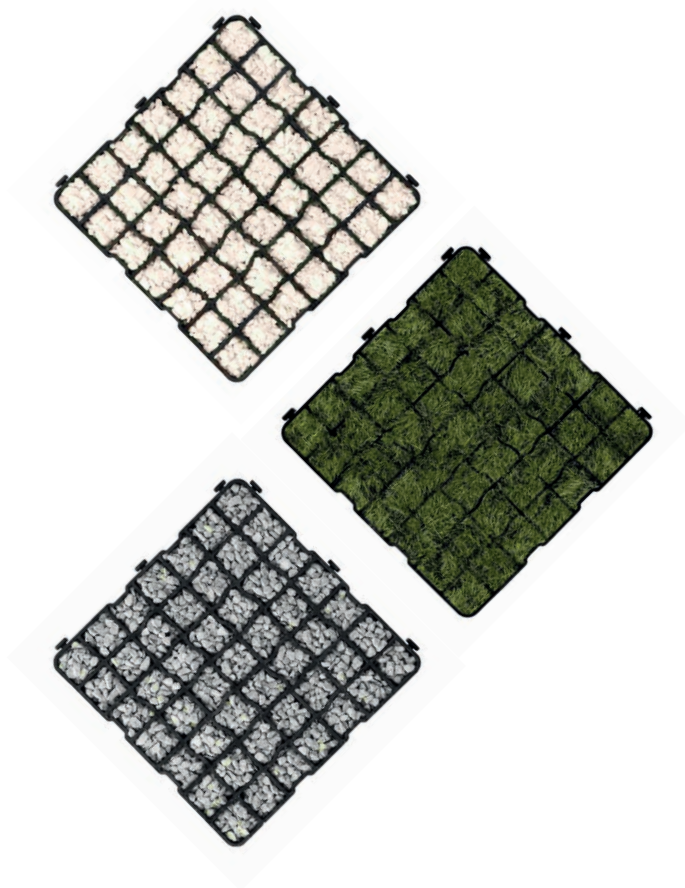
Load categories

The implementation design must take into account the cumulative traffic volume, that the surface must carry, measured in number of commercial vehicles per day, or the number of standard axles. Table 4 below shows data on the load categories of some typical applications.



Table 4. Load categories

Category	Number of standard axles	Traffic restrictions	Typical applications
Residential and pedestrian zones	0	Zákaz vjezdu nákladním automobilům	- Private driveway - Decorative elements - Enclosed play areas - Walkways with zero ramps
Car parking	100	Pouze pohotovostní vozidla	- Parking spaces and alleys - Outdoor car showrooms - Pedestrian routes in the sports stadium - Footpaths with occasional crossings - Pedestrian crossings
Lightly trafficked roads	15 000	1 velký těžký nákladní automobil / týden	- Public zones - Parking areas for residential development - External displays in the centre of the garden - Cemeteries/crematoria



The tables below show the pavement path thickness and type of material suitable for subgrades with CBR $\geq$ 15%.

Table 5: Systems A and B - Selection of surface material and pavement thickness

Category/application	Mosolut EASYGRID block (mm)	Hydraulically reinforced base	Coarse-grained material (mm)
Resid. and pedestrian zones	40 / 40-50	-	250
Car parking	40 / 40-50	-	350
Lightly frequented Roads	40 / 40-50	125	150

Table 6: System C - selection of track material and pavement thickness

Category/application	Mosolut EASYGRID block (mm)	Hydraulically reinforced base (mm)	Coarse-grained material (mm)	Cover layer (mm)
Res. and ped. zones	40 / 40-50	-	250	150
Car parking	40 / 40-50	-	350	150
Lightly frequented roads	40 / 40-50	125	150	150

Additional thickness to be provided in case of low CBR can be taken from the table 7 for systems A and B and from Table 8 for system C. Use of geotextile/grid reinforcement systems can increase the load carrying capacity of the substrate. For further specification, refer to the guidelines of individual manufacturers.

Table 7. Additional thickness of coarse-grained materials for systems A and B

CBR subgrade (%)	Coarse-grained material adjustment (mm)
1	300 ^{A) B)}
2	175 ^{B)}
3	125 ^{B)}
4	100 ^{B)}
5	For thickness, use table no.5
8	For thickness, use table no.5
10	For thickness, use table no.5
15	For thickness, use table no.5

^{A)} Professional assistance should be sought.

^{B)} CBR grades less than 5% are often too fine to be permitted.

Table 8. Total thickness of cover material for system C

CBR subgrade (%)	Coarse-grained material adjustment (mm)
1	600 ^{A)}
2	350
3	250
4	200
5	For thickness, use table no.6
8	For thickness, use table no.6
10	For thickness, use table no.6
15	For thickness, use table no.6

^{A)} Professional assistance should be sought.

Material selection

For a permeable pavement system, there is a requirement for rigidity, but the base aggregate must also be permeable to allow flow water and to have sufficient headroom for water to be trapped. Sand and gravel with rounded particles should not be used

on permeable pavement base construction. Two types of subbase material for permeable pavement are listed in Table 9 below, in accordance with BS EN12620: 2002 GC 90/15 4/40 and coarse aggregate 4/20.

Table 9. Grades of subgrade material for permeable pavement

Screen size (mm)	Percentage	
	Coarse aggregate, 4/40	Coarse aggregate, 4/20
80	100	-
63	98-100	-
40	90-99	100
31,5	-	98-100
20	25-70	90-99
10	-	25-70
4	0-15	0-15
2	0-5	0-5
1	-	-

Table 10. Grading of coarse material for permeable paving

BS Screen size (BS EN993-1)	Percentage
14	100
10	98-100
6,3	80-99
2	0-20
1	0-5

Note: Necessary action should be taken measures should be taken to prevent the migration of material of the overlayer into the substrate, e.g. by using geotextiles or the use of compatible materials with respect to the paving and the substrate.



Preparing for installation

- Substrate preparation, substrate construction and construction and type of base (if available) should generally be in accordance with the relevant current practice and standards.
- It is essential that the compaction of the subgrade is thorough, using a vibratory plate compressor or vibratory roller.
- The thickness of the paving layer after final compaction of the surface layer should be 40 - 50 mm, within an acceptable tolerance of the surface level.
- The substrate grid can be placed and screwed in place.
- All areas of the prepared surfacing material should be protected and should not be left uncovered overnight.
- In the construction of permeable Mosolut pavements EASYGRID with a grass/gravel it is necessary to use termination sides. Edge restraint systems must be sufficiently durable, to withstand the potential overloading anticipated to withstand thermal expansion and prevent loss of material. Typical examples of edge barriers are kerbs, prisms, fixed supports (e.g. paving blocks).

Laying Mosolut EASYGRID blocks

Place the blocks on the prepared substrate and the laying layer. The leading edge of the blocks should have exposed fixing lugs for quick installation. No additional anchoring is required.

Always protect the outer edge with edges. Stand on the laid blocks when laying the next row.

- To ensure suitable conditions for use, the grid should be installed in a manner consistent with the pre-prepared structural design, taking into account the geological conditions of the substrate.
- The height and parameters of the foundation should be chosen appropriately for the type and purpose of the surface.
- When the soil has limited water absorption, additional drainage should be provided to maintain a permeable surface. The surface of ecological paths should be filled with grass or stone. When using, remember the basic conditions necessary for proper function:
- the eco-grid fill should be at least 15 mm above the grid surface, the eco-grid surface should not be used in contradiction to its technical parameters,
- maintenance and care of the surface is necessary during use (correct filling condition)



Surface finishing

Gravel

- Fill porous paving blocks to the top of the cells with gravel in accordance
- in accordance with NBS section Q23 for gravel finish. To achieve the best result
- The use of aggregate in the 6 - 10 mm fraction is recommended.
- A lightweight vibratory plate may be used to fix the blocks and to settle the gravel. The cells are replenished as required after initial placement. Do not overfill.
- The surface is immediately marched.
- Over time, you can increase the gravel as needed



Grass

- Gravel can be applied to the top of the of the area, any membrane weed suppressant. This will prevent weeds from growing, but allow natural drainage of rainwater water to the ground below.
- Seed in accordance with the NBS section Q30 for seeding
- Use a 70/30 root zone mix or 60/40. Initially fill 7 to 10 mm below the top surface of each grid, as this the grass will be protected in the early stages of growth.
- A vibrating plate can be used to consolidate the blocks and to settle the interlayer root zone.
- The whole area can then be seeded and irrigated. A very light top dressing can be applied top dressing that just covers the seed and provides adequate germination conditions. Do not over-water it.
- Leave a new surface and grass before use fully established, usually 8 weeks.

GENERAL RECOMMENDATIONS

The design solution using the surface hardening system - EASYGRID is a very aesthetic and durable solution for green and ecological bearing surfaces for vehicular and pedestrian traffic. Due to the specificity of the product, its structure and the material from which it is made, it is necessary to follow the rules of use. This will not cause permanent damage to the surface or potential safety risks.

Avoid the occurrence of the phenomena listed below and, if necessary, take immediate corrective action in the form of repair/replenishment/removal of the cause of the damage:

- The grate is not properly filled and compacted above the top 15 mm. If not properly filled and compacted, the wheels of passing and manoeuvring vehicles can cause destruction and tearing of the supporting walls of the grating. Improper use will result in so-called mechanical fatigue of the material, mechanical damage to the surface of the grating, with individual surface parts bulging, 'clicking' and clearly protruding from the substrate.
- For green areas filled with grass, do not allow too intensive use of the surface, use special turf grasses characterised by: slow growth, resistance to high/low temperatures, with a strong root system and low soil requirements.
- Do not allow the grass area to dry out, especially during the initial grass rooting period and when using in high temperatures (do not water in full sun).

PLEASE NOTE that the information provided here is for general guidance. The user must assume sole responsibility for assessing the suitability of these information for its intended purpose. We accept no liability for any loss or damage, however arising, which results directly or indirectly from the use of this information and recommendations.



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