



ECORASTER®

Permeable Ground Reinforcement

Installation manual



Reservation clause

The explanations shown in this document, especially application and usage suggestions of our products are based on our experience and knowledge in normal conditions, assuming that the products been stored and used appropriate. Due to different subsoils and different operating conditions neither liability nor warranting an installation can be based on verbal instructions or the guidelines printed in this manual, regardless of the type of legal contracts. Terms and conditions apply. Subject to change without prior notice. Errors excepted.

Thanks for your choice to go permeable.

The consequences of global use of land surface are noticeable and emphasize the urgent need for permeable ground reinforcement solutions

Since the year 2000, in Germany alone 100 hectares of land are sealed every day by construction and roadbuilding. Worldwide it is even worse.

PURUS PLASTICS operates one of the most modern plastics recycling facilities in the world. Our goal: Manufacturing truly sustainable products.

ECORASTER® products have been developed and produced in Germany from 100% recycled materials (LDPE) since 1994.

ECORASTER® is absolutely 100% environmentally friendly, time proven with millions of square meters sold, and is versatile and excellent value.

With the right choice of grid types and well-designed accessories, this system is suitable for almost every type of application.

Choosing our quality product helps to save precious resources and reduces the environmental impact of waste plastics. Your benefits: You will save money and time during installation, on maintenance and usage.

PURUS PLASTICS Team



Installation Manual **ECORASTER®**

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Why ECORASTER®?

Particularly in metropolitan and industrial areas, because the ground is paved or compacted it is less able to fulfill its natural functions. On one hand the ground loses the natural ability to store or “buffer” rain water which can lead to very quickly over-burdening storm water infrastructure leading to flooding, and on the other hand the air cannot be cooled and humidified by the natural ground “perspiring”, contributing to the well-known “Heat Island Effect”.

To counteract this trend and to help to prevent the negative effects of traditional sealed paving, more and more municipalities, architects and civil engineers are designing permeable and vegetated paving systems - an investment that also pays off.

Using the ECORASTER® system, in comparison to sealed surfaces, saves costly storm water retention ponds and other drainage and infrastructure systems. Often storm water taxes can also be saved and grants may be available to help implement such alternative paving options such as the ECORASTER® system.

ECORASTER® installation is quick and simple without the use of expensive mechanical equipment. The paved area is filled with gravel or vegetated and remains permeable.

Compared with heavy concrete grid blocks ECORASTER® is easy and economical to transport and has ultra-high load bearing capacity (up to 800 t / m²). The 95% open surface is significantly more permeable and allows a much higher degree of infiltration. In contrast to the concrete grid blocks ECORASTER® does not absorb water, which prevents frost damage and increases the infiltration capacity.

The proven safety interlocking system and the integrated expansion joints always help to create an excellent surface weight distribution and resistance to dynamic loading, no matter what kind of application the system is be used for.

Benefits at a glance.

- ✓ **easy and quick installation** (up to 100 m² | 1,076 ft²/h per person)
- ✓ **high resilience** (up to 800 t/m²)
- ✓ **low maintenance**
- ✓ **installation without heavy construction equipment**
- ✓ **no edging needed**
- ✓ **permeable ground reinforcement**
- ✓ **low transport and handling costs**
- ✓ **versatile applicable, accessories available**
- ✓ **weatherproof and unbreakable**
- ✓ **Safety interlocking, 36 notches per m²**
- ✓ **UV-resistant and frostproof**
- ✓ **20 years warranty**
- ✓ **„Made in Germany“** (TÜV Nord)



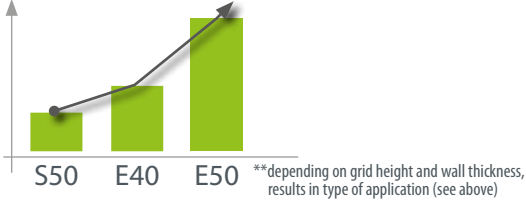
Matrix of Application

ECORASTER® Application		GREEN / MICROGREEN	MINERAL
		vegetated	gravel filled
Load	 Roads and paths used only for pedestrians and bicycles may use this	E40 alternative: S50	E40 alternative: S50
	 Paths, walkways and similar applications, as well as car parking	E40 alternative: E50 or S50	E40 alternative: E50
	 Roads, road shoulders and parking lots used for all types of vehicles	E50	E50* alternative: ECORASTER® STONE
	 Areas used with high point axle loading e.g. warehousing (forklifts and trucks), truck parking lots, bus parking, helicopter landing pads.	---	E50* alternative: ECORASTER® STONE <small>*with 3/8" - 3/4" inches covering-over</small>
Installed and unfilled, the ECORASTER® system can be driven on with heavy wheeled vehicles (EN 124 / D400 except Bloxx).			

Minimum Loadability, up to (t/m²)

800*	800*	800*	ECORASTER® MINERAL
150	200	300	ECORASTER® GREEN / MICROGREEN
S50	E40	E50	<small>*test stopped at 800 t/m² limit.</small>

Dynamic Loadability (sketched)**



Certificates and Approvals

- ✓ UV-resistant, certified DIN EN 60068-2-5
- ✓ Point axle loading up to 20 t/m², DIN 1072:1985
- ✓ Heavy-duty, tried and tested DIN EN 124:2011
- ✓ Environmentally safe, tested OECD 202:2004
- ✓ Factory warranty: 20 years from purchase date (private use)
- ✓ NATO certified E50 - MOD / 9330-99-858-1406
- ✓ TÜV CERT
- ✓ TÜV Nord „Made in Germany“

Please note: Please read the manual/
check our website for more information!
1m² = 10.764 ft²



Occupancy and parking duration

Installation examples for permeable areas

Dependent on daily occupancy and parking duration

ECORASTER® Mineral ECORASTER® Stone

Occupancy > 10 h per day

- » visitor parking
- » shopping malls (near mall entrances)
- » driveways, entrances and exits, access roads
- » storage areas
- » fire rescue paths, fire access lanes ... and much more



parking time > 10 h per day

ECORASTER® Bloxx

Occupancy > 10 h per day

- » high traffic areas
- » accessible parking space, public sector, etc.
- » office buildings, public buildings, commercial areas
- » shopping malls, parks
- » parking areas in residential districts ... and much more



parking time > 10 h per day

ECORASTER® Microgreen

Occupancy max. 8 h per day

- » parking space, public sector, etc.
- » office buildings, public buildings, commercial areas
- » shopping malls, parks
- » parking areas in residential districts ... and much more



parking time max. 8 h per day

ECORASTER® Green

Occupancy max. 4 h per day

- » parking spaces in tourist areas
- » office and commercial areas (overflow)
- » paths for golf carts, etc.
- » cemeteries
- » fire access lanes
- » stadiums and sporting areas (located non inner-city)
- » campsites ... and much more



parking time max. 4 h per day



Adapt to the intensity of use:

Parking lots and driveways can be planned according to their distance from the building.



Specifications

Type:	ECORASTER® E50	ECORASTER® S50	ECORASTER® A50	ECORASTER® E40
Dimensions:	330 x 330 x 50 mm 12.99 x 12.99 x 1.97 inches	330 x 330 x 50 mm 12.99 x 12.99 x 1.97 inches	330 x 330 x 50 mm 12.99 x 12.99 x 1.97 inches	330 x 330 x 40 mm 12.99 x 12.99 x 1.57 inches
Material:	100% recycled Polyethylene (LDPE)			
Wall height:	50 mm • 1.97 inches	50 mm • 1.97 inches	50 mm • 1.97 inches	40 mm • 1.57 inches
Wall thickness:	5 mm • 0.1968 inches	2,5 mm • 0.098 inches	5 mm • 0.1968 inches	3,6 mm • 0.14 inches
Loadability:	up to 800 t/m ² (depending on fill type)			
Interlock:	36 notched connectors per m ²			
Dimensional stability:	-50° / 90 ° C • -58° / 194° F			
Change in shape:	0.5% (at normal temperature +68°F to 176°F)			
Moisture absorption:	0,01% • 0.01%			
Solubility:	resistant to acids, alkalis, alcohol, oil and petrol (de-icing salt, ammonia, acid rain, etc.)			
Compressive strength:	up to 20t point axle load (DIN 1072)			
Area per pallet:	57,19 m ² • 615.59 ft ²	57,19 m ² • 615.59 ft ²	57,19 m ² • 615.59 ft ²	73,15 m ² • 787.38 ft ²
Weight per piece:	1,06 kg • 2.34 lbs	0,76 kg • 1.67 lbs	1,06 kg • 2.34 lbs	0,58 kg • 1.27 lbs
Weight per m ² 10.76 ft ² :	9,55 kg • 21.05 lbs	6,84 kg • 15.07 lbs	9,55 kg • 21.05 lbs	5,22 kg • 11.50 lbs



Type:	ECORASTER® Bloxx
Dimensions:	330 mm x 330 mm x 50 mm 12.99 X 12.99 x 1.97 inches
Weight:	approx. 85 kg 187.39 lbs (incl. blocks)
Locking System:	36 T-elements / m ² 6 T-elements/ sqft
Dimensional Stability (Temperature):	-50° to +90 ° C -58° F to +194°F
Block Dimensions:	140 x 140 x 45mm (each) 5.51 x 5.51 x 1.77 inches
Weight per Block:	approx. 2.12 kg 4.67 lbs
Available Colours:	red, white, dark grey and light grey













Questions? Give us a call:

+49 9233 77 55 0

Check the water permeability

What are the criteria for infiltration?

The infiltration rate of the ground affects the feasibility of a construction project involving water-permeable surfaces. It is indicated by the coefficient of permeability K (m/s). To be considered for such a project, the infiltration rate of the ground must be tested. Geotechnical surveys are required for certain surfaces to be reinforced or for heterogeneous ground.

$K > 10^{-4}$ m/s	$10^{-4} > K > 10^{-6}$ m/s	$10^{-6} > K > 10^{-8}$ m/s
stony / sandy soil	sandy / clay soil	clay / loam
  	  	  
quick infiltration	average infiltration	slow infiltration
		safety drainage 

A possible test method to establish infiltration capability

For this quick test dig out a circular area with a of 40 cm diameter and 40 cm depth. Fill 10 liters of water and measure the time it takes the water to fully infiltrate into the soil. Repeat this process until the same approximate time is measured 3 times in a row. The test should be done in the natural undisturbed soil, so as not to distort the results.

Evaluation of test results (in minutes):

time of infiltration ≤ 2	$2 < \text{time of infiltration} \leq 20$	infiltration > 20
QUICK	AVERAGE	SLOW

Determination of requirements: Sand, gravel etc.

Before determining your requirements of gravel, loose gravel etc., please determine the height of your area. For larger areas we recommend using leveling instruments or to use laser technology.

To calculate the material required to fill up the ECORASTER® elements please use the following formula:

$0,95 \times \text{area} \times \text{height of ECORASTER®}$

Installation without substructure?

Thanks to the interlocking system and the excellent area load balancing ECORASTER® can be installed without substructure. If you do not use a substructure (water-storing bed) area drainage is not ensured. Additionally soil changes can effect surface irregularities and cause different loadabilities.

If you plan to install without substructure, despite any possible restrictions, please contact us, we are eager to help you.

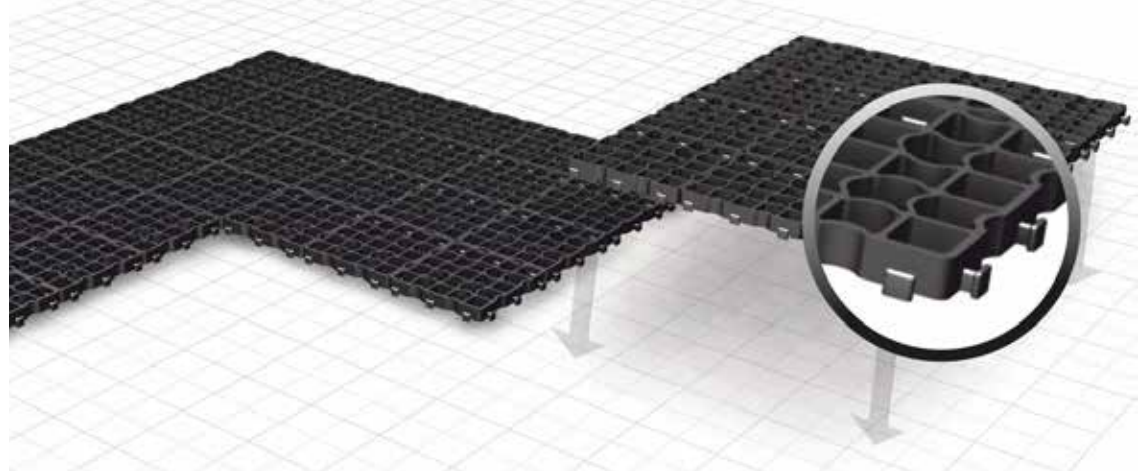
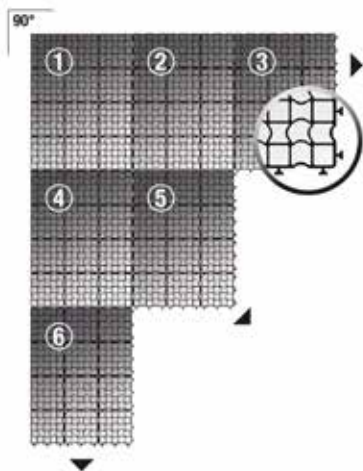
Please keep in mind!

- » ECORASTER® should be installed with a vibrating plate tamper after installation (Bloxx with rubber mat).
- » For the final height of the substructure please note, that the ECORASTER® settles into base layer approx. 0.5cm | 0.19"
- » After filling ECORASTER® a slight settling is possible. For Bloxx use a geotextile (liner) to avoid mixing gravel and floor.
- » In hot conditions please fill the ECORASTER® elements immediately after correct installation.
- » For areas mainly used by heavy trucks and forklifts (small turning radius), we recommend using ECORASTER® E50 with 1 - 2 cm | 3/8" - 3/4" over fill, for example with loose gravel. Alternatively ECORASTER® E50 Stone can be installed.



Installing the pre-assembled layers

ECORASTER® can be installed quickly and easily without heavy construction equipment. The elements are delivered in „layers“. One layer is equal to 1.33 m² | 14.32 ft² and consists of 12 single ECORASTER® pieces (4x3). Large areas can be installed in a single operation directly from the pallet as the weight of a layer is low and the interlocking system works quickly and easily.



Installation

Start the installation at a corner of the area. Make sure the interlocking notches point outwards towards the direction of the further area to be installed. The next layers are simply connected to the notches of the already installed ECORASTER® elements. To achieve a straight result, we recommend using a guideline along the outside of the area.

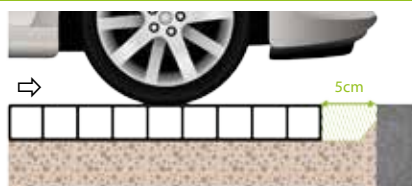
Disassembly

The pre-assembled layers can be disconnected if needed. Put the layer you want to separate on top of another layer, the edge along the area you want to split up. Push the upper layer (the one you want to separate) down using your foot. Enough force will loosen the safety interlocking system notches.

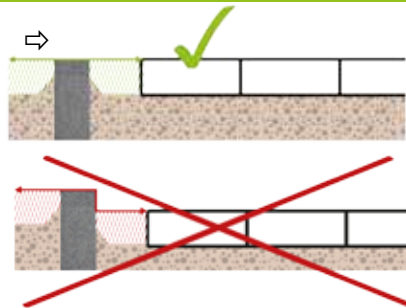
Adapt – cut to size

For quick and clean cutting of ECORASTER® the following tools have proven themselves in practice:

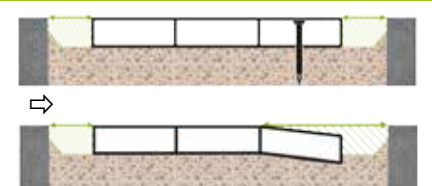
- » portable circular saw
- » cutting disc
- » jigsaw
- » crosscut saw



Please ensure that that you keep 5 cm | 2 inches of space is kept between ECORASTER® and edging*



Please place ECORASTER® on the same level like the edging.*

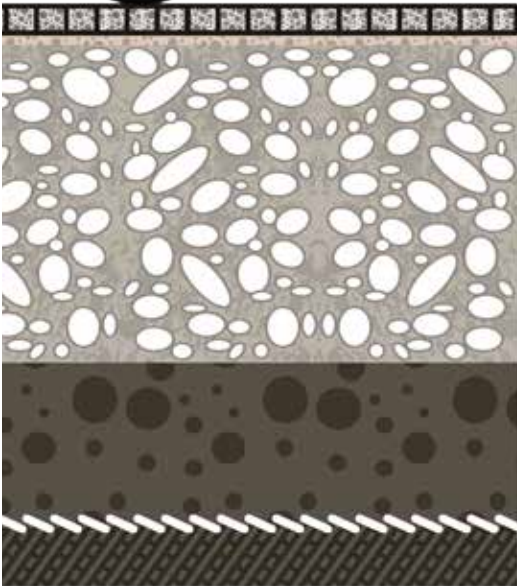


To prevent rising or lifting due to braking forces in parking areas, ECORASTER® can be anchored with ground nails. Alternatively the end of the system can be lowered as shown.*

Example: Parking with ECORASTER® MINERAL

Filling: Gravel

Areas, which can not be greened because of the heavy use or their insufficient location, can be filled with loose gravel. These areas are also considered to be fully permeable! Due to the high loadability this type of filling is highly recommended for heavy duty areas such as parking or warehouse/logistic areas.



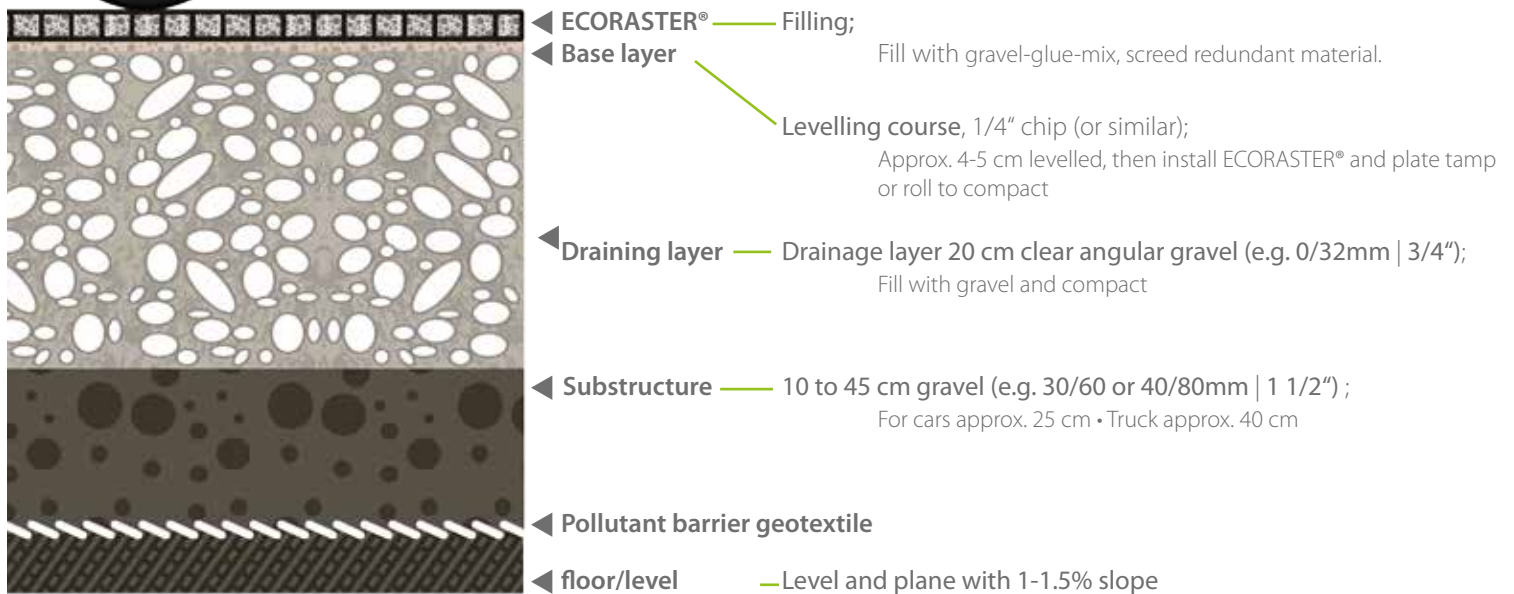
- ◀ **ECORASTER®** — Filling;
◀ **Base layer** — Fill with gravel/ loose gravel/ sand (with proper grain size, no fines)
◀ **Levelling course**, 1/4" (chip or similar);
Approx. 4-5 cm levelled, then install ECORASTER® and plate tamp or roll to compact
- ◀ **Draining layer** — Drainage layer 20 cm clear angular gravel (e.g. 0/32mm | 3/4");
Fill with gravel and compact
- ◀ **Substructure** — 10 to 45 cm gravel (e.g. 30/60 or 40/80mm | 1 1/2") ;
For cars approx. 25 cm • Truck approx. 40 cm
- ◀ **Pollutant barrier geotextile**
- ◀ **floor/level** — Level and plane with 1-1.5% slope



Example: Parking with ECORASTER® STONE

Filling: Hard-surfaced gravel

Heavy used areas, which shall be fully permeable and free of loose gravel can be installed with our „Stone“ system. In a special procedure two eco-friendly components are mixed together and get blended with the gravel filling. The results are sturdy and tough surfaces, with a high percolation rate (one liter per m² per second).



Please note:

Considering the required technology and skills for this type of filling, regarding the limited processing time this system mainly addresses to professional installation companies.

Please take the advantage of our profound consultation to achieve the best possible result.

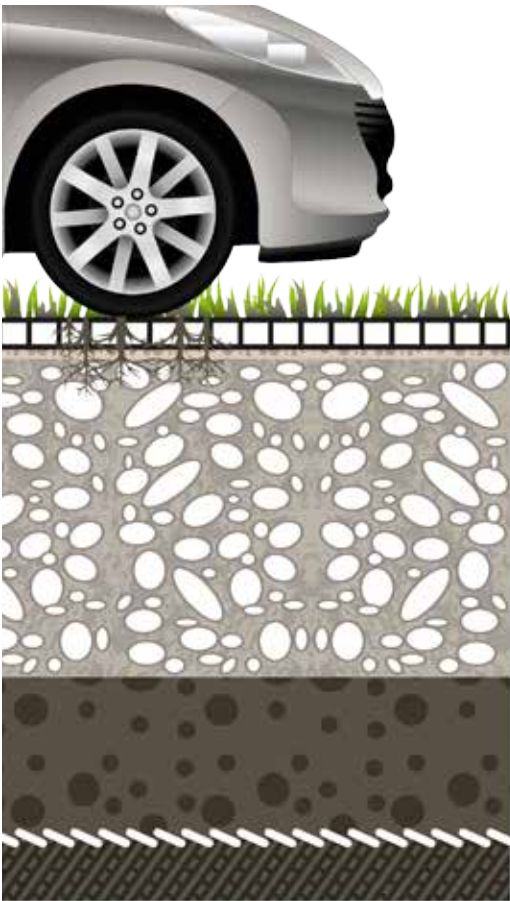
Important: This system is not loadable until full setting.



Example: Parking with ECORASTER® MICROGREEN

Filling: Substrate + seeds

After installing the ECORASTER® the area is filled with MICROGREEN, an compound of a highly durable substrate mixture and hardy herbage, sedum and moss plants. This type of filling stands out due to its high resilience and its low need for maintenance.



Advice!

To cut the ECORASTER® fast and straight we recommend to use a hand-held circular saw. Smaller corners or areas which need to be cut more precise please use a jigsaw. Do not cut the layers in advance. If possible please cut the layers after deploying them beyond the edges of the area. A little base makes cutting even more easy.

- ◀ **ECORASTER®** — Filling;
◀ **Base layer** — Fill with mineral substrate, sow seeds (mix of sand-thyme, mosses, sedum, mountain sweet grass, white clover)
— **Levelling course, mineral substrate** (3/15mm, Microgreen-substrate);
Approx. 4 cm levelled, then compact with roller to approx. 3 cm
- ◀ **Draining layer** — Drainage layer 20 cm clear angular gravel (e.g. 0/32mm | 3/4");
Fill with gravel and compact
- ◀ **Substructure** — 10 to 45 cm gravel (e.g. 30/60 or 40/80mm | 1 1/2");
For cars approx. 25 cm • Truck approx. 40 cm
- ◀ **Pollutant barrier geotextile**
- ◀ **floor/level** — Level and plane with 1-1.5% slope

Please note:

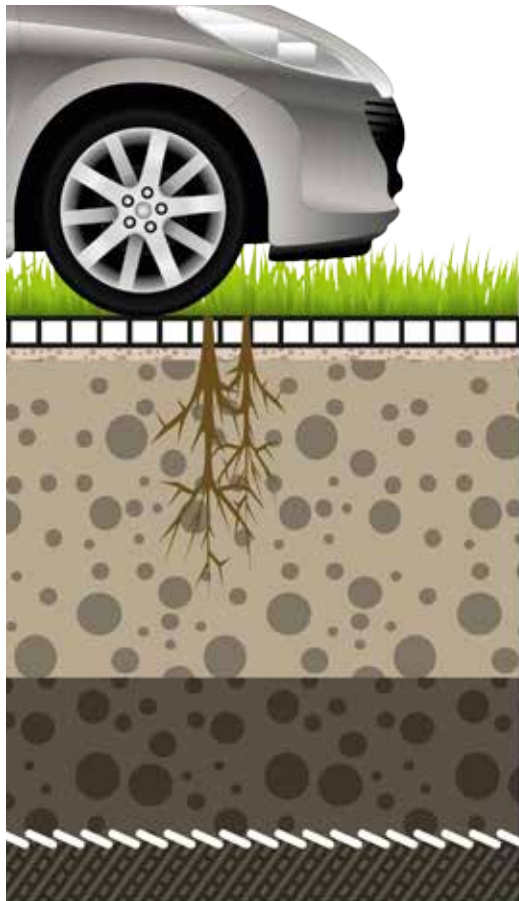
- This system is only suitable to a limited extent, when mainly used by heavy trucks.
- Seeds need to be stored in a dry and dark place until sowing.
- Care instructions: Areas do not need mowing, fertilization or watering!



Example: Parking with ECORASTER® GREEN

Filling: Lawns, pre-greened or DIY greened

Installing the pre-greened ECORASTER® blanket and earthy soil turns into a grass field within a couple of hours. The immediate green result enables a swift acceptance of construction work. The surface is reinforced, drivable and permeable. Of course the ECORASTER® can be filled and greened DIY.



◀ **ECORASTER®** — Filling:
◀ **Base layer**

— Levelling course: **Fertilit®**

◀ **Fertile layer**

— **Intermediate: HYDROFERTIL®** (mix with 65-70 % gravel 30/60 mm)
(alt.: mix 30-35 % Humus and 65 - 70 % gravel 30/60 mm)
Height approx. 20 - 30 cm

◀ **Drainning layer**

— **Drainage layer; Gravel (e.g. 30/60 - 40/80 mm | 1 1/2")**
Height approx. 10 - 40 cm, plate tamp or roll to compact

◀ **Pollutant barrier geotextile**

◀ **floor/level**

— Level and plane with 1-1.5% slope

We recommend the following seed mix::
20% Festuca Rubra Corn Rodeo
25% Festuca Rubra Trich Dawson
20% Festuca Arundinacea Mustang
15% Lolium Perenne Langa
20% Poa Pratensis Cynthia

pre-greened

Install ECORASTER® Green,
use lawn roller to press on

DIY greened

SEMILIT® (alt. mix 30%
gravel + 70% humus +
long-time fertilizer), elutriate
seeding material.

Please note:

- This system is of limited suitability for areas mainly used by heavy trucks.
- Green areas need maintenance (fertilization, watering and lawn care).
- In case of DIY greening please check if the location meets the demands of your seeding materials.
- Daily occupancy and the time of parking will affect the result of the greening.



Advice!

If you keep the lawns ovaries beneath the top edge of the ECORASTER®, the greening will be better protected and more durable, esp. with vehicle operations.

Example: Parking with ECORASTER® Bloxx

Filling: Paving stones

The new ECORASTER® Bloxx modules enable a rapid ground reinforcement in a modern paver design without any surface sealing. This system works perfect for parkings, warehouse areas, accessible areas, driveways and paths.

Look closely at the integrated gutter: This innovative drainage system is free from clogging. Grouting the joints? Not needed! Feel free to combine Bloxx with the other ECORASTER® elements to set greened highlights into your permeable area.



ECORASTER® Bloxx fits perfect into the safety interlocking system. As a result Bloxx can be combined with any other ECORASTER®.



- ◀ **ECORASTER®** — Bloxx, filling with paving stones, settle area with plate compactor (rubber mat). 140*140*45mm (each paver); Dark grey, light, red, white
- ◀ **Geo-fabric** — ECORASTER® mesh; Construction textile with grid/net structure
- ◀ **Base layer** — Levelling course, 1/4" (chip or similar); Approx. 4-5 cm levelled, then plate tamp or roll to compact
- ◀ **Draining layer** — Drainage layer 20 cm clear angular gravel (e.g. 0/32mm | 3/4"); Fill with gravel and compact
- ◀ **Substructure** — 10 to 45 cm gravel (e.g. 30/60 or 40/80mm | 1 1/2"); For cars approx. 25 cm • Truck approx. 40 cm
- ◀ **Pollutant barrier geotextile**
- ◀ **floor/level** — Level and plane with 1-1.5% slope



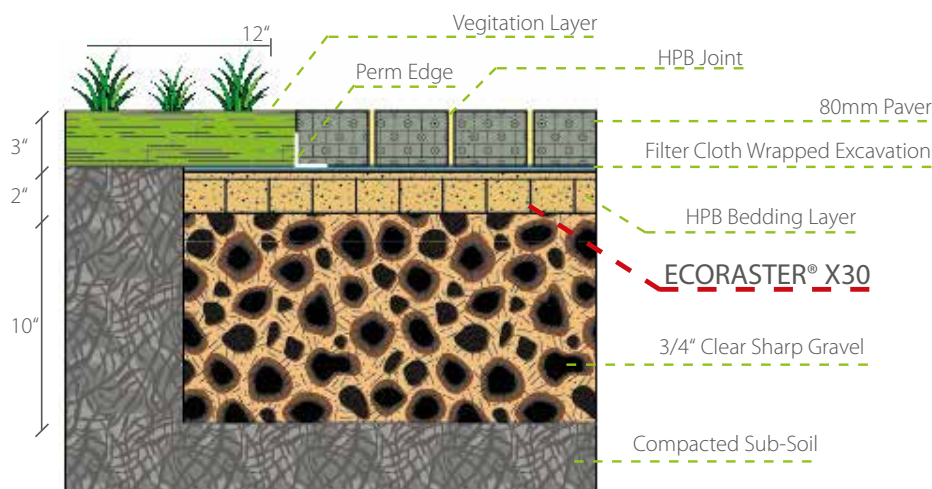
ECORASTER® X30 | Hardscape Base Stabilizer

Save money and time on your substructure. The ECORASTER® X30 is a heavy duty linking grid system that allows you to build stronger hardscapes by stabilizing the base material.

Your Benefits:

- » Up to 50% base reduction in excavation
- » Up to 30% labour cost savings
- » Wider pin-point load dispersal
- » Reduced warranty call-backs from shifting and sinking
- » Reduced risk of poor sub-base compaction
- » Sustainable, efficient, and profitable!

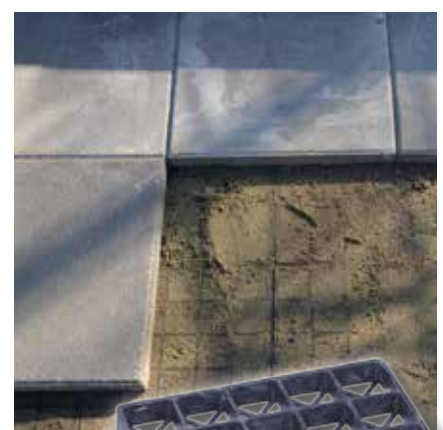
Easy to install:



- » Heavy Duty Base Stabilization
- » Permeable Base Stabilization
- » Interlock Driveway Base Support
- » Permeable Interlock Concrete Paving Installation

Questions? Give us a call:

 **+49 9233 77 55 0**



Type:	Dimensions:	Material:	Wall thickness:	Load up to:	Solubility:	Compressive strength:	Weight per piece:	Weight per m ² 10.76 ft ² :
X30 Base Stabilizer	330 x 330 x 30 mm • 12.99 x 12.99 x 1.18"	100% recycled Polyethylene (LDPE)	0.2 in	23 t/ft ² (unfilled) 75 t/ft ² (filled)	resistant to acids, alkalis, alcohol, oil and petrol (de-icing salt, ammonia, acid rain, etc.)	up to 20t point axle load (DIN 1072)	0,77 kg • 1.7 lbs	6,93 kg • 15.3 lbs

Fire Access Routes

So help won't stuck!

Firefighting operations are often hindered by the lack or poor quality of access lanes and parking and turning areas. The reason for this is the development of organic material (humus). Mud filled tire treads and getting stuck in the mud can delay lifesaving access to the site an emergency situation. The quick extinguishing of fire and other life saving measures can be compromised even with four wheel drive vehicles, and this not only with wet ground.

The Requirements:

Access roads, parking and turning surfaces have to meet the minimum standards of the Road Building Class VI (Guidelines for standardizing vehicular trac surfaces- RStO)

Our Test Run Result:

Our pictures (ride side low) show a like new German fire truck, 16t weight fully equipped. Although that truck has a fully adjustable 4WD and semi-offroad tires, it got stuck in normal grass-land within five meters. Heavy equipment was needed to get it back on track. The gras had a normal humidity grade and was not prepared in any way.

The Solution:

The ECORASTER® system reinforces or “paves” the ground surface without sealing it. This means that even with high surface loads (up to 800 t / m² , depending on the fillingtype) the rainwater/ firefighting water can easily infiltrate the ground, usually without additional complex drainage elements.

This also means in some cases (depending on government) there is no stormwater tax per surface area. Because the ECORASTER® system can be installed with different fill materials and it allows total design freedom for landscaping.

ECORASTER® E50 ensures safe access and parking/ turning of emergency vehicles.

» Please note:

Please follow the instructions and guidelines on our website/ installation manual. The local code must be followed.



Section from „Fire access surfaces“ (TBB/ DIN 14090)		
Access	with:	<ul style="list-style-type: none">• minimum 3 m (straight entrances)• minimum 3,5 m (entrances bordered with structures, where both side ≥ 12 m)
	tonnage:	total allowed weight minimum 16t minimum 10t per axle
Hard-standing	dimensions:	minimum 5 m x 11 m*
	tonnage:	minimum 800 kN per m²
Turning area	dimensions:	<ul style="list-style-type: none">• i.e. vehicle minimum 7 m x 12 m,• plus extensions (4 m) front and rear of turning areas
	tonnage:	minimum 16 t, minimum 10 t per axle

Questions? Give us a call:

+49 9233 77 55 0

Installation on slopes: ECORASTER® A50



With over 200 expansion joints per square meter and 36 notched interlocking connectors per square meter the ECORASTER® counters the forces which are impacting the embankment. Erosion of the solum, soil destruction e.g. by rain water made channels, line-shaped erosion and nutrient washout can be reduced by a proper installation of the ECORASTER® system. Possible slipping dangers as well as the soil conditions shall be evaluated by a local geology engineer if needed.

The system's components (ECORASTER® A50 with groove for ground nails, universal hinge, ribbed ground nails) shall be adapted to the requirements and the proper dimensions (e.g. ground nail size) and the interval between the nails (e.g. one per m²) shall be advised by the architect/ planner.

To achieve the best result for this application following actions might to be taken before the ECORASTER® installation, depending on the initial conditions and soil conditions:

- Removal of loose rocks and non suitable soil material
- Clearing, removal of vegetation
- Fill up channels and draws
- Levelling/ profiling



Depending on the requirements a sufficient measured substructure (as a base course/ levelling course) should be placed on the prepared planum. The installed ECORASTER® are filled to their top edge with suitable topsoil or a mixture of sand with soil, humus and e.g. substrate, which contains starting fertilizer for the greening. Substructure and filling material shall contain a small amount of fine material, to ensure a certain water reservoir capacity for the greening and to ensure water permeability.

Installation profile, ECORASTER® on slopes:

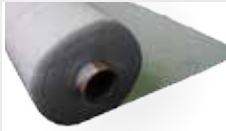


Please note:

- For a swift greening we recommend a standard mix of herbs or lawns with an application of minimum 20 g/m².
- Depending on the location vegetation types might vary. Please check the habitat requirements of your seeds. Preferable time for sowing is springtime.
- The bigger and better the area of ECORASTER® is covered/ vegetated the better the filling is protected against weather effects. Growing root penetration increases the interlocking with the substructure and effects the results of the ground/ embankment reinforcement.



Perfect fitting extensions | Softground



» Geotextiles/ Construction fleece

Matching your project we are offering the required textiles.

Installing the Bloxx we recommend to use ECORASTER® mesh.



» Curve-Element

The flexible connector for laying curves, radii and circles, e.g. for changes in direction when reinforcing soft road shoulders. Specially developed for the ECORASTER® system, it inserts seamlessly into the surface.



» Hinge & Groundnails

Depending on the slope, the application and the tensile forces impacting the hillside/ embankment hinges and/or ECORASTER® A50 with ground nails are recommended. The ECORASTER® area will be interlocked with the slope and the tensile forces will be reduced effectively. The hinge can be adjusted 90° both ways.



» Parking lot markers

The markers are inserted into the ECORASTER® and fixed in place with locking elements.

Two types of markers are available. For areas with snow-plowing service we recommend type B, as type A is raised.



360° View plus animation online:

Have a closer look : All ECORASTER® elements and accessories in 360° HD with animation on www.purus-plastics.de.



» SOFTGROUND®

The tough and non-slip rubber mat locks directly into the ECORASTER® E30 elements. Softground® is suitable for terraces, trade fairs, horseboxes and many other applications.

The substructure for SOFTGROUND® areas is similar to Mineral/ Stone.



Accessible areas, accessibility

If you want to install accessible areas you can choose from different ECORASTER® types/ fillings.

Besides SOFTGROUND® you can also install ECORASTER® Stone or Bloxx.

Just give us a call...

We are eager to help you!



Review



Since more than 20 years PURUS PLASTICS manufactures the Ecoraster® permeable ground reinforcement system, made of recycled materials (LDPE). For about the same amount of time the very first Ecoraster® E50 „classic“ is installed at a highly used waste collection point. Although there are lots of heavy switching moves and loads caused by the lifting and setting of the containers the area is free from settlements, edges and ditches. In the meantime the area got greened spontaneously.



**20 YEAR
warranty**
ECORASTER®

Our Promise of Quality



PURUS PLASTICS constantly monitors the quality of the self-generated raw materials and the in-house produced products, to guarantee what we promise: „Quality, made in Germany!“

As a technology leader we will not stop improving, in order to relieve future generations and to save valuable resources.

Manufacturing our Ecoraster® for more than 20 years and its installation worldwide shows that our system is durable, loadable and sustainable. Being foundation member of the European quality network for „products made out of recycled materials“ we want to ensure that best quality, best value and the highest environmental compatibility is granted.



Frequently Asked Questions

Can I drive on ECORASTER®?

Yes you can! ECORASTER® are durable. Depending on substructure and filling, the loadability goes up to 800 metric tons per m² (TÜV approved). Even right after installation the empty elements (excl. Bloxx) are sturdy enough in empty conditions to drive on. This simplifies filling the area. See page 6 for more details.

Can I clear snow on ECORASTER® areas?

Yes you can! ECORASTER® bear up against de-icing salt, brooms, snow plow, brush roller. Please avoid a full force clearing. If the area is filled up with loose gravel, maintenance will reduce to the dispersion of a small amount of gravel after defrost.

Is an ECORASTER® area considered "permeable"?

More than 95% of the ECORASTER® surface is permeable/ open, so no water column can accumulate. In the end it is up to the local authorities to declare „permeability“ in order to save taxes or fees.

Can I install ECORASTER® w/o substructure?

Yes you can! But in some circumstances there might be limitations to the performance of the ECORASTER® system. Thanks to the interlocking system and the excellent area load balancing ECORASTER® can be installed without substructure. If you do not use a substructure (water-storing bed) area drainage is not ensured. Additionally soil changes can effect surface irregularities and cause different loadabilities. If you plan to install without substructure, despite any possible restrictions, please contact us, we are eager to help you.

Are plastic reinforcement tiles less durable?

Not if you focus on quality! We offer our ECORASTER® with 20 years warranty and with the best possible value. possible. Being the raw material producer and the product manufacturer we can ensure a constantly high quality. Promise! Our system is made of recycled LDPE (recycable), heavy-duty, weatherproof and UV-resistant.

Do I have to place an edging?

No! The structure of the ECORASTER® tiles contains plenty of expansions joints which make an edging unneeded. Just keep about 5cm | 2 inches space to the border. Herewith you will gain another (all round) expansion joint.

Is ECORASTER® eco-friendly?

PURUS PLASTICS operates one of the worlds most modern plastics recycling facility. Our products are eco-neutral and are engineered/ produced in Germany. We focus on a high input of recycled materials and the that our products remain recycable. That way we are saving more than 25,000 tons CO2 per year and make sure that we produce sustainable products.

Basic information | Safety notes • Allgemeine Hinweise | Sicherheitshinweise

Dear customer,

Thank you for choosing the original ECORASTER®. You made your choice for a premium class product that combines high performance and eco-friendliness. Our products are subject to our constant quality checks to match highest requirements. We want you to have to best possible and most enduring benefit from ECORASTER® and appreciate that you take notice of the following information.

Thank you for your choice, PURUS PLATICS GmbH Germany.

Important information. Read carefully and keep for further reference.

- Please read the manual before handling ECORASTER®. For questions please contact your dealer/ sales representative.
- Please make sure that you always wear appropriate protective wear during handling (cutting, laying and filling) with ECORASTER® (safety goggles, gloves, ear and breathing protection, safety shoes and hardhat) and mind your environment and third parties. Do not breathe dust from cutting.
- ECORASTER® is inapplicable to bridge terrain indentations (e.g. holes, ditches and troughs).
- ECORASTER® is only extendable with original accessories.
- Do not combine ECORASTER® with third-party products.
- Make sure that substructure is level and sufficiently dimensioned.
- Make sure that all ECORASTER® are locked proper before filling.
- Please dispose no longer required ECORASTER® according to your local waste regulations.

WARNING

- Surface might be slippery when wet and icy
- Inappropriate handling (e.g. wrong transport or wrong storage) might cause (personal) damage.
- Broken or incorrect placed ECORASTER® might cause (personal) damage and influence the functionality. Beware of sharp edges.
- ECORASTER® is flammable. Don't breathe fumes of burning elements.

Sehr geehrte Kundin, sehr geehrter Kunde,

mit unserem original ECORASTER® haben Sie sich für ein erstklassiges Produkt entschieden, dass Umweltfreundlichkeit und hohe Leistungsfähigkeit kombiniert. Unsere Produkte unterliegen ständigen Qualitätskontrollen, um unseren Anforderungen zu entsprechen. Wir möchten, dass Sie lange Nutzen und Freude an Ihrem ECORASTER® haben und bitten Sie daher einige Hinweise zu beachten.

Vielen Dank für Ihre Wahl, PURUS PLASTICS GmbH Deutschland.

Wichtige Information. Sorgfältig lesen. Diese Information aufbewahren.

- Bitte lesen Sie vor der Verarbeitung der ECORASTER® die Anleitung. Für Fragen steht Ihnen Ihr Händler gern zur Verfügung.
- Bitte tragen Sie bei der Verarbeitung (dem Zuschneiden, der Verlegung sowie dem Verfüllen) angemessene Schutzbekleidung (Sicherheitsschuhe, Schutzbrille, Handschuhe, Mundschutz, Gehörschutz, Kopfschutz) und achten Sie auf Ihre Umwelt und Dritte. Abrieb, z.B. durch Zerspanen, bitte nicht einatmen.
- ECORASTER® eignet sich nicht zum Überbrücken von Geländevertiefungen (z.B. Gräben, Löcher, Mulden)
- ECORASTER® kann nur mit originalem Zubehör erweitert werden. • ECORASTER® ist nicht mit fremden Produkten kombinierbar.
- Der Unterbau muss vor dem Verlegen eben und ausreichend dimensioniert sein.
- Bitte prüfen Sie vor dem Verfüllen der ECORASTER® auf einwandfreie Verhakung der Elemente.
- Bitte entsorgen Sie nicht benötigte ECORASTER® gemäß den national geltenden Abfallbestimmungen.

ACHTUNG

- Oberfläche kann durch Eis und Nässe glatt sein.
- Unsachgemäße Handhabung (z.B. falscher Transport oder fehlerhafte Lagerung) kann zu (Personen-) Schäden führen.
- Beschädigte oder unsachgemäß verlegte ECORASTER® können (Personen-) Schäden verursachen und die Funktion des Bodengitters beeinträchtigen. Achtung vor scharfen Kanten.
- ECORASTER® sind brennbar. Die Dämpfe brennender Kunststoffgitter nicht einatmen.

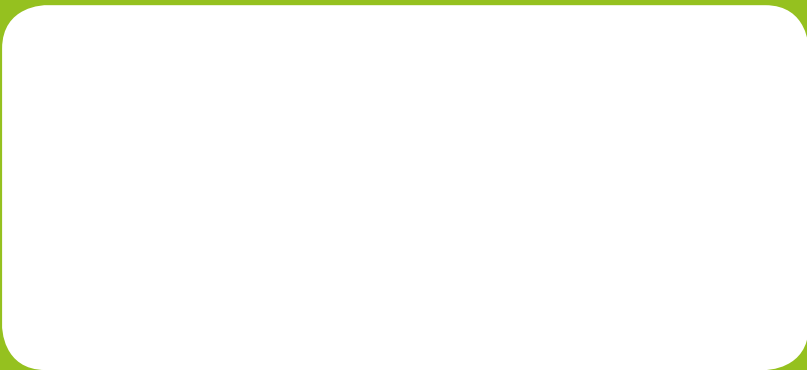
Safety signs in accordance to ANSI Z535



Developing sustainable solutions for
a permeable ground reinforcement.



German engineering – worldwide on duty.
Questions? Please give us a call or contact your local dealer:



ECORASTER®
Das Bodengitter

PURUS PLASTICS GmbH | Am Blätterrangen 4 | 95659 Arzberg
Tel. +49 9233 7755-0 | Fax +49 9233 7755-50 | info@purus-plastics.de

www.purus-plastics.de

ECORASTER® is a PURUS PLASTICS GmbH brand.
Subject to change without prior notice. E. & O. E.

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