INSTALLATION GUIDE

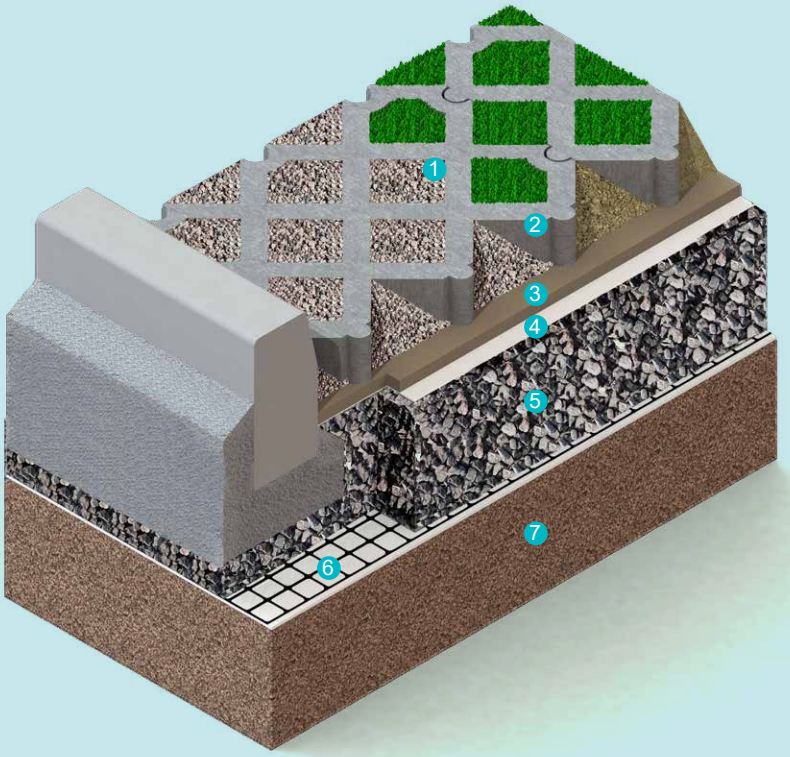
R. H. Moore & Associates
Soil Stabilization & Erosion Control

EcoBlock (EB)

Recycled Plastic Turf Block

The sustainable & interconnecting solution for residential & commercial parking, laneways and more

TYPICAL INSTALLATION FOR EB INFILTRATION



1 Grass seeded or gravel finish

2 EB

Grass

Good quality, free-draining friable topsoil, seeded at 6–10 lbs per 1,000 ft², pre-seeding fertilizer applied.

Gravel

Clean, free-draining angular crushed rock ¼–⅝". Do not use rounded or river washed gravel.

3 Grit bedding

Clean coarse ⅛–¼" grit compacted to ¾".

4 Geotextile filtration layer

Non-woven needle-punched, minimum 3.25 oz/yd².

5 Free-draining engineered sub-base

Free-draining granular base with a depth to suit the anticipated loading. N.B. Standard granular base is not suitable as it's not free-draining.

6 Geotextile separation layer/Geogrid

Mirafi® BXG120 geogrid on a non-woven needle-punched geotextile, minimum 3.25 oz/yd².

7 Sub soil

Establish CBR value to calculate depth of free-draining granular base.

EB attenuation with gravel

A sealed geomembrane should be installed between the geotextile and the subgrade to prevent infiltration. Surface water should be directed to a suitable outlet.

R. H. Moore & Associates, Inc.
7834 Depot Lane
Tampa, FL 33637

(813) 988-0200
info@rhmooreassociates.com
www.rhmooreassociates.com

100% recycled
100% recyclable

OVERVIEW

Material	**100% recycled polyolefins**
Nominal size	**23⅝" x 15¾" x 3⅛"**
Unit weight	**19.8 lbs** (79.2 lbs per 10.8 ft², 4 grids)
Coverage	**1 block = 2.58** ft²
Compressive strength	**388,800 psf** (2,700 psi)
Connection type	**Tongue and groove**
Cell wall width	**1⅝"**
Color	**Gray**

Parking markers	**Standard thermoplastic road paint**
Infiltration rate	**298"/hr** for gravel
Pallet size	**45" x 46" x 91"** (27 layers of 5)
Pallet details	**135 blocks, 2,673 lbs** (16 pallets/load)
Compliant with	USA: **Americans with Disabilities Act** Canada: **Charter of Rights and Freedoms & The Canadian Human Rights Act**

Full testing information available on request

TRIED & TESTED

Porous paving is increasingly used in North America and worldwide for access, parking lots, truck parking and bus terminals. The first porous paving systems were made of concrete, but concrete has weight, flexibility and durability limitations. This is why grids made of 100% recycled plastic are so effective.

As well as environmental benefits and the ability to take very high dynamic loads, **EB** flexes under pressure rather than breaking like equivalent concrete products. **EB** is not plagued by frost damage (unlike concrete), is lightweight by comparison and very robust when handled. **EB** doesn't crack if dropped, it can be carried/installed by a single person and complies with manual handling guidelines.

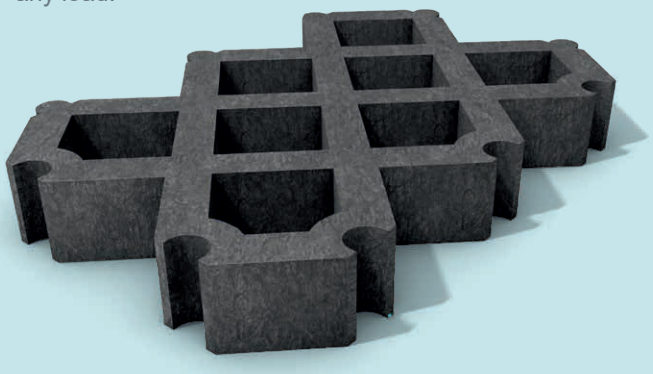
Strength testing

The most common testing for heavy duty loads is **SLW60**. Although useful, these tests only prove if a block can bear the static load of a multi-axle 66 ton truck. Most plastic grid systems meet this standard.

As well as meeting SLW60/HS-25 requirements, unlike most competitors, **EB** has been extensively tested to DIN EN ISO Standards for:

- Bending stress at 41°/73°/149°F (5°/23°/65°C)
- Timed bending stress at 1, 24 and 100 hours
- Tensile strength (ultimate and timed)
- Compressive strength at 1, 2, 10 and 20% deflection
- Charpy impact resistance
- Shore hardness (impact)
- Ball striking hardness
- Density, water absorption, thermal expansion and screw pull-out strength

Standard concrete units have a flexural strength of at least 725 psi. **EB** achieves 2,200 psi so it can flex under pressure instead of cracking. Typical trucks exert a static tire load of around 120 psi. The **EB** crushing strength of 2,600 psi means it bears virtually any load.



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INSTALLATION INSTRUCTIONS

1. Excavate and prepare the area. Install any curb or edge restraint and lay the geotextile separation layer with the geogrid on top (for attenuated areas, add a sealed geomembrane beneath). Add the engineered free-draining stone base layer to the recommended depth and compact.
2. Install a second separation geotextile layer, lay and compact the grit bedding and screed to level.
3. Lay the first **EB** units along a straight edge or curb, if against a curb leave a 1" expansion gap. Work to string lines, in a similar way to laying block paving. Work across the site in rows, making sure that the tongue and groove fits together. The grids can be laid in either orientation and staggered bond, if required.
4. **EB** units can be cut to size with a standard stone cutter, but avoid cutting pieces to less than 1/3 of a unit.
5. **Grass finish**
   Fill the grids with good quality friable topsoil and sweep off any excess. Use a vibrating plate to bed the units in and settle the topsoil to just below the grid top. Sow the grass seed mix at 6–10 lbs per 1,000 ft² and apply a good quality fertilizer. Water the area regularly in the initial growing period and, ideally, wait until the second cut of the grass before vehicular use.
   Gravel finish
   Fill the grid cells with angular ¼–¾" gravel (rounded gravel is NOT recommended). Use a vibrating plate to bed the units in and settle the fill. Top the gravel up so that it is level with the grid. Vehicles can use the area as soon as the grids have been filled.
6. Routine maintenance, weeding and debris clearing will prevent any reduction in the porosity of an area paved with **EB**. For specialist maintenance such as snow clearing:
   a. Use a rubber-edged plow OR a metal edged snow blade at least 1" off the surface.
   b. Take extra care in extreme cold conditions due to frozen grass. Check the surface when thawed and repair as required.

» Quantity calculations

- Bedding grit: 820 lbs per 100 ft²
- Gravel infill: 1,430 lbs per 100 ft²
- Topsoil infill: 1,270 lbs per 100 ft²

Laying rates

A three-person team can lay up to 3,230 ft² per day.

Expansion

EB should be installed with a $^{1}/_{32}$ - $^{1}/_{16}$ " gap between units. This allows the tongue and groove to fit while accommodating a 70–90°F (25–30°C) temperature change. For larger areas, a 1" gap (filled with gravel/ topsoil) should be left between any hard edge or curb.

Installation on gradients

The maximum gradient for vehicle use is 8% (1 in 12).

Introducing hanit®

hanit® is an exceptionally strong, versatile and durable material made from 100% recycled plastic.

Unlike wood, concrete or steel, weather isn't a problem for **hanit®**. It's also lighter than concrete and cheaper than steel. **hanit®** will never rot or rust. It won't splinter with age or crack in extreme cold. It's easy to work with, looks good all year round and needs little or no maintenance.

hanit® is completely moisture-repellent and performs exceptionally well in wet or damp conditions. It is produced without preservatives, is non-toxic and non-polluting. Best of all, it reduces the strain on landfill and is 100% recyclable.

Subgrade strength

Consistency	Indicator			Strength	
	Feel to touch	Visual	Mechanical	CBR%	*CU (kN/m²)
Very soft	Hand sample squeezes through fingers	Man standing will sink >3”	<2	<1	<25 (3.6psi)
Soft	Easily molded by finger pressure	Man walking sinks 2”–3”	2–4	Around 1	Around 25 (3.6psi)
Medium	Molded by moderate finger pressure	Man walking sinks 1”	4–8	1–2	25–40 (3.6–6psi)
Firm	Molded by strong finger pressure	Utility truck ruts 1/2”–1”	8–15	2–4	40–75 (6–11psi)
Stiff	Can’t be molded, indented by thumb	1” – loaded construction vehicle	15–30	4–6	75–100 (11–15psi)

Information in this document is a given as a guide only. We accept no responsibility for loss or damage resulting from the use of this guide.
*CU refers to undrained shear strength and is expressed in kN/m² (psi).

Sub-base depths

Typical use	CBR (%) of subgrade	Free-draining base depth		Use of geogrid
		inc. geogrid	exc. geogrid	
• Fire routes, buses, emergency vehicles, forklifts, truck access, shoulder reinforcement next to highway, rest areas etc.	>6	4”	6”	Mirafi® BXG120
	4–6	5”	7”	Mirafi® BXG120
	2–4	7.5”	11.5”	Mirafi® BXG120
	1–2	15”	23”	Mirafi® BXG120
• Lighter duty use – occasional trucks, vehicular access and overspill parking	>6	4”	6”	Mirafi® BXG120
	4–6	4”	6”	Mirafi® BXG120
	2–4	5.5”	8”	Mirafi® BXG120
	1–2	10”	15”	Mirafi® BXG120

Note: If no geogrid, sub-base depths above should be increased by 50%, as indicated above. (Type BXG120 refers to tensile strength in kN/m²).

Typical grass seed mixes (local variants of specific traffic tolerant grass seeds should be considered)

General parking
- 50% Perennial ryegrass
- 20% Slender creeping red fescue
- 25% Strong creeping red fescue
- 5% Browntop bentgrass

Accessways
- 30% Hard fescue
- 20% Chewings fescue
- 20% Slender creeping red fescue
- 25% Strong creeping red fescue
- 5% Browntop bentgrass

Shoulders/medians
- 35% Smooth stalked meadow grass
- 30% Slender creeping red fescue
- 25% Perennial ryegrass
- 10% Browntop bentgrass

Courtesy of www.pavingexpert.com

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