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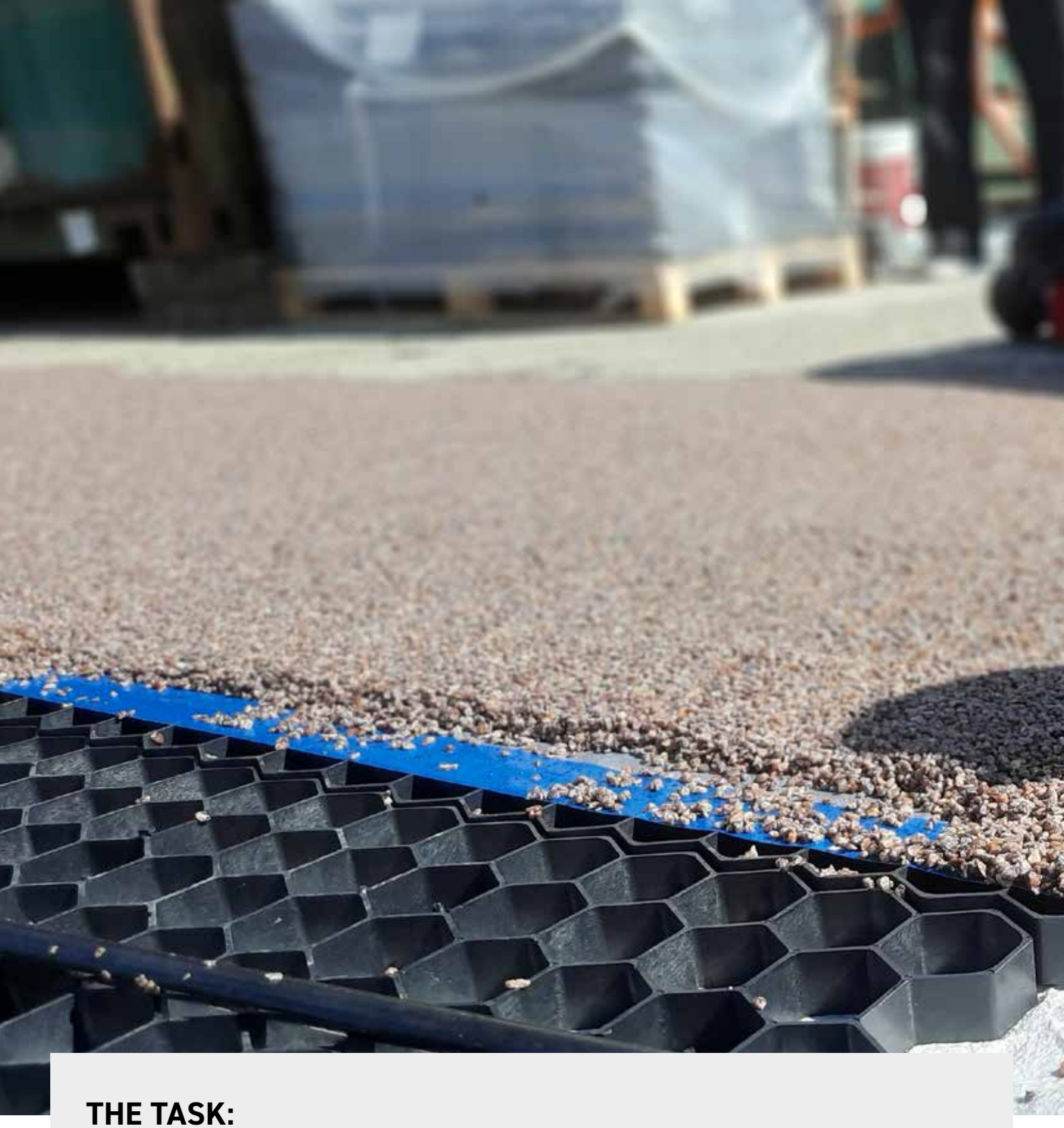
# PLASTIC TURF GRID/GRASS HONEYCOMB FILLED WITH ROMEX® GRIT & GRAVEL BINDER

CASE STUDY

ROMEX®



## THE TASK:

ROMEX® was asked by manufacturers of so-called gravel / grit turf grids / honeycombs whether their honeycombs can be filled with ROMPOX® binders bound gravel and/or grit and how this behaves with 'light traffic load', especially for house driveways with car, SUV and delivery van traffic. While pure walking traffic is unproblematic, the answer was unclear in the case of areas with traffic.

For this reason, a trial was carried out to test this.


# TEST SETUP

**Date:** Monday, 05.06.2023
**Location:** ROMEX® company premises, Mühlgrabenstr. 21, 53340 Meckenheim
**Weather:** Dry, sunny, temperatures between 15 and 25°C

**Products used:**
**ROMPOX® - 201 DEKO UV:** UV-stable grit and gravel binder, ideal for white/light-coloured grit and gravel as well as calcium carbonate-containing stones such as marble, chalk and sand-lime brick.

**ROMPOX® - 202 DEKO EP:** Especially suitable for dark-coloured stones.

**Important:** Grit and gravel must be washed and dried before using ROMEX® Grit & Gravel Binders in order to avoid loss of strength.

**Work safety:** The use of impermeable and resistant protective gloves, tight-fitting safety goggles and protective work clothing is recommended during work.

# APPLICATION AREA

The sample areas were laid out on about 45 m² in three scenarios:

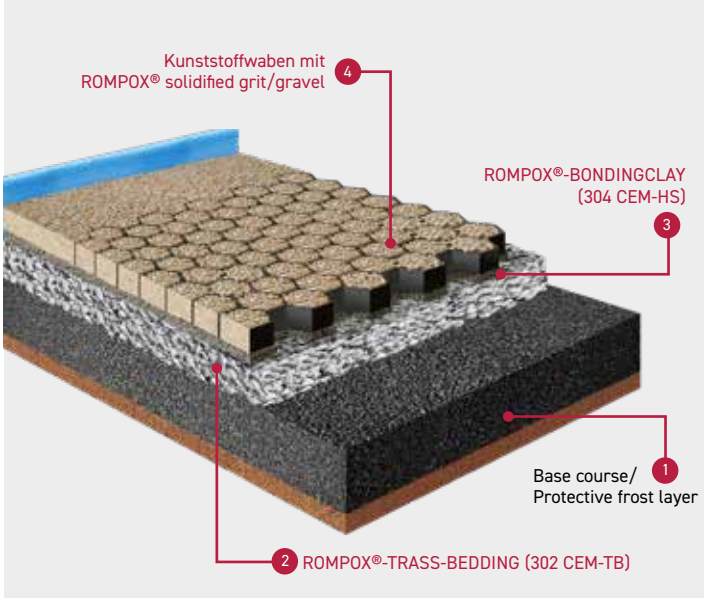

The products ROMPOX®- 201 DEKO UV and ROMPOX®- 202 DEKO EP were then used to professionally apply longitudinal strips to all superstructures. The product ROMPOX®- 201 DEKO UV was applied with two white marble grits a) 4/7 mm and b) 2/4 mm with 5% binder content each, ROMPOX®- 202 DEKO EP with brown granite grit 3/5 mm and 6% binder content.
This corresponds to the ROMEX® binder recommendations for light traffic loads.

# BOUND BEDDING

**SCENARIO 1**
**Bound bedding:**
about 5 cm of ROMPOX®-TRASS-BEDDING (302 CEM-TB) and the plastic honeycomb elements laid on top of this with ROMPOX®-BONDING CLAY (304 CEM-HS), levelled with the adjacent structure so that the individual honeycombs remain visible after backfilling with ROMPOX®-solidified gravel/chippings.

**Usage of solidified gravel/grit:**
- 45 kg/m² (ROMPOX®- 201 DEKO UV with 4/7 mm gravel: 2,25 kg/m²)
- 45 kg/m² (ROMPOX®- 201 DEKO UV with 2/4 mm gravel: 2,25 kg/m²)
- 45 kg/m² (ROMPOX®- 202 DEKO EP with 3/5 mm grit: 2,70 kg/m²)

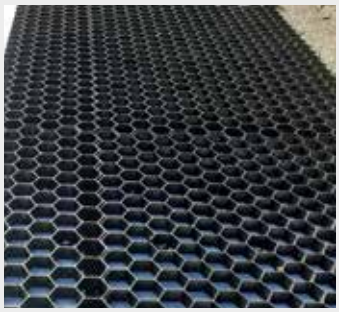
**Evaluation after one year:**
All surfaces nearly undamaged, **test passed.** ✓




**SCENARIO 2**
**Bound bedding:**
As 1), but with 15-20 mm grit/gravel overlay so that the plastic honeycombs are no longer visible.

**Usage of solidified gravel/grit:**
- 65 kg/m² (ROMPOX®- 201 DEKO UV with 4/7 mm gravel: 3,25 kg/m²)
- 65 kg/m² (ROMPOX®- 201 DEKO UV with 2/4 mm gravel: 3,25 kg/m²)
- 65 kg/m² (ROMPOX®- 202 DEKO EP with 3/5 mm grit: 3,90 kg/m²)

**Evaluation after one year:**
At the joints of the honeycomb grid elements, predetermined breaking cracks, larger chipping and defects formed. **This type of paving is not recommended for vehicle loads.**

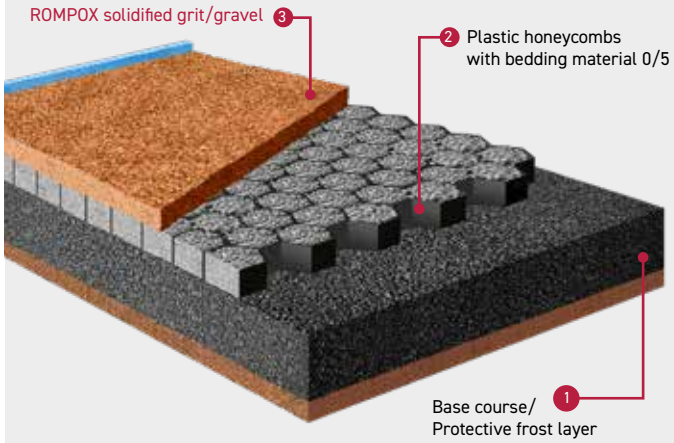



# UNBOND BASE LAYER

**SCENARIO 3**
The plastic honeycombs were laid unbound on the base course and filled with 0/8 bedding material. Approx 50 mm of stabilised grit/gravel was then applied

**Usage of solidified gravel/grit:**
- 60 kg/m² (ROMPOX®- 201 DEKO UV with 4/7 mm gravel: 3,00 kg/m²)
- 60 kg/m² (ROMPOX®- 201 DEKO UV with 2/4 mm gravel: 3,00 kg/m²)
- 60 kg/m² (ROMPOX®- 202 DEKO EP with 3/5 mm grit: 3,60 kg/m²)

**Evaluation after one year:**
All surfaces nearly undamaged, **test passed.** ✓




On the following morning, 06/06/2023, a new sealing coat was applied in accordance with the manufacturer's instructions. In the documents, it is pointed out that the surface must be sealed immediately after setting with the same binder system using a fur roller in the event of heavy use. About 200-300 g/m² is required for re-sealing. This process should be repeated on average every three years.

# ENDURANCE TEST

Cars, trucks and co

After a week, the surface was released for full load and the 'worst-case scenario' occurred, as the surface was not only parked and driven on by cars, but forklift trucks with 1 tonne loads and trucks also drove on the surface. This is of course more than the 'light traffic load up to 3 tonnes' category approved by the manufacturer.


## MAINTENANCE AND CARE

Regular cleaning with a high-pressure cleaner, minor repairs to settlement cracks and resealing with the pure binder every two to three years can ensure the medium and long-term maintenance of such surfaces. This provides you with an alternative to paved surfaces or other path coverings.

**GENERAL INFORMATION**

**Planning**: The substrate should be constructed according to the expected traffic load. The surface and substructure must be water-permeable. The regulations and information sheets for the construction of paved surfaces must be observed. Subsequent loads must not cause the surface to settle. The use of ROMEX® Trass bedding products is ideal. The use of ROMEX® processing tools is recommended for optimum processing. Depending on the size and shape of the surface, sufficient expansion joints must be planned according to physical principles.

**Notes**: Please note that the calculation of the weight of the grit/gravel is only an approximate value. The materials used are natural building materials and are therefore subject to natural fluctuations. When compacted, the volume decreases, which increases the material requirement.

# EXCURS

RESTORATION OF CRACKS AND REPAIR OF DEFECTS:

In the case of cracks in gravel/grit coverings caused by tension or subsidence, basic cleaning, for example with a powerful high-pressure cleaner, is recommended. All loose particles should be removed.

Then use the same gravel/grit with the same binder or, if available, one to two millimetres smaller gravel/grit of the same type. **The use of gravel/grit of the same grain size ensures the best results. For finer cracks, the use of smaller gravel/grit is recommended.**

The gravel/grit is then mixed with the originally used 'ROMEX® gravel and grit binder'. Some of the mixed material is applied to the crack/defect as a primer with a brush or a fur roller and then worked deep and compacting into the crack/defect.

Possible colour differences between the old and new surface will even out over time.

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