terrasystem®



DEVELOPED IN GERMANY · MADE IN GERMANY

Water-permeable surfaces and ballast stabilization

Patented binder systems for roads, squares, pool surrounds, railways and desert dust control.

KLARCHEM®

Authorized distributor in 24 countries across Türkiye, the Middle East, North Africa and Eurasia

THE PROBLEM

Sealed surfaces don't absorb rain. They only redirect it.

Conventional surfaces such as asphalt and concrete seal the soil. Rainwater collects on the surface, overloads the sewers and comes back to the city as infrastructure cost.

01

Flooding and standing water

Rainwater concentrates in the sewer network; heavy rain increases the risk of flooding.

02

Falling groundwater levels

Sealed soil cannot breathe, and rainwater no longer reaches the groundwater.

03

Costly infrastructure

Drainage channels, precise gradients and regular maintenance are required.

04

Environmental burden

Asphalt can leach oil and tar; removal and disposal are expensive.



THE SOLUTION

Stones bonded only at their contact points.

TerraSystem permanently bonds natural stone aggregate with an organic binder in two layers. Open voids remain between the stones, so the surface is both durable and water-permeable.

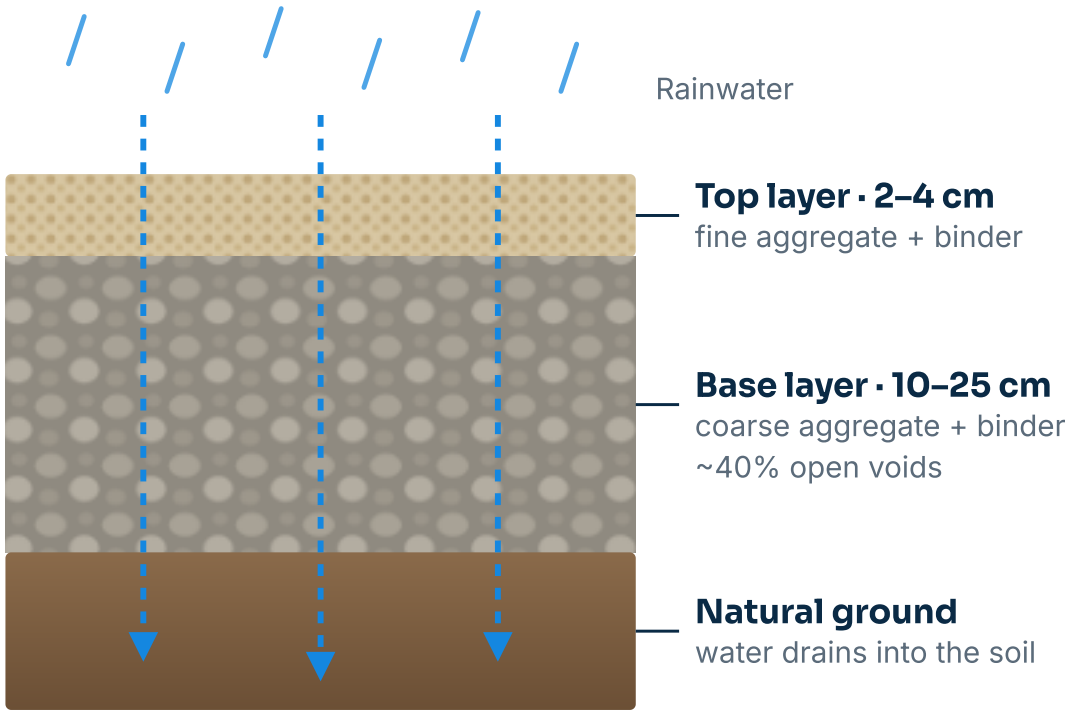
40%
open void content

1 l/s·m²
water permeability

−50 / +80 °C
temperature resistance

INSTALLATION

Two layers, standard road equipment.



1 Base layer
Coarse aggregate (8/11 – 22/33 mm) is mixed with the binder, laid 10–25 cm thick and compacted.

2 Top layer
Once the base has hardened, fine aggregate is laid 2–4 cm thick in a viscous consistency.

3 Compaction
Compacted with a smooth-wheel roller, creating a seamless, non-slip, water-permeable surface.

4 Opening to use
With a 25+4 cm build-up: full load, including heavy goods traffic, after 24 hours.



APPLICATIONS

From roads to pool decks, one system.









Further applications

- Roads, paths and squares
- Car parks and vehicle areas
- Car wash areas
- Public toilets
- Green spaces and golf courses
- Coastal protection and sand stabilization

Non-slip when wet · seamless · different colours with natural stone

BENEFITS

Cost

- No drainage channels or gradient design
- Fast installation, ready in 24 hours
- Easy cleaning, low-cost seamless repairs
- Long service life, no permanent rutting

Safety

- No aquaplaning or spray
- Non-slip surface when wet
- Less icing
- No frost cracks or potholes

Environment

- No leaching of oil or tar
- Water hazard class 0
- Sound-absorbing structure
- Less winter salting

Photos: TerraSystem projects



RAILWAYS

Ballast stabilization

Epoxy resin is sprayed onto the ballast with a mobile two-component mixing machine. The stones are point-bonded, so the track keeps its drainage capacity and needs less maintenance.

- Switch areas and transitions between ballasted and slab track
- Surface bonding against flying ballast and vandalism
- Easier cleaning at stations and stops
- Track protection at temporary construction sites
- Bonded ballast can be recycled and reused

Your benefits

- Low maintenance costs, long service life
- Sound-absorbing effect in urban rail transport
- Can be applied even in extreme weather
- Drainage capacity fully retained
- No special disposal required



DESERT DUST CONTROL

Keeping sand where it belongs.

Sandstorms leave sand hills on roads, reduce driving safety and cause high cleaning costs for city administrations. TerraSystem's special binder is sprayed onto the sand and fixes the grains by point bonding.

Road safety
Designed to reduce sand build-up on roads and highways

Cleaner cities
Designed to reduce dust pollution in urban areas

Spray application
The specially developed binder is applied by spraying

How does it work?

The sand grains are bonded to each other only at their contact points. This creates a stable surface that resists thrust and traction forces, so the sand is no longer carried away by the wind.

TECHNICAL SUMMARY

TerraSystem in figures

Layers	10–25 cm base + 2–4 cm top (max. 29 cm in total)
Base aggregate	from 8/11 mm up to 22/33 mm
Water permeability	10,000 l/s·ha (1 l/s·m²)
Void content	approx. 40%
Tensile strength	base min. 13.2 N/mm² · top min. 12.3 N/mm²
Temperature resistance	from −50 °C to +80 °C
Opening to use	full load after 24 hours with a 25+4 cm build-up
Application	Standard road mixers, paver, smooth-wheel roller
Water hazard class	0

Source: TerraSystem GmbH technical documents

TESTS AND CERTIFICATES

Tested by independent institutes.

TU Munich

Research report No. 2362 (2007)

Load-bearing capacity under heavy lorries and forklifts many times higher than asphalt.

Marth engineering office

Test report No. 8307

Frost and de-icing salt resistance of the binder.

Exova Brandhaus Höchst

Certificate No. 2005-1858-K1

Fire class Bfl-s1 (flame retardant) according to DIN EN 13501-1.

Hygiene Institute of the Ruhr Area

Test report No. C-143616-06-BS

Suitability in terms of groundwater hygiene.

WHY KLAR CHEM

Your authorized TerraSystem distributor.

Klar Chem is the authorized distributor of TerraSystem GmbH in the 24 countries below (distributor certificate available at klarchem.com/terrasystem).

24	12+	40+	ISO 9001:2015
countries as authorized distributor	years of industry experience	countries supplied	quality management system

Türkiye · Saudi Arabia · UAE · Qatar · Kuwait · Bahrain · Oman · Iraq · Jordan · Lebanon · Syria · Egypt · Libya · Tunisia · Algeria · Morocco · Russia · Ukraine · Georgia · Azerbaijan · Kazakhstan · Uzbekistan · Kyrgyzstan · Turkmenistan

LET'S TALK ABOUT YOUR PROJECT

We will prepare the right system and a quote for you.

Send us for a quote

- Area size (m²)
- Type of use: pedestrian, vehicle, pool, railway, desert dust
- Location and, if available, photos of the ground
- Planned installation date

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