



TTE®

**IN EQUESTRIAN
SPORTS & HORSE
HUSBANDRY**

 **HÜBNER-LEE**

"WHAT WE DO
today
DETERMINES HOW
THE WORLD WILL
LOOK LIKE
tomorrow."

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Together for tomorrow.
Thank you for your interest in
HÜBNER-LEE's solutions for equestrian
sports and horse husbandry. You are
making a good choice with them.
Economically. Ecologically. Emotionally.





This is us.

The company founders Ernst Hübner and Gyung-Hyun Hübner-Lee. Three siblings following in their parents' footsteps. A great team that invests its time and heart and soul in a green future. This is HÜBNER-LEE.

As a down-to-earth family business, we have been your reliable partner in equestrian sports with dedication and expertise since 1991. No matter whether you are an expert horse keeper, a professional competition rider or a passionate hobby rider: make your project a success with us. For you and your horses.

Yours, Nicole Hübner
B. Sc. Horse Management



More than 30 years of experience



6 mio. square metres TTE® installed in Europe



Full of heart and soul four your project

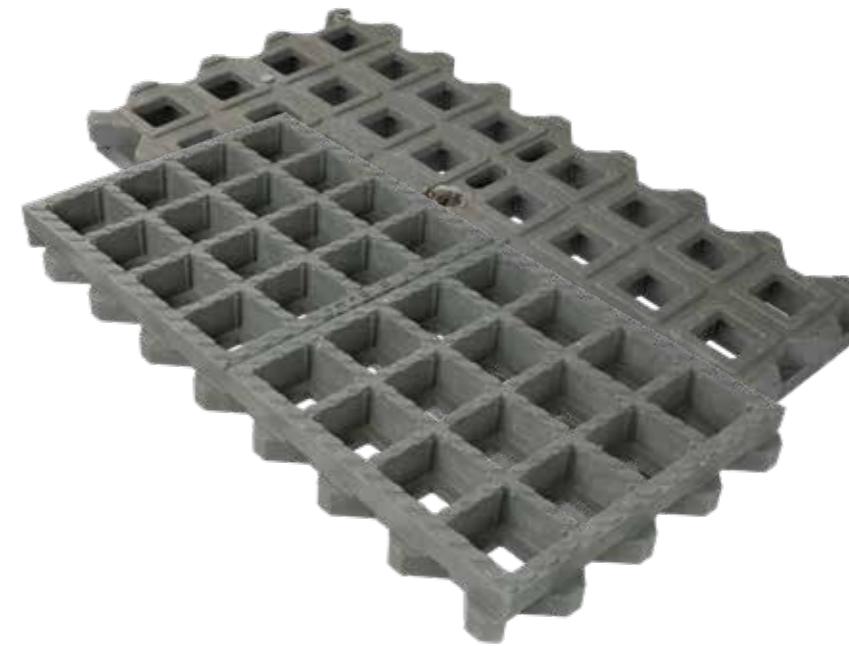


Team



TTE® MULTIDRAIN^{PLUS}

PRODUCT DATA




 **MADE IN GERMANY**



Material	100 % recycled plastics (Der grüne Punkt / Gelber Sack, Gelbe Tonne)
Dimensions	80 x 40 x 6.2 cm plus 1.5 interlocking joints
Grid thickness	inner grid approx. 1.5 cm, outer grid approx. 2 cm
Weight	8.7 kg (approx. 27 kg/m ²)
Loading capacity, static	147 kN (approx. 15 t) per test specimen (23 x 23 cm, unfilled) (tested by TÜV SÜD in acc. with DIN 53454)
Loading class	suitable for heavy traffic up to 20 t axle load
Top	anti-slip, nubbed grid
Bottom	wide T-support with 4.2 cm



Carbon Neutral Product
firstclimate




TÜV SÜD
RUC-KSP-A 1029
www.tuev.com/ik

Lawn Grids

- mechanical and physical characteristics
- resistance to liquids and environmental stability
- thermal testing
- analytical testing of materials



THIRD-PARTY VERIFIED
EPD
ISO 14025 and EN 15804
Institut Bauen und Umwelt e.V.



DLG SIGNUM TEST
05/09 **bestanden**

TTE® is the first and only paddock slab that has passed the DLG-Signum test. The performance, durability and animal-friendliness of the TTE® system have thus been independently confirmed.

The whole certificate at www.huebner-lee.de/dlg-signumtest (available in German language)

Moreover, the TTE® system is TÜV SÜD certified: It is loadable up to 20 t axle load, UV-stable, environmentally neutral, dimensionally stable, as well as weather and chemical resistant.



LYING AREAS



PADDOCKS



NON-SLIP AREAS



JUMPING AND DRESSAGE ARENAS



REINING ARENAS



FEEDING STATIONS



COURTYARD AND PARKING SPACES



MECHANICAL MANURE REMOVAL



*One grid.
Countless possibilities.*

The TTE® system makes it easy for you to build your equestrian facilities. With only one plate, you can reinforce all surfaces. Thanks to the different filling variants, you can easily meet all of your and your horses needs.

Multitalent

highly-performant



CO₂ compensated & from 100% recycled post-consumer plastics

TTE® is produced from 100% recycled post-consumer plastics. Instead of being incinerated, this valuable raw material is given a second life.

And: TTE® has been produced 100% CO₂ compensated since 2021.



Areal load distribution

The horizontal-vertical bond of the TTE® elements absorbs the point loads of the horses' hooves and distributes them areally - similar to a snow shoe.

The innovative connection system ensures 100% even surfaces and prevents individual grids from breaking away.



Soil protection

TTE® can be installed without a complex substructure, so that the living soil zone with all the microorganisms living in it is preserved.

Millions of animals, protozoa and fungi break down nitrate and ammonia and thus prevent unpleasant odours and harmful bacteria from developing.



100% seepable & unsealed

With its water-permeable and non-compacted on-top construction, TTE® offers high-performance surface drainage.

Mud and puddles? Are a thing of the past with TTE®.



Joint protection

The interaction of the elastic wood layer with the solid yet flexible bond of the TTE® elements creates an area-elastic effect. Similar to a naturally oscillating natural lawn - but with constantly consistent quality.

The horses' joints are protected without overloading the animals' tendons and ligaments.



Cost and material savings

Due to the unique load-distribution of the TTE® elements, only a low installation height is required. This saves time, material and disposal costs.

And: if you wish, you can lay your TTE® surface yourself. Without the need for skilled personnel or expensive construction machinery.

& close to nature

SUSTAINABILITY

A close-up photograph of a red earthworm in dark, rich soil. The worm is positioned horizontally across the middle of the frame, its segmented body clearly visible. The soil is dark brown and appears moist, with some small green plants and leaves scattered around. The background is slightly blurred, emphasizing the worm and the soil.

SUSTAIN- ABILITY

TTE® makes an important contribution to environmental and climate protection. Through the ecological construction method, the closed material cycle and the CO₂ compensated production of TTE®, we are jointly shaping a green world for future generations.

5.2

million
tons of
post-consumer
plastics
per year

67%

incineration

18%

material
recycling

15%

export

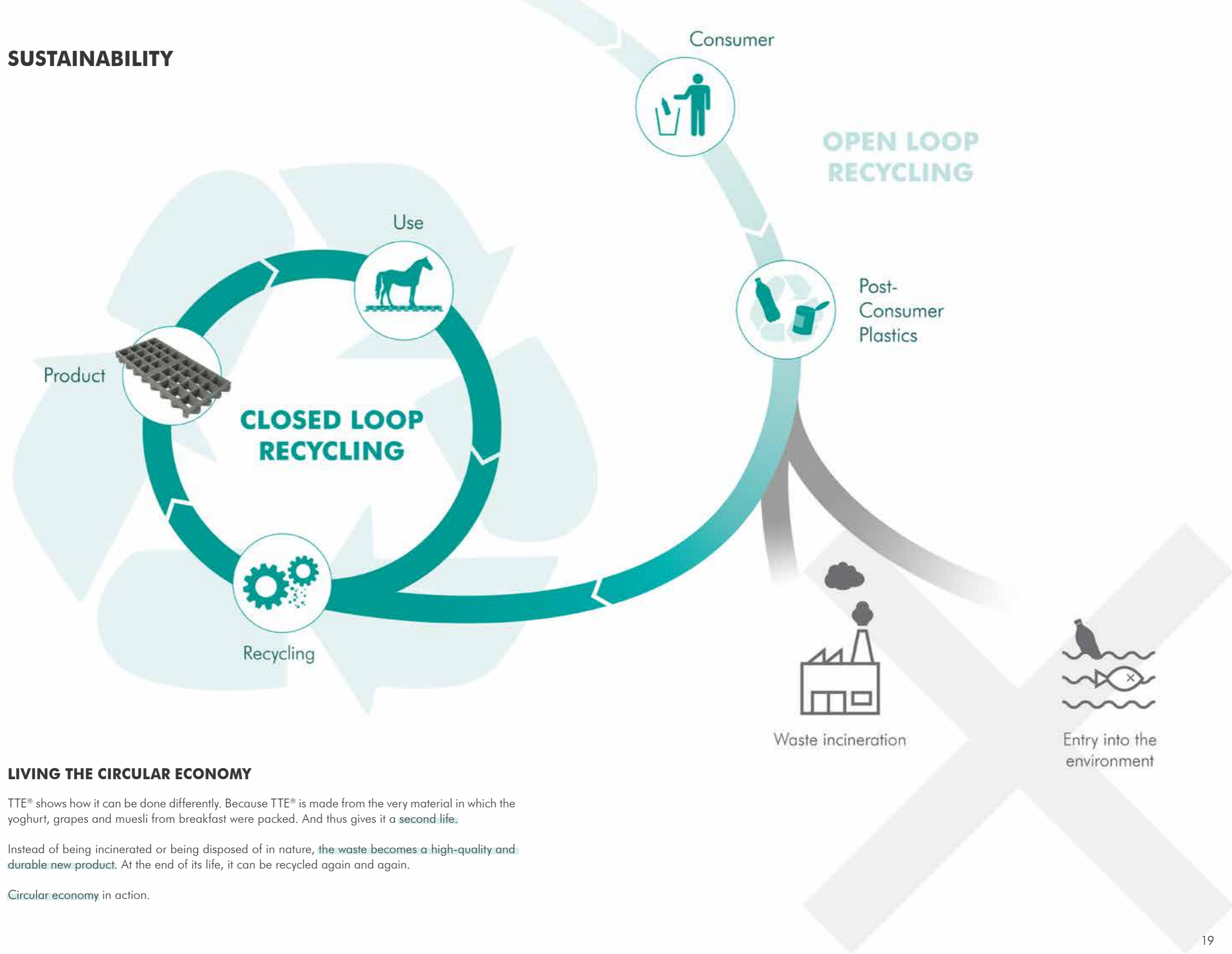
We get up in the morning. First a delicious breakfast of yoghurt, grapes and some muesli. At lunchtime we have a cheese sandwich and a coffee at the bakery around the corner. And in the evening, we cook for the whole family. Maybe pasta with a vegetable sauce? Or rather steak with some oven potatoes and salad?

If we look at our day, we realise: no matter how hard we try, eating alone produces tons of packaging waste.

The amount of plastic waste produced in Germany every year is frightening. It was a whole 5.2 million tonnes in 2017. 5,200,000 tonnes. Or 52,000,000,000 kg.

What is even more frightening: only 18% of the plastic waste in Germany is currently reprocessed into new products. 15% is exported abroad and often not properly processed there. And a full 67% - almost 3.5 million tonnes - are still incinerated. And are thus no longer available to the material cycle.

SUSTAINABILITY



LIVING THE CIRCULAR ECONOMY

TTE® shows how it can be done differently. Because TTE® is made from the very material in which the yoghurt, grapes and muesli from breakfast were packed. And thus gives it a second life.

Instead of being incinerated or being disposed of in nature, the waste becomes a high-quality and durable new product. At the end of its life, it can be recycled again and again.

Circular economy in action.

CO₂ COMPENSATED PRODUCTION

By choosing post-consumer plastics as the raw material for TTE®, we make an important contribution to climate protection and save 35,000 tonnes of CO₂e annually compared to incineration.

How can this be achieved? We can't produce completely without emissions. We are honest about that. That's why we have decided to support two climate protection projects that save CO₂ emissions globally.

But we do not want to rest on this contribution. That is why we have decided to produce TTE® in a CO₂ compensated way in 2021.

Scan the QR code and learn more about our climate protection projects



3 QUESTIONS AND ANSWERS ON CARBON NEUTRALITY

Purchasing climate certificates is only greenwashing, isn't it?

01

The topic of CO₂ compensation is indeed extensive. We find that buying climate certificates that contribute to the global saving of greenhouse gases makes more sense than doing nothing at all. In doing so, we pay attention to high certification standards to be sure that our project complies with the principle of additionality. This means that the project would not have been realised without financing through CO₂ certificates. But what is true in any case: **Even better than CO₂ compensation is the avoidance of CO₂.** And here, too, we try to get a little better every day. For example, by generating about 55,000 kWh of electricity per year with our photovoltaic system and using it to power our computers.

As a company, can you say at all how much CO₂e you emit and therefore have to offset?

We have a clear answer to this: **yes.** We have created a carbon footprint that has been verified by an independent third party and shows exactly how many emissions are generated in which area of our production and transport.

You can see the balance at www.huebner-lee.de/epd. In 2021, for example, we had to offset 4,000 tonnes of CO₂. That is not that much and shows that we are already on the right track in many areas.

02

03

Why don't you support local projects?

We have decided to support projects in the Global South and in Türkiye because the certificates are cheaper in these countries. Why is that good? Because we can make more of a difference in these countries with the same amount of money.

YOUR CONTRIBUTION TO CLIMATE PROTECTION

... using the example of
1.000 m²
TTE® reinforcement

64.010

This is how many kg of CO₂ equivalents you avoid compared to waste incineration.

281.982 km

The amount of CO₂ avoided corresponds to a car ride of this length (km).

13.590

Accordingly, so many bags full of plastic waste are recycled for your project.

OUR SOIL: THE SKIN OF NATURE.



The mission of our company founder Ernst Hübner in the development of TTE®: to protect the natural soil like we protect our skin.

The functions of our skin are manifold: it protects our body from heat, light, injuries and infections. We cannot live without it.

It is the same with natural soil. With its billions of microorganisms, it fulfils important functions that are the basis of our life. Soil makes seeds germinate, it provides nutrients for crops, filters rainwater and thus secures our drinking water supplies.

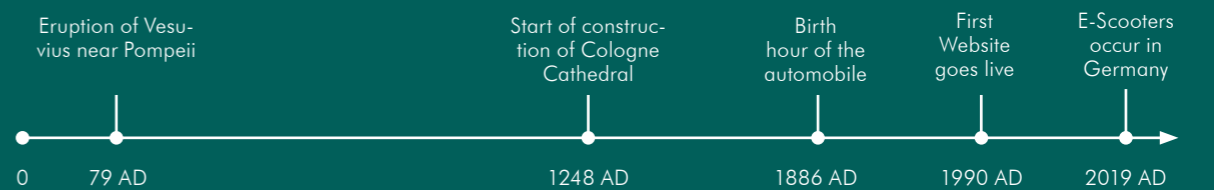
By sealing the soil, we destroy these functions. And with it the basis of life.

We must put an end to this. We must protect the soil, just as we protect our skin from injury.

TTE® acts as a protective layer for the living, natural soil. Instead of destroying nature, TTE® preserves the living micro-organisms and continues to ensure - from infiltration to evaporation - the functions of a healthy natural balance.

What few people know: it takes 2,000 years for 10 centimetres of fertile soil to form. 2,000 years. Soil is, by human standards, a finite resource.

2,000 years...doesn't even the go-live of the first website 30 years ago seem like an eternity?



HORSE HUSBANDRY

Paddock Reinforcement



Paddock

Paddocks are an important part of modern stable concepts. With TTE® you can turn your paddocks into dry, species-appropriate comfort areas where your horses can enjoy fresh air, sun and social contact with other horses.

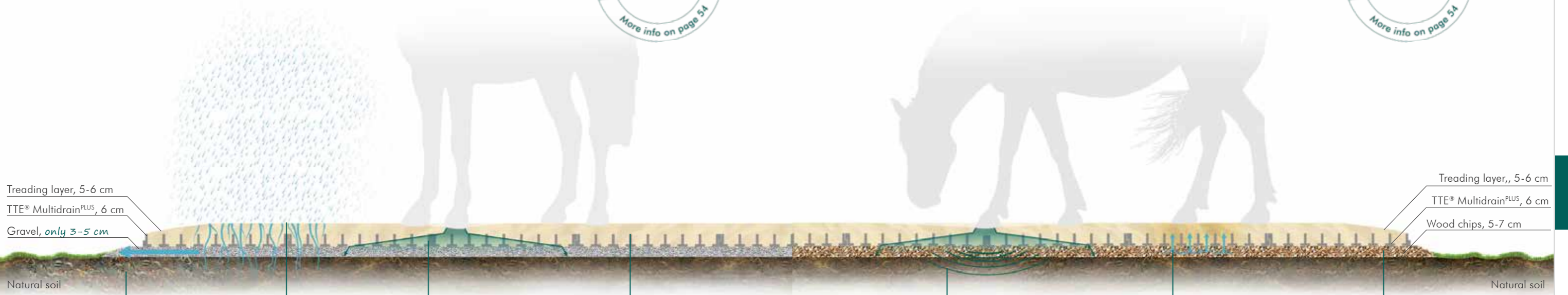
TTE® PADDOCK

Dry pastures for your horses



TTE® PADDOCK^{ELASTIC}

Natural building material with integrated shock absorption



Preservation of soil life

No excavation of the living soil zone
 Preservation of important functions such as e.g. degradation of nitrate and ammonia and soil loosening



Drainage

Powerful, vertical surface drainage
 + Lateral drainage due to on-top construction
 Year-round usability



Areal load distribution

Load distribution over a wide area due to horizontal and vertical bonding
 Elimination of the substructure
 Reduction of effort and costs
 No soil compaction



Evenness

Permanently even surfaces due to robust interlocking joints
 No setting up of individual panels possible



Joint protection

Joint protection through surface elasticity of the elastic wood layer
 Protection from ligament and tendon damage



Humidification

Re-moistening of the tread layer due to the water storage capacity of the elastic wood layer
 Reduced dust formation



Frost protection

Heat generation by macro- and microorganisms in wood and topsoil
 Insulating effect of the wood chips
 Faster thawing of ice and snow

Benefits

+ TTE® PADDOCK features:



Fast implementation - also as a DIY project

Simple approval

Protection against hoof diseases

TTE® PADDOCK^{ELASTIC} ideal for leased land and nature reserve areas



Afraid of wood?!

The wood chips rot over the years - but at a much slower rate due to the stored moisture and the exclusion of oxygen. The raw fibre remains intact and continues to ensure the high evenness, shock absorption and water permeability. The elastic wood layer does not need to be replaced.

Over 20 years of satisfied customers confirm this natural construction method.



TTE® PAVER^{GRIP}

For feeding and washing areas as well as mechanical manure removal

Surfaces with TTE® PAVER^{GRIP} are particularly suitable for areas that should be hygienic and easy to clean, such as feeding and washing areas or areas that are mucked out by machines. Unsealed paths around the stable are also easy to create without a conventional base layer (can be driven on with up to 3.5 t).

- ✓ Water-permeable, unsealed paved surfaces
- ✓ Easy and quick to lay
- ✓ Force-fitted paving raft
- ✓ Ideal to keep clean

Also for yard reinforcement

The TTE® PAVER^{GRIP} is also suitable for your outdoor installations. Higher loads than 3.5 t? No problem. Contact us.

More on this in the chapter outdoor installations from page 74.

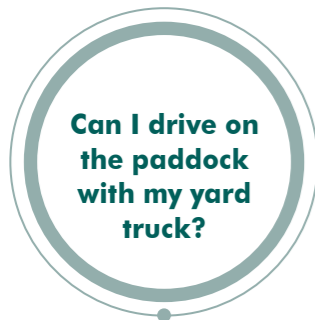
TTE® softPAVE

For paddocks, stable entrances, washing and grooming areas

TTE® softPAVE is the solution for surfaces where very high slip resistance is required. It is made of solid, hard-wearing rubber and offers horse and owner special grip even when wet or on slopes. TTE® softPAVE is simply inserted into the normal TTE® grid - uncomplicated and time-saving.

- ✓ Easy to attach to TTE® Multidrain^{PLUS}
- ✓ Easy on the joints
- ✓ Cold-insulating
- ✓ Non-slip
- ✓ Easy and hygienic to clean
- ✓ Acid and urine resistant
- ✓ Easy and quick to install
- ✓ Can be cut to fit
- ✓ Attractive appearance



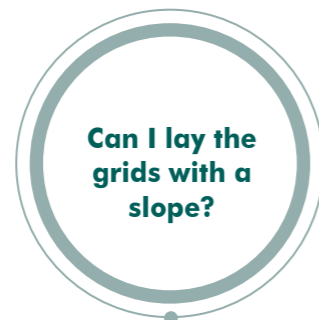


Can I drive on the paddock with my yard truck?

Sure, that's no problem. Depending on how high the load is and how often you want to drive over the area, there are two different construction methods.

You can find out more about this in the chapter on active stables on pages 38 and 39 or in the chapter on outdoor facilities starting on page 74.

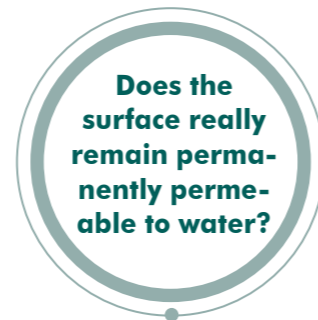
Or you just contact our experts. They will be happy to advise you and work with you to find out which construction method is right for you.



Can I lay the grids with a slope?

Small slopes are no problem for TTE®. The plates are fixed at the end of the slope with soil nails or an edge wood so that they cannot slip away.

So that the tread layer does not slope, we recommend a filling of stable material such as recycling material, TTE® softPAVE, TTE® PAVER^{GRIP} or the TTE® chessboard variant with 50% pavers and 50% wood chips.



Does the surface really remain permanently permeable to water?

In any case. Provided you follow our installation instructions. If, for example, you use sand with a high incidence of fine particles as a filler, the slabs will become clogged over time and the water will no longer be able to seep away.

We will be happy to advise you on the selection of the right filler materials so that you and your horses can enjoy your TTE® surface for a long time.



Can I lay the plates directly in the mud?

In principle, this is possible, but we would not recommend it for the sake of good long-term water permeability and evenness.

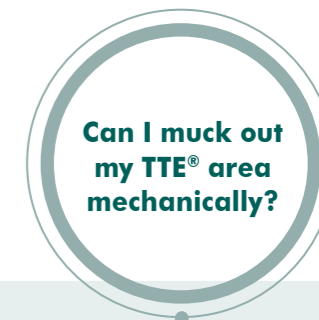
A thin, water-permeable levelling layer should be applied under the plates. On the one hand, the TTE® elements are then more stable, and on the other hand, the rainwater can slowly seep away and is drained away laterally underneath the slabs in case of heavy rainfall. As a result, your paddock is dry even when the ground is saturated by continuous rain.



What about the regulatory approvability of TTE® areas?

TTE® areas should always be approved by the responsible building authority. Basically, our experience in cooperating with authorities is very positive due to the natural construction method.

With the TTE® PADDOCK^{ELASTIC} construction method, areas have even been realised in nature and water conservation areas. With this construction method, there is no excavation of soil, the natural soil is protected and by levelling with wood chips, the soil can be deconstructed without leaving any residues.



Can I muck out my TTE® area mechanically?

Yes, if you decide to fill the TTE® grids with the TTE® PAVER^{GRIP} or decide on the chessboard variant, this is possible. You can find more information about this in the chapter active stable from page 34.



Bleckmann

Application: Paddock
Specialty: Elastic wood layer
Project size: 900 m²
Year of construction: 2015 - 2020



Private horse ranch

Application: Paddock
Specialty: Redevelopment of existing space
Project size: 1,600 m²
Year of construction: 2019



Asil-Araber-Gestüt El Kadir

Application: Lying area
Specialty: Pasture, riding arena
Project size: 1,300 m²
Year of construction: 2010



Aktivstall Oelmaier TTE® partner

Application: Feeding station
Specialty: -
Project size: approx. 2,800 m²
Year of construction: 2010



BBQH, Berlin

Application: Paddock
Specialty: -
Project size: 2,500 m²
Year of construction: 2015



Infinity Five

Application: Paddock, Führanlage, Wege
Specialty: TTE® chessboard variant
Project size: 2,600 m²
Year of construction: 2020 - 2022



Reitbetrieb Fichtenhof

Application: TTE® softPAVE way
Specialty: 20% slope
Project size: 115 m²
Year of construction: 2022



Annica Hansen

Application: Paddock
Specialty: with TTE® softPAVE
Project size: 520 m²
Year of construction: 2021



Eisenlauer

Application: Feeding station
Specialty: -
Project size: approx. 2,900 m²
Year of construction: 2010

Request customer references in your region and convince yourself on site.

References

HORSE HUSBANDRY

ACTIVE STABLE REINFORCEMENT



ACTIVE STABLE

In the active stable, horses can follow their natural urge to move. The correct reinforcement of the areas guarantees safe and species-appropriate movement throughout the seasons.

Active stable



5 ADVANTAGES OF ACTIVE STABLE HUSBANDRY WITH THE TTE® SYSTEM

01

Horse health

First and most important point: Your horses are healthier. The surfaces are clean and dry. Hoof diseases are prevented. Due to the species-appropriate husbandry in the active stable paved with TTE®, there is a natural abrasion.

02

Time saving

Areas paved with TTE® can be mucked out quickly and easily by machine. The time saved by mechanical mucking out amounts to around 50% (according to manufacturers of mechanical manure removal technology) compared to manual manure removal.

03

Flexibility

One plate for all areas of use. No matter whether trampling paths, feeding areas, riding arenas or even parking spaces: TTE® can be used almost everywhere. So you only have one contact for all applications. Comfortable, isn't it?

04

Economic efficiency

Surfaces reinforced with TTE® are durable, robust and unsealed. Compared to conventional paving or concrete surfaces, you reduce high substructure costs and constantly rising sealing fees.

05

Sustainability

Thanks to the low, near-natural structure, the high infiltration capacity and the manufacture from recycled plastics, you are using an environmentally friendly and climate-friendly construction technology.

Benefits

AREA OF APPLICATION ACTIVE STABLE

No matter whether it is a quiet lying and rolling area, a highly frequented feeding area or a service road: with TTE® you can reinforce all surfaces of your active stable.

In order to meet the different requirements, we distinguish between two construction methods. So that the substructure can always be designed to be as low as possible but as load-bearing as necessary.

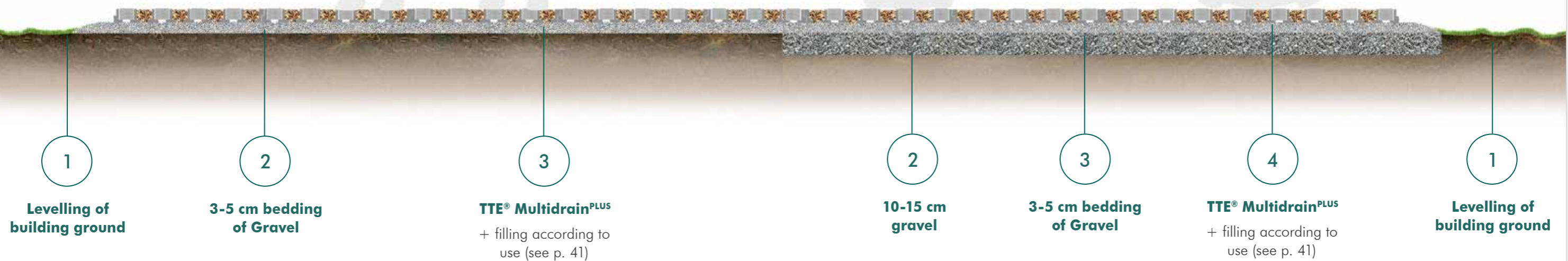
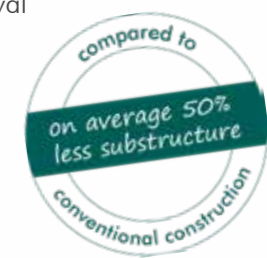
TTE® ACTIVE STABLE for loads < 3,5 t

e.g.: Trampling paths, lying and rolling areas with sand treading layer




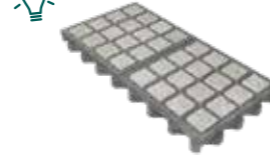
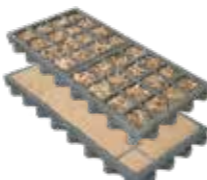

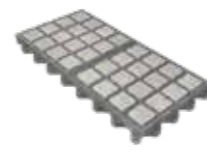

TTE® ACTIVE STABLE^{HEAVY} für regular loads > 3,5 t and occasional loads up to 40 t

e.g.: Main areas, feeding areas and hay storage: ideal for mechanical manure removal






Which TTE® variant is recommended for which area of your active stable by our experts? Find it out in the table below.

TTE® variant	Functional area	Construction principle	Mechanical manure removal	Slip resistance	Water permeability	Slope
 TTE® chessboard filling	Main areas Trampling paths	ACTIVE STABLE ^{HEAVY}	★★★★★	★★★★☆	★★★★★	★★★★★
 TTE® PAVER ^{GRIP}	Concentrated feed and roughage stations Hay storage	ACTIVE STABLE ^{HEAVY}	★★★★★	★★★★☆	★★★★★	★★★★☆
 TTE® with wood or sand	Rolling areas Integration areas Pasture entrances Trampling paths	ACTIVE STABLE	☆☆☆☆☆	★★★★☆	★★★★★	★★★☆☆
 TTE® softPAVE	Rest areas Washing areas Areas with steep slopes	ACTIVE STABLE ACTIVE STABLE ^{HEAVY}	★★★★★	★★★★★	★★★★★	★★★★★
 TTE® PAVER ^{GRIP}	Courtyard areas Parking spaces	TTE® construction principle 2 TTE® construction principle 1 (see p. 78)		★★★★★	★★★★★	★★★☆☆
 TTE® GREEN	Parking spaces Fire brigade access roads	TTE® construction principle 2 TTE® construction principle 1 (see p. 78)		★★★☆☆	★★★☆☆	★★★☆☆

This is us
TTE® system
Sustainability
Paddock
Active stable
Mats
Dressage and jumping arenas
Reiningground
Exercise areas
Outdoor installations
Contact

 Horses are close to our hearts. That is why we have developed the TTE® softPAVE rubber stone and the TTE® PAVER^{GRIP} especially for horse husbandry. Both are extremely slip-resistant and thus prevent injuries. Read more on pages 28 and 29.



Request customer references
in your region and convince
yourself on site.

References



Active stable Oelmaier TTE® partner

Application: Trampling path
Specialty: -
Project size: approx. 2,800 m²
Year of construction: 2010



Active stable Schäferhof

Application: Open stable, Paddocks
Specialty: Partly with elastic wood layer
Project size: > 10,000 m²
Year of construction: 2010 - 2022



Gutshof Langerwisch

Application: Active stable
Specialty: -
Project size: > 10,000 m²
Year of construction: 2014 - 2021



Active stable Hestafimi

Application: Active stable
Specialty: -
Project size: 1,200 m²
Year of construction: 2019



Active stable Schatz & Natterer GbR

Application: Active stable
Specialty: TTE® chessboard filling
Project size: approx. 9,000 m²
Year of construction: 2019

HORSE HUSBANDRY

BOXES & SHELTERS

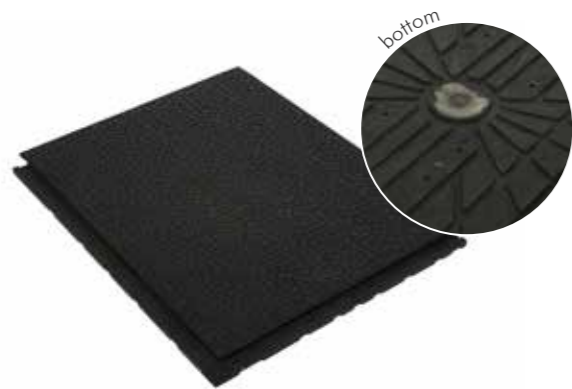
MATS FOR BOXES

Keeping horses in a manner appropriate to their species does not end at the stable door. That is why we offer complementary products for indoor areas and shelters.

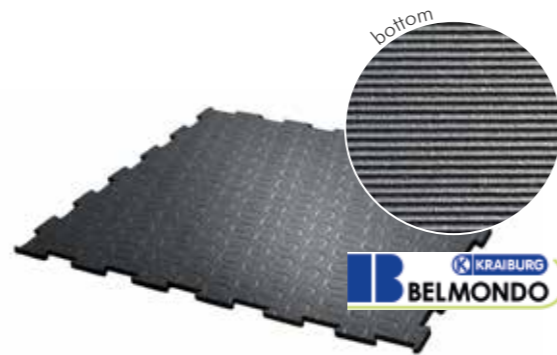
ALL MATS AT A GLANCE

For paved areas

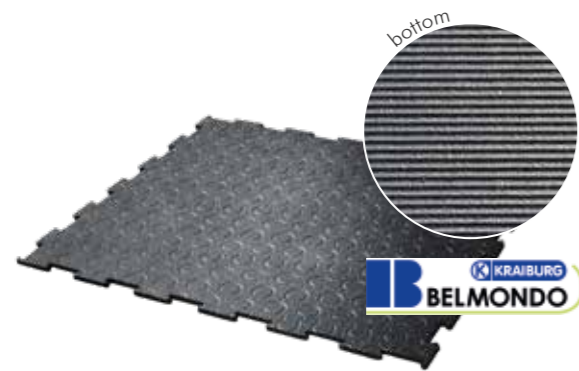
Product	Dimensions	Weight	Profile	Material
HL-mat S	60 x 80 x 2.2 cm (effective: 56 x 7.,9 cm ≅ 0.44 m ²)	approx. 11.5 kg/St.	stone profile	plastic
BELMONDO® Basic	100 x 100 x 1.8 cm ≅ 1.00 m ²	approx. 20.2 kg/m ²	surface: horseshoe profile bottom: grooves	rubber
BELMONDO® Classic	100 x 100 x 1.8 cm ≅ 1.00 m ²	approx. 20.9 kg/m ²	surface: horseshoe profile with top coat bottom: grooves	rubber
BELMONDO® Trend	100 x 100 x 2.8 cm ≅ 1.00 m ²	approx. 21.6 kg/m ²	surface: horseshoe profile with top coat bottom: air cushions with rubber ridges	rubber



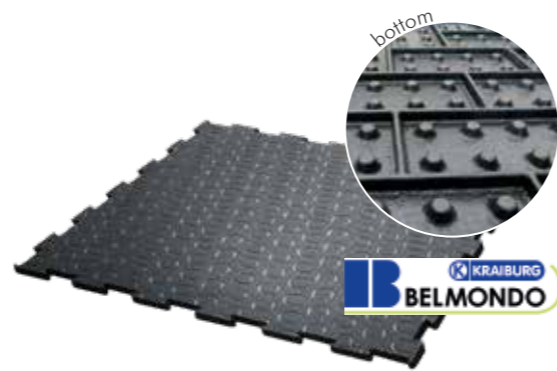
HL-mat S



BELMONDO® Basic



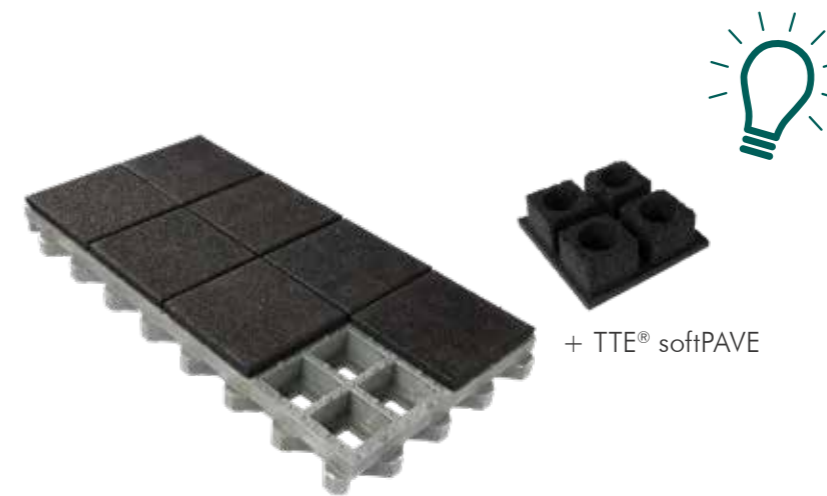
BELMONDO® Classic



BELMONDO® Trend

For unpaved areas

Product	Dimensions	Weight	Profile	Material
TTE® softPAVE	19.5 x 19.5 x 7 cm (effective height: 2 cm) 25 pieces ≅ 1 m ²	approx. 1.32 kg/St. ≅ 33 kg/m ²	surface: rubber granulate bottom: plug-in system for insertion into TTE® Multidrain ^{PLUS}	rubber



TTE® MultidrainPLUS

+ TTE® softPAVE

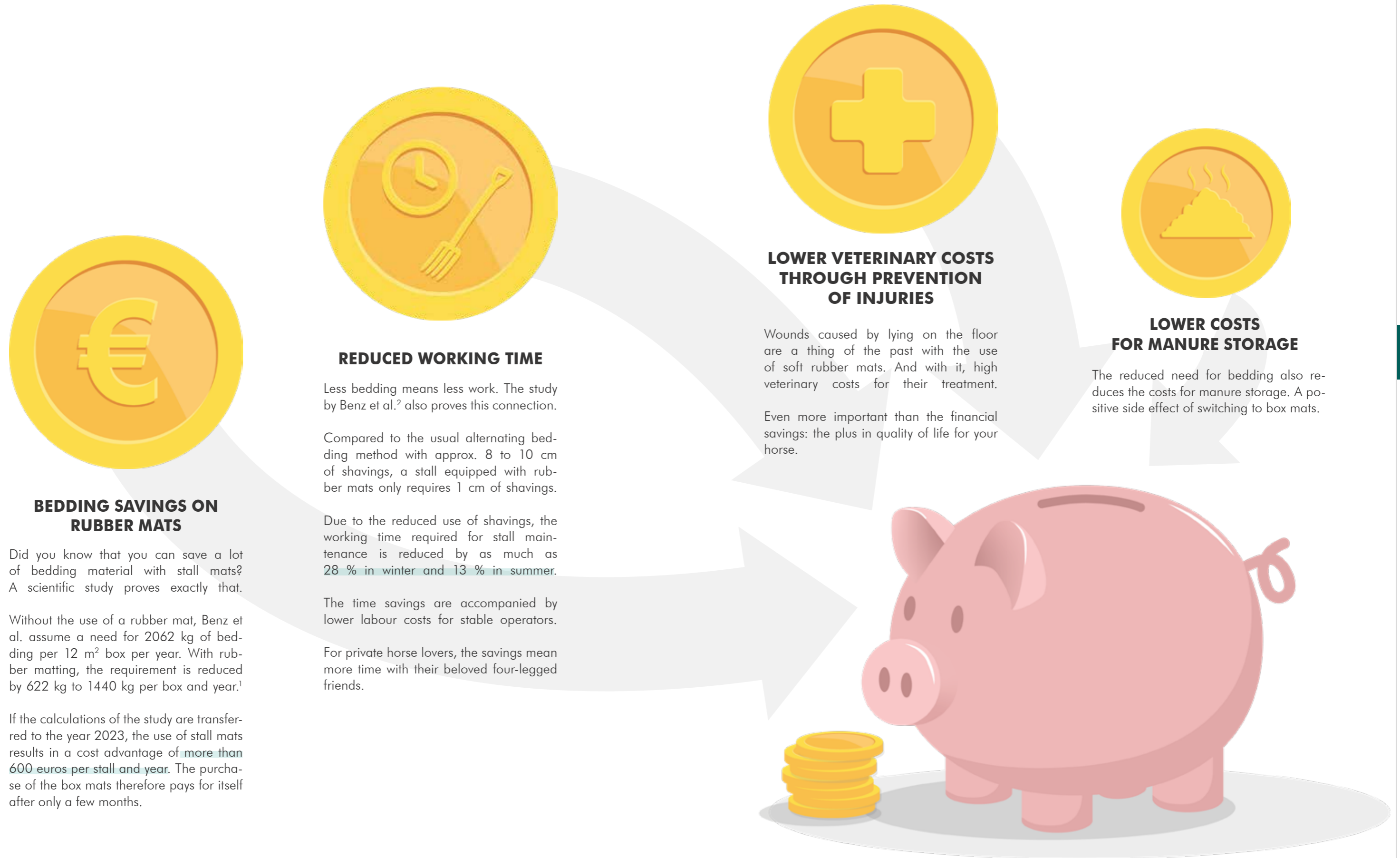


For unpaved surfaces, such as e.g. pasture huts, we recommend TTE® Multidrain^{PLUS} + TTE® softPAVE

THE RIGHT MAT FOR EVERY AREA

Mat	Surface type	Water permeability	Acid and urine-resistance	Slip resistance	Lying comfort	Bedding savings	Cold insulation
 <p>HL-mat S</p>	for concrete or paved floors indoors	☆☆☆☆☆	★★★★★	★★★☆☆	★★☆☆☆	★★☆☆☆	★★★★★
 <p>BELMONDO® Basic</p>	for concrete or paved floors indoors	☆☆☆☆☆	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★☆
 <p>BELMONDO® Classic</p>	for concrete or paved floors indoors	☆☆☆☆☆	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★☆
 <p>BELMONDO® Trend</p>	for concrete or paved floors indoors	☆☆☆☆☆	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★★
 <p>TTE® softPAVE</p>	for unpaved surfaces outdoors	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

Mats



^{1,2} Benz et al. (2013): Weniger Einstreu bei gleichem Komfort. In: Pferde Zucht & Haltung 1/2013, S. 66 et seq.

EQUESTRIAN SPORTS

RIDING ARENA CONSTRUCTION
FOR DRESSAGE AND JUMPING



DRESSAGE & JUMPING

TTE® dressage and show jumping arenas offer top performance and healthy, safe riding conditions all year round: important prerequisites for intensifying the interaction between you and your horse on a daily basis.

TTE® RIDING ARENA

Easy & quick to attach for a dry all-weather riding arena



Treading layer, 12 cm
Wooden beam, 15 x 20 cm
TTE® Multidrain^{PLUS}, 6 cm
Gravel, *only 5 cm*
Natural soil



Preservation of soil life

No excavation of the living soil zone
Preservation of important functions such as e.g. soil loosening



Drainage

Powerful, vertical surface drainage
+ Lateral drainage due to on-top construction
Year-round usability



Evenness

Permanently even surfaces due to robust interlocking joints
No setting up of individual panels possible



Areal load distribution

Load distribution over a wide area due to horizontal and vertical bonding
Elimination of the substructure
Reduction of effort and costs
No soil compaction



Joint protection

Optimal shock absorption and energy recovery due to resilient elastic wood layer (scientifically proven, see p. 55).
Improved shock absorption in the event of a fall
Protection of the horse's joints, without overloading tendons and ligaments



Humidification

Re-moistening of the tread layer due to the water storage capacity of the elastic wood layer
Saving on watering costs
Protection of the horses' respiratory tract and lungs



Frost protection

Heat generation by macro- and microorganisms in wood and topsoil
Insulating effect of the wood chips
Faster thawing of ice and snow



Treading layer, 12 cm
Wooden beam, 15 x 20 cm
TTE® Multidrain^{PLUS}, 6 cm
Aquatex®
Wood chips, 10 cm
Gravel, *only 5 cm*
Natural soil



+ TTE® RIDING ARENA^{ELASTIC} features:



Fast implementation - also as a DIY project

Easy approval

Dry all-weather riding arena

TTE® RIDING ARENA^{ELASTIC}: One treading layer for dressage and jumping



Afraid of wood?!

The wood chips rot over the years - but at a much slower rate due to the stored moisture and the exclusion of oxygen. The raw fibre remains intact and continues to ensure the high evenness, shock absorption and water permeability. The elastic wood layer does not need to be replaced.

Over 20 years of satisfied customers confirm this natural construction method.



Riding arena for jumping



Riding arena for dressage



Riding arena



Substructure	Treading layer	Water permeability	Joint-friendliness	Shear strength	Natural humidification	Treading layer height
TTE® RIDING ARENA	Sand	★★★★★	★★★★☆☆	★★★★☆	★★☆☆☆☆	8 cm
TTE® RIDING ARENA	Sand-wood	★★★★★	★★★★☆	★★★★★	★★★☆☆☆	12 cm
TTE® RIDING ARENA ^{ELASTIC}	Sand	★★★★★	★★★★★	★★★★☆	★★★★☆☆	8 cm
TTE® RIDING ARENA ^{ELASTIC}	Sand-wood	★★★★★	★★★★★	★★★★★	★★★★★	12 cm



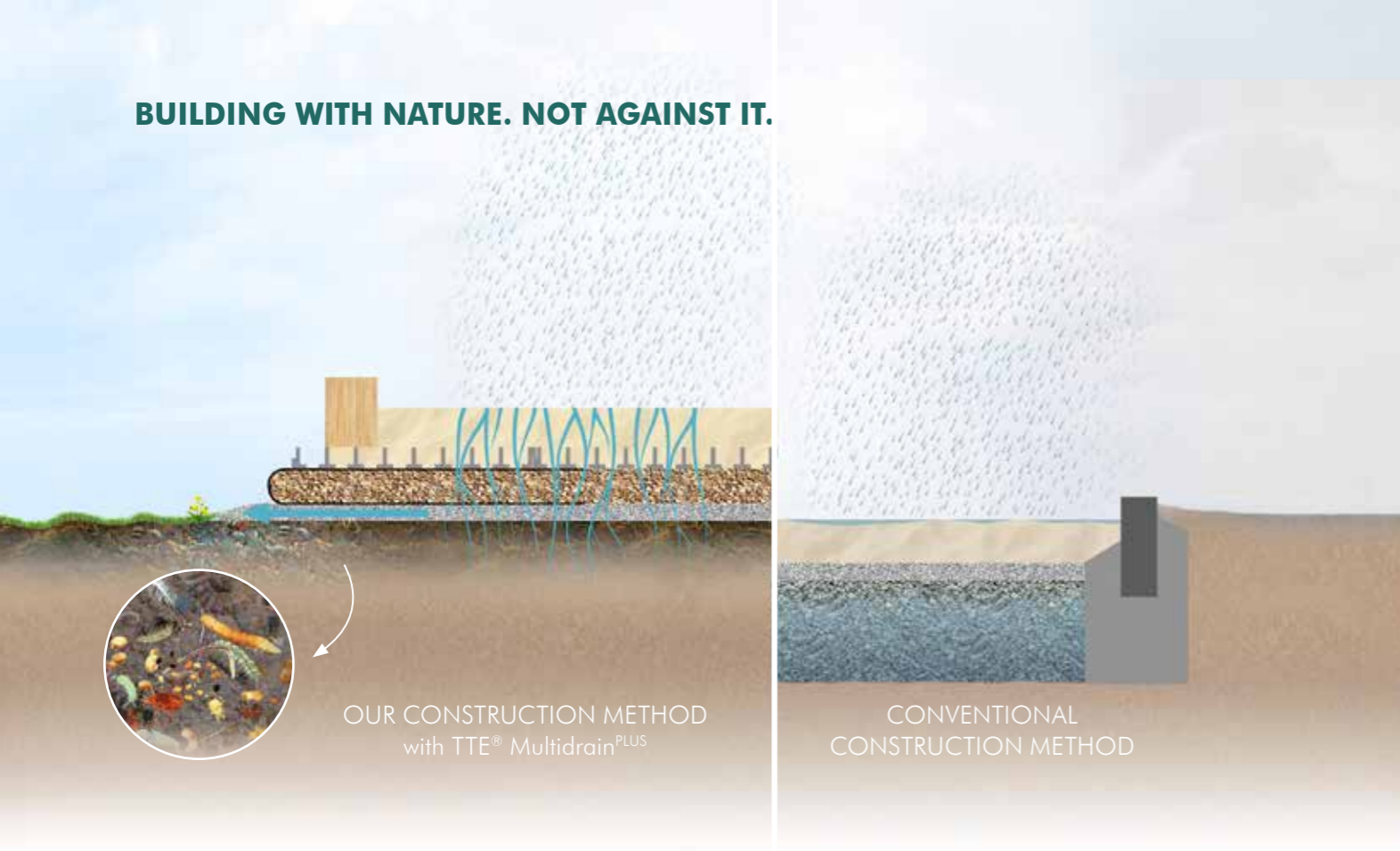
Sand-fleece-mixture



Pure carpet chips

Due to ecological reasons, we recommend not to use synthetic aggregates.

BUILDING WITH NATURE. NOT AGAINST IT.



OUR CONSTRUCTION METHOD with TTE® Multidrain^{PLUS}

CONVENTIONAL CONSTRUCTION METHOD

Building in harmony with nature. This is our concept for the construction of TTE® surfaces - whether for equestrian sports or horse husbandry.

Conventional reinforcement of horse-keeping areas relies on a classic hard substructure of up to 60 cm. The work involved in this construction method is high, requires specialist knowledge and construction machinery and causes considerable costs - not least in the disposal of the excavated humus. TTE® is different: thanks to the **intelligent load-distribution**, the slabs absorb loads and distribute them **over a wide area**. The demands on the substructure - and

the **costs of installation** - are thus **significantly lower**.

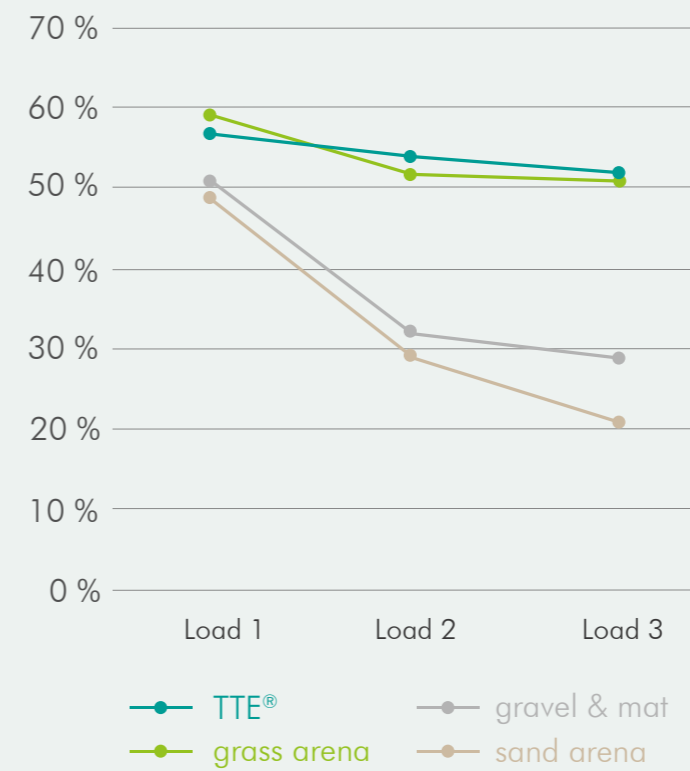
Conventional riding arenas often work with a drainage system. This can become clogged after some time. The drainage then no longer works and the water is dammed up in the deeper base layers - similar to a bathtub. Different with TTE®: here, **the water can always drain laterally onto the lower-lying surrounding land** due to the **on-top structure** - no matter how long and how hard it rains.

- ✓ No bathtub effect - lateral drainage even in the event of heavy rainfall
- ✓ Lower costs due to material savings, shorter construction time and elimination of disposal costs
- ✓ Self-construction possible
- ✓ Preservation of natural soil life
- ✓ Construction possible in almost all soil conditions
- ✓ Simpler approval, due to omission of input of foreign material

SHOCK ABSORPTION COMPARED TO CONVENTIONAL CONSTRUCTION METHODS

TTE® RIDING ARENA^{ELASTIC} - GRASS-LIKE RIDING

SHOCK ABSORPTION IN COMPARISON TTE® RIDING ARENA^{ELASTIC} vs. CONVENTIONAL CONSTRUCTION METHODS



Source: Vornholt, 2013



The Osnabrück University of Applied Sciences has compared the TTE® construction with conventional construction methods in terms of shock absorption.

TTE® RIDING ARENA^{ELASTIC} arenas thus perform ideal values of power decay and energy recovery under recurring loads, which correspond to a grass arena under ideal conditions.

Experience shock absorption at a high level with constant performance!

- ✓ Tested riding behaviour
- ✓ Constant properties
- ✓ Greatly reduced hoof strike and care





Request customer references in your region and convince yourself on site.

References



Equestrian facility Josenhof

Application: Riding arena
Specialty: Elastic wood layer
Project size: 5,200 m²
Year of construction: 2013-2021



University of Applied Sciences Nürtingen

Application: Riding arena
Specialty: Elastic wood layer: Uncomplicated approval despite construction in a water protection area
Project size: 800 m², 260 m²
Year of construction: 2014, 2015



Carlo Beisswenger

Application: Paddock, Jumping arena 40 x 70, riding arena
Specialty: Elastic wood layer
Project size: 412 m², 2,800 m², 800 m²
Year of construction: 2016



Equestrian club Bad Füssing

Application: Riding arena 80 x 40
Specialty: TTE® RIDING ARENA with partial water storage
Project size: 3,200 m²
Year of construction: 2007

EQUESTRIAN SPORTS

RIDING ARENA CONSTRUCTION
FOR REINING



REINING

In order to optimally practise the manoeuvres of reining, a ground with optimal conditions is required. The TTE® REININGGROUND^{OUTDOOR} offers these outdoors. In almost all weather periods.



Sliding layer

Replaces the classic clay layer and prevents any contact with the TTE® grids

Safe stops due to permanently even surface



Evenness

Permanently even surfaces due to robust interlocking joints

No setting up of individual panels possible



Joint protection

Joint protection through surface elasticity of the elastic wood layer



Areal load distribution

Load distribution over a wide area due to horizontal and vertical bonding

Elimination of the substructure
Reduction of effort and costs
No soil compaction



Frost protection

Heat generation by macro- and microorganisms in wood and topsoil

Insulating effect of the wood chips
Faster thawing of ice and snow



Humidification

Re-moistening of the tread layer due to the water storage capacity of the elastic wood layer

Saving on watering costs
Protection of the horses' respiratory tract and lungs



Drainage

Powerful, vertical surface drainage
+ Lateral drainage due to on-top construction

Controlled breaking of the sliding layer for optimal drainage.



Preservation of soil life

No excavation of the living soil zone
Preservation of important functions such as e.g. soil loosening

Benefits

Fast implementation - also as a DIY project

Simple approval

Ideal training conditions in all weathers

No setting up of individual panels possible



Afraid of wood?!

The wood chips rot over the years - but at a much slower rate due to the stored moisture and the exclusion of oxygen. The raw fibre remains intact and continues to ensure the high evenness, shock absorption and water permeability. The elastic wood layer does not need to be replaced.

Over 20 years of satisfied customers confirm this natural construction method.



Dingolfing

Application: Reining arena, lunge pen,
Riding arena (Reining)

Specialty: Elastic wood layer

Project size: 3,370 m², 177 m², 851 m²

Year of construction: 2016, 2016, 2018



 Request customer references in your region and convince yourself on site.

References

EQUESTRIAN SPORTS

EXERCISE AREAS



EXERCISE

Lunge pens and horse walkers are a valuable training and exercise opportunity. A solid floor mounting with TTE® ensures that you can enjoy your facility for a long time despite high loads.

TTE® HORSE WALKER^{ELASTIC}

OPTION 1 - MIT TTE® PAVER^{GRIP} AND BELMONDO MAT

- *BELMONDO mat
- *TTE® PAVER^{GRIP}
- *TTE® Multidrain^{PLUS}, 6 cm
- *Wood chips, 10 cm
- *Gravel, *only 5 cm*
- *optional for increased slip resistance
- *compulsory construction



TTE® HORSE WALKER^{ELASTIC}

OPTION 2 - WITH 50% PAVER and 50% PAVER^{GRIP}

- 50 % PAVER
- 50 % PAVER^{GRIP}
- TTE® Multidrain^{PLUS}, 6 cm
- Wood chips, 10 cm
- Gravel, *only 5 cm*



Horse walkers are an important tool for giving horses more exercise.

TTE® horse walkers have a special structure consisting of an elastic wood layer, TTE® filled with the TTE® PAVER^{GRIP} and a slip-resistant rubber mat. The springy construction makes it possible to move the horse in a way that is easy on the joints. At the same time, the horse exerciser withstands the enormous loads of daily use thanks to the solid, proven TTE® elements.



Joint protection

Optimal shock absorption and energy recovery due to resilient elastic wood layer (scientifically proven, see p. 55); protection of the horse's joints, without overloading tendons and ligaments



Frost protection

Heat generation by macro- and microorganisms in wood and topsoil, Insulating effect of the wood chips; faster thawing of ice and snow



Preservation of soil life

No excavation of the living soil zone; preservation of important functions such as e.g. degradation of nitrate and ammonia



Drainage

Powerful, vertical surface drainage, + Lateral drainage due to on-top construction; year-round usability



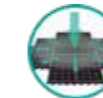
Evenness

Permanently even surfaces due to robust interlocking joints; no setting up of individual panels possible



Areal load distribution

Load distribution over a wide area due to horizontal and vertical bonding; elimination of the substructure; no soil compaction



Fast implementation - also as a DIY project

Abrasion resistant due to TTE® PAVER^{GRIP}

Year-round usability

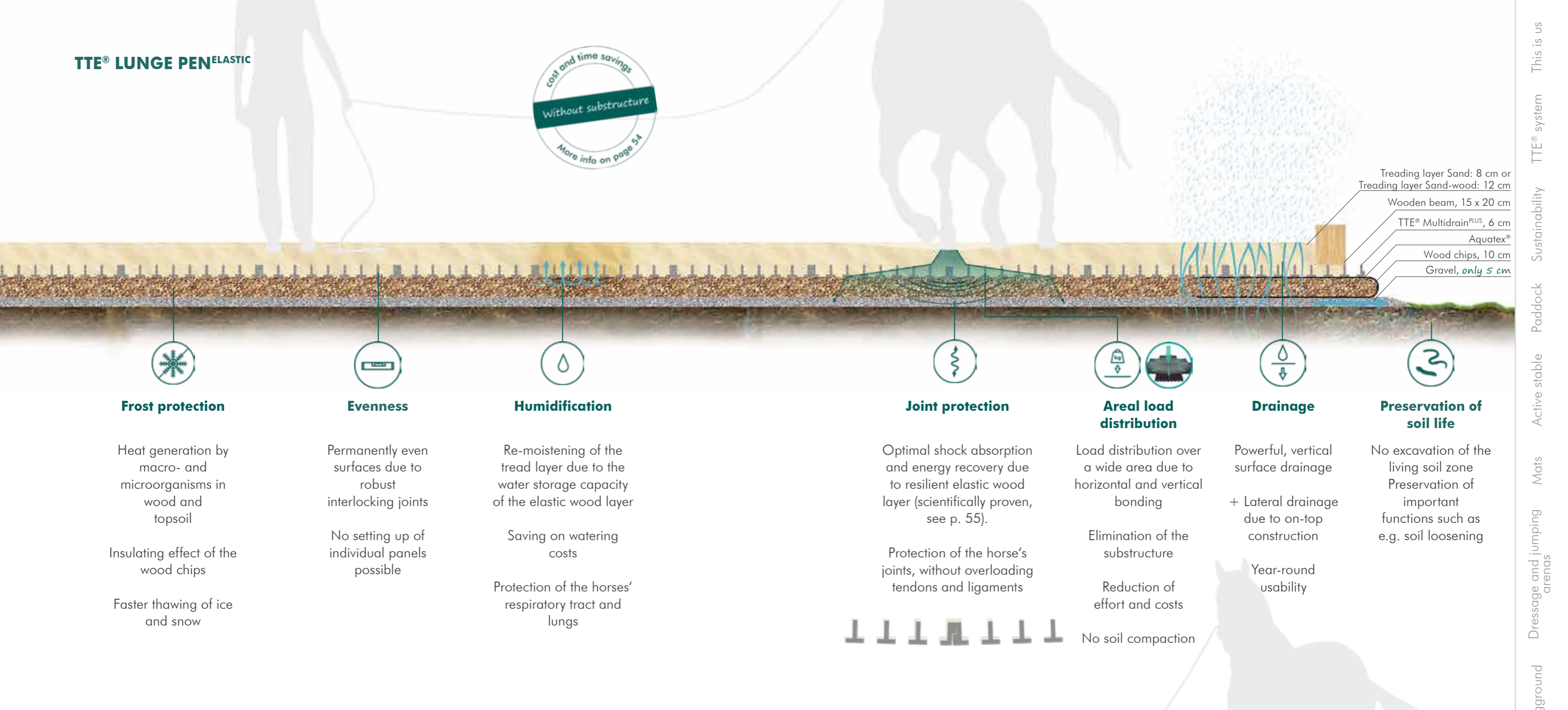
Uncomplicated replacement of worn rubber mats instead of costly renovation of the entire system



Afraid of wood?!

The wood chips rot over the years - but at a much slower rate due to the stored moisture and the exclusion of oxygen. The raw fibre remains intact and continues to ensure the high evenness, shock absorption and water permeability. The elastic wood layer does not need to be replaced.

Over 20 years of satisfied customers confirm this natural construction method.



Frost protection

Heat generation by macro- and microorganisms in wood and topsoil
 Insulating effect of the wood chips
 Faster thawing of ice and snow



Evenness

Permanently even surfaces due to robust interlocking joints
 No setting up of individual panels possible



Humidification

Re-moistening of the tread layer due to the water storage capacity of the elastic wood layer
 Saving on watering costs
 Protection of the horses' respiratory tract and lungs



Joint protection

Optimal shock absorption and energy recovery due to resilient elastic wood layer (scientifically proven, see p. 55).
 Protection of the horse's joints, without overloading tendons and ligaments



Areal load distribution

Load distribution over a wide area due to horizontal and vertical bonding
 Elimination of the substructure
 Reduction of effort and costs



Drainage

Powerful, vertical surface drainage
 + Lateral drainage due to on-top construction
 Year-round usability



Preservation of soil life

No excavation of the living soil zone
 Preservation of important functions such as e.g. soil loosening



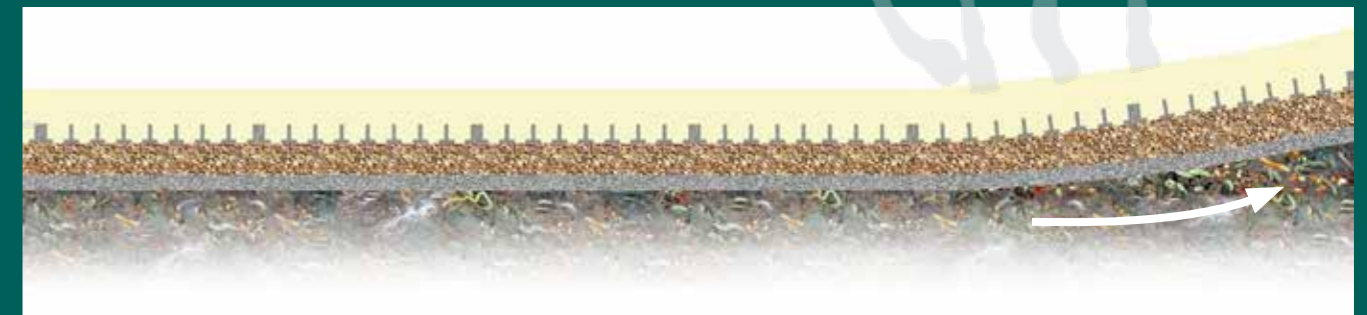
No soil compaction



Expert tip:

"For even more ergonomic lunging, we recommend the use of a plate. It compensates for the horse's inclination so that the musculoskeletal system is evenly loaded. On the inside, the front and hind legs are not increasingly compressed and on the outside they are not overstretched."

Ernst Hübner, company founder



Lunge pen: Carlo Beisswenger



Horse walker: JacPoint Quarterhorses



Scan the QR code and see the horse walker in action!

References

OUTDOOR FACILITIES



OUTDOOR FACILITIES

TTE® is a real all-rounder. Thanks to its high load-bearing capacity, TTE® is ideal for your outdoor facilities: car parks, fire brigade access roads, paths and storage areas become the well-kept flagship of your equestrian business with TTE®.



Fire brigade access road



Path stabilisation



Yards and parking spaces



Storage areas



TTE® FOR YOUR OUTDOOR FACILITIES

	Drainage	Load-bearing capacity	Rainwater treatment	Omission of rainwater charge
 TTE® GREEN	★★★★☆	★★★★☆	★★★★★	★★★★★
 TTE® PAVE	★★★★★	★★★★★	☆☆☆☆☆	★★★★★
 TTE® MINERAL	★★★★★	★★★★☆	☆☆☆☆☆	★★★★★

INTELLIGENT LOAD DISTRIBUTION

100 % INFILTRATION

GROUNDWATER PROTECTION

VITAL GREEN

EVAPORATIVE COOLING



Approx. 50 % reduction in substructure due to interlocking connection system

Protection of the soil from compaction & preservation of the seepage capacity

High infiltration capacity & water storage of 100 l/m²

Near-natural rainwater treatment of polluted rainwater

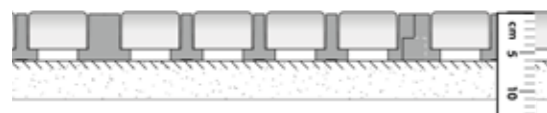
Protection of groundwater

Capillary water and nutrient supply

Extended root zone due to special substrate structure

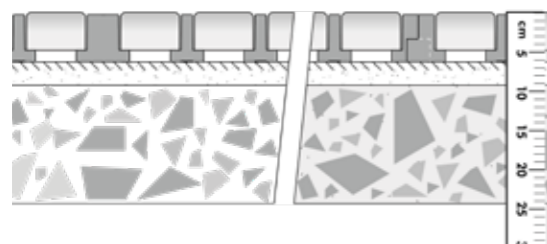
Cooling by 5 °C protects from heat islands

CONSTRUCTION PRINCIPLES OF TTE® PAVE



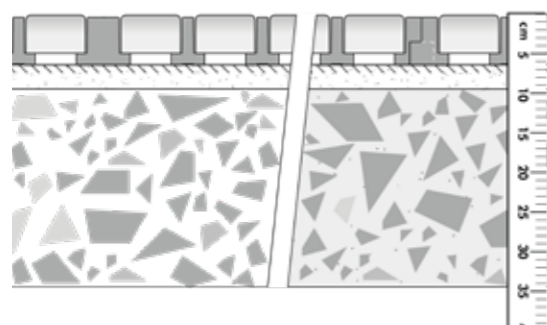
TTE® CONSTRUCTION PRINCIPLE 1

For occas. car traffic up to 3.5 t total weight



TTE® CONSTRUCTION PRINCIPLE 2

For cars and occas. heavy goods traffic

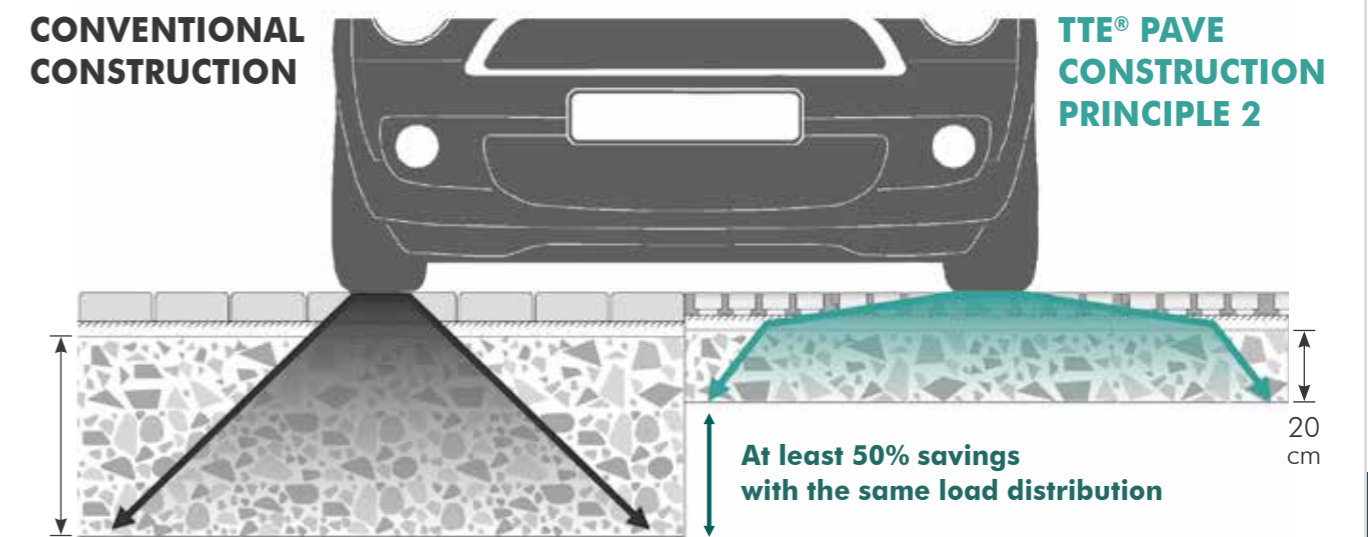


TTE® CONSTRUCTION PRINCIPLE 3

For heavy goods traffic up to 40 t

CONVENTIONAL CONSTRUCTION

TTE® PAVE CONSTRUCTION PRINCIPLE 2



min. 40 cm

Find out more about outdoor facilities on our website at www.huebner-lee.de/en/outdoor-installations-tte-system or in our outdoor installations brochures. Scan the QR code here:



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*“The bigger the dream,
the more important the team.”*



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