

# **CONRADI+KAISER**

## synthetic fall protection in practice



# To make the right decision, you need to be well informed.

It is a frequently discussed topic in practice:  
which type of fall protection is the most suitable when installing surfaces in  
public spaces and is also economical in the long term?

It could be for a new children's playground for the neighbourhood, a fitness area  
in a city park, a multi-generation space in a planned city district, paths and open  
spaces in areas open to the public spaces or the renovation of the schoolyard.

Decision-makers and municipal planners as well as horticulturalists and land-  
scapers often need to make long-term and responsible decisions in this respect.  
This guide aims to be a helpful companion in practice. It explains clearly why  
synthetic fall protection is often the best choice and supports individual project  
planning.

# Synthetic fall protection. Convincing arguments.



## CONSTANT FALL PROTECTION

Floor systems made of synthetic fall protection guarantee consistent fall protection even when the playing area is heavily frequented.



## SUSTAINABLE

Synthetic fall protection is sustainable: rubber granulate made from used tyres helps to reduce the environmental impact of burning or illegal storage of used tyres - in line with the German Recycling Act.



## BARRIER-FREE | INCLUSIVE

Synthetic fall protection has a flat, smooth surface. Handy bevelled edge elements also facilitate access.



## PERMEABLE TO WATER

The floor systems are permeable to water so that no puddles appear on the surface. A drainage system ensures water quickly drains water. The anti-slip properties remain even when it is wet.



## DIN EN 1176/1177

When making your selection, pay attention to certified safety: the fall protection products should be certified in accordance with DIN EN 1176/1177.



## DURABLE & EASY TO CARE FOR

Synthetic fall protection is very robust and resistant. Any dirt lying on top can be removed quickly and easily.



## 100% MADE IN GERMANY

Quality you can rely on in your projects. Fall protection, which is 100% made in Germany, meets the highest standards when it comes to safety, material and service life, such as the fall protection systems from Conradi+Kaiser.



## DESIGN VARIETY

The variety of shapes, colours and drop heights with synthetic fall protection coverings means that an infinite number of solutions for playgrounds, sports fields, livestock farming and public spaces are possible.

# Common fall protection variants. Advantages and disadvantages compared.



## SYNTHETIC FALL PROTECTION

- + barrier-free
- + easy to clean and hygienic
- + easy to care for
- + low maintenance costs
- + no depressions, compliance with DIN EN 1176/1177 over the entire service life
- + no danger from concealed fragments or the like due to the closed surface
- + no replacement necessary in the short term
- comparatively high installation costs
- base difficult to maintain, occasional sheet removal is required



## SAND

- + comparatively low installation costs
- + easy access for maintaining the base
- not barrier-free
- gets dirty quickly
- very maintenance-intensive
- high maintenance costs
- formation of depressions minimises fall protection reliability
- danger from hidden fragments, etc.
- regular refilling, cleaning and replacement necessary



## GRAVEL

- + comparatively low installation costs
- + easy access for maintaining the base
- not barrier-free
- gets dirty quickly
- very maintenance-intensive
- high maintenance costs
- formation of depressions minimises fall protection reliability
- danger from hidden fragments, etc.
- regular refilling, cleaning and replacement necessary



## WOOD CHIPS

- + comparatively low installation costs
- + easy access for maintaining the base
- not barrier-free
- susceptible to fungus and mould growth
- very maintenance-intensive
- high maintenance costs
- regular refilling, cleaning and replacement necessary
- danger from hidden fragments, etc.
- replenishment required due to depressions that form

# Important factors when choosing the right fall protection.

## LOOSE FALL PROTECTION

## SYNTHETIC FALL PROTECTION

### Thorough cleaning

In general, loose scattered layers such as sand require regular thorough cleaning.

This time-consuming maintenance work, including the associated resulting costs, does not apply to floor coverings made from synthetic fall protection.

### Consistent fall protection

Scattered materials often "accumulate" in heavily used areas. Depressions form in which fall protection is reduced and the risk of injury increases.

Synthetic fall protection guarantees consistent fall protection even over years.

### Hygiene

Loose and rotting materials quickly decompose. There is a risk of mould and fungus growth, and discarded cigarette butts or broken glass often go undetected.

The surface of floor coverings made of synthetic fall protection can be cleaned quickly. In addition, they are permeable to water so no puddles accumulate on the surface and hygienic cleanliness is guaranteed.

### Accessibility

Loose scattered materials used as fall protection is not barrier-free and is difficult or impossible to navigate with wheelchairs and prams.

Floor systems made of synthetic fall protection are supported by additional elements such as bevelled edge elements are barrier-free and accessible to all.

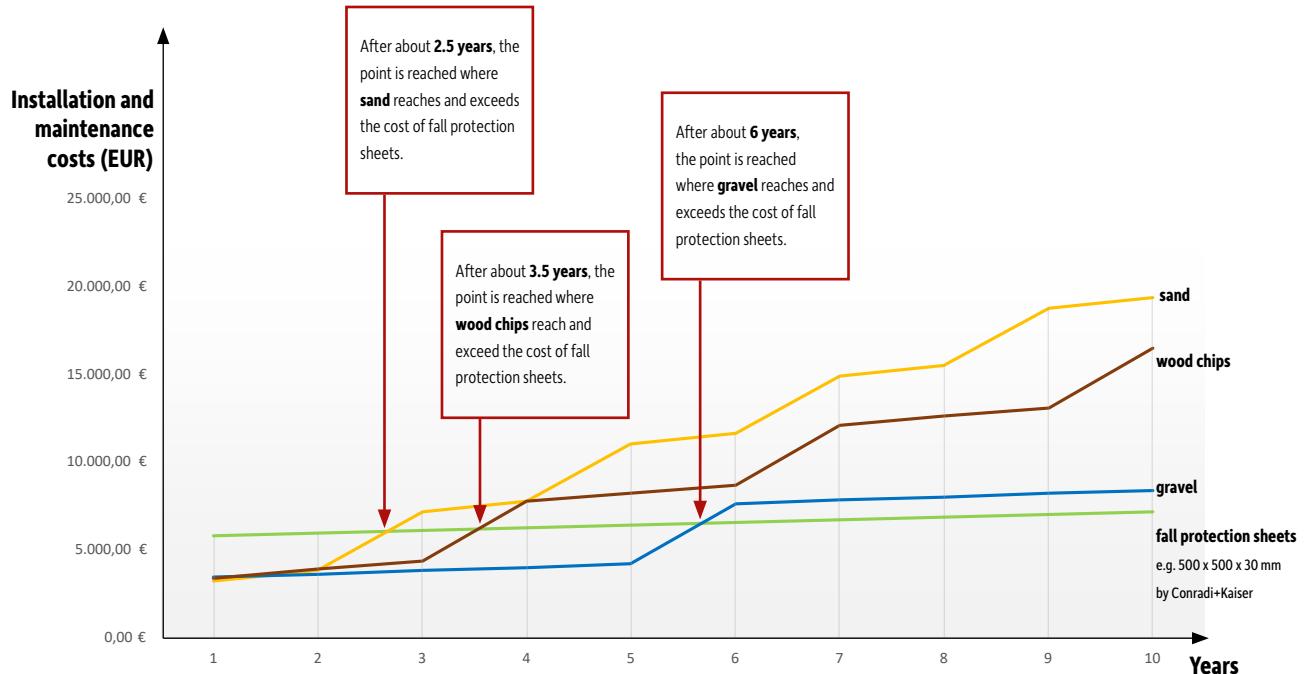
# Cost-effectiveness analysis

The following calculation was for an area of 100 m<sup>2</sup> with a fall height of 1 metre. The installation costs (material requirements on prepared land and labour costs) and the prescribed maintenance costs (cleaning, replenishment or replacement of material) were calculated over a period of 10 years. Result: when comparing synthetic fall protection, sand, gravel and wood chips based on a 10-year period, synthetic fall protection is the most cost-effective. The associated costs should therefore always be taken into account in the budget.

## SUMMARY

**Synthetic fall protection is somewhat more expensive to purchase than conventional bulk materials, but pays for itself after a short period of use. In contrast to the alternative materials, it is durable and requires little maintenance. This keeps the costs very low in subsequent years.**

**Cost-effectiveness analysis**  
Calculation for an area of 100 m<sup>2</sup> with a drop height of 1 metre



Note: these are guidelines, the individual prices are subject to fluctuations.

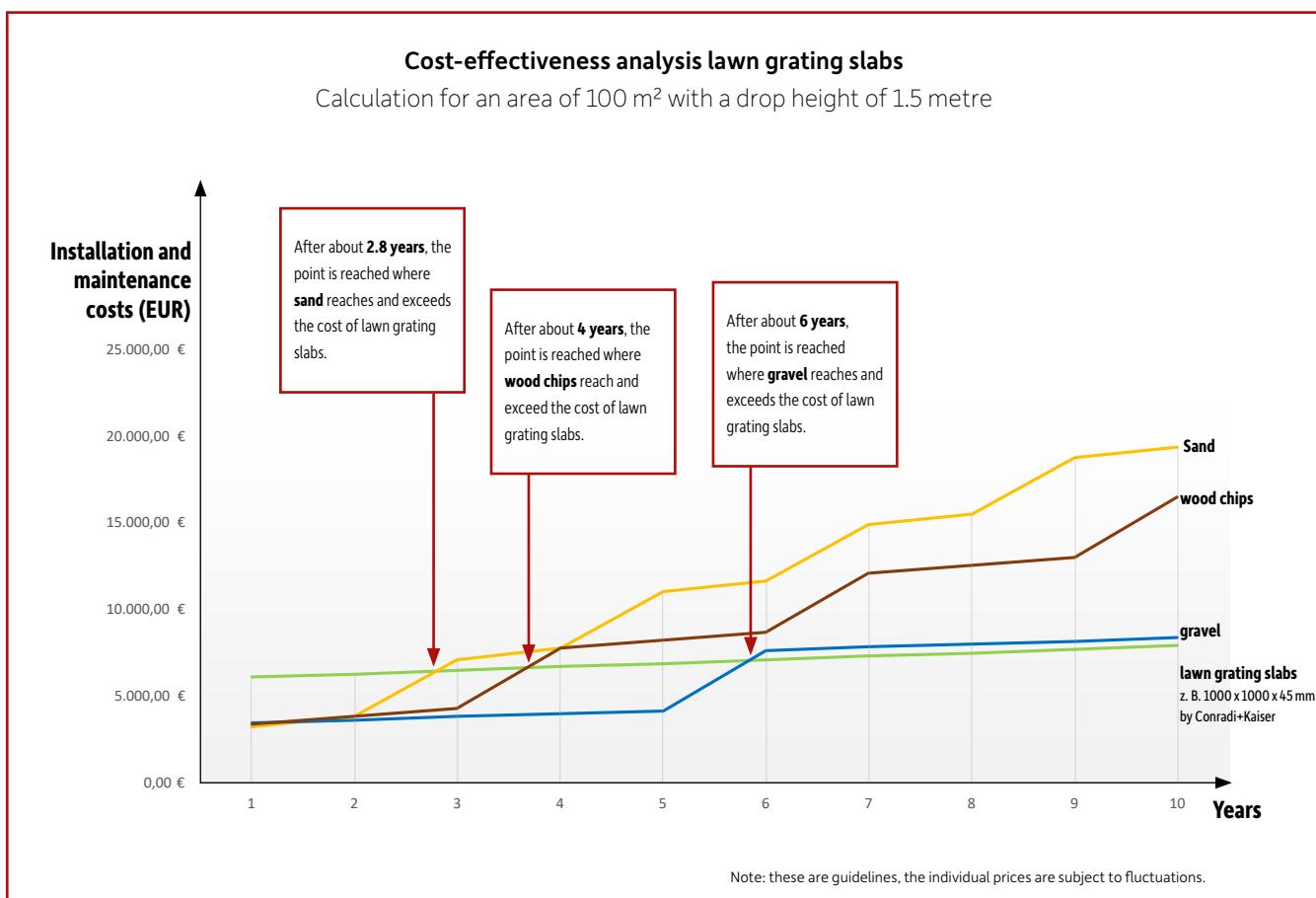
# Cost-effectiveness analysis lawn grating

The following calculation was for an area of 100 m<sup>2</sup> with a fall height of 1.5 metre. The installation costs (material requirements on prepared land including substrate acc. to DIN 18035-4, lawn seeds and labour costs) and the prescribed maintenance costs (cleaning, replenishment or replacement of material) were calculated over a period of 10 years.

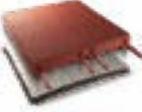
Result: when comparing lawn grating slabs, sand, gravel and wood chips based on a 10-year period, lawn grating slabs are the most cost-effective. The associated costs should therefore always be taken into account in the budget.

## SUMMARY

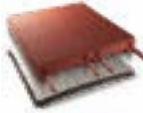
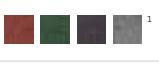
**Lawn grating slabs with a substructure made of substrate according to DIN 18035-4 are marginally more expensive to purchase than conventional bulk materials, but pays for itself after a short period of use. In addition, lawn grating slabs offer a natural surface design and barrier-free access to play equipment.**



# Use | Decision guidance

	PRIVATE	PLAYGROUND	FITNESS AREA
 <b>Terrasoft Slab</b> Fall height: up to 2,40 m	✓	✓	✓
 <b>Lawn grating</b> Fall height: up to 3 m	✓	✓	✓
 <b>Safe System</b> Fall height: up to 3 m		✓	✓
 <b>Design Paving</b> Fall height: up to 3 m	✓	✓	✓
 <b>Rubber-concrete slab</b> Fall height: 1,50 m	✓	✓	✓
 <b>Puzzleslab</b> Fall height: 1,50 m		✓	
 <b>Double-T Impact Protection</b> Fall height: 1,40 m	✓	✓	
 <b>Playpoint base</b> Fall height: 1,00 m	✓	✓	

# Product finder | Decision guidance

	FALL HEIGHTS								COLOURS	
	1,00 m	1,30 m	1,40 m	1,50 m	2,00 m	2,10 m	2,40 m	3,00 m	SBR <sup>1</sup>	EPDM <sup>2</sup>
 <b>Terrasoft Slab</b> 500 x 500 x 80 mm <sup>1</sup> 500 x 500 x 65 mm <sup>1</sup> 500 x 500 x 45 mm 500 x 500 x 40 mm 500 x 500 x 30 mm								✓		<sup>1</sup>
 <b>Lawn grating</b> 1000 x 1000 x 100 mm 1000 x 1000 x 65 mm 1000 x 1000 x 45 mm						✓		✓		
 <b>Safe System</b> 500 x 500 x 65+22 mm <sup>1</sup> 500 x 500 x 45+22 mm <sup>2</sup>						✓		✓		<sup>1</sup>
 <b>Design paving</b> 250 x 250 x 100 mm 250 x 250 x 65 mm 250 x 250 x 45 mm						✓		✓		
 <b>Rubber-concrete slab</b> 500 x 500 x 40+45 mm					✓					<sup>1</sup>
 <b>Puzzleslab</b> 1000 x 500 x 45 mm						✓				
 <b>Double-T Impact Protection</b> 160 x 200 x 43 mm				✓						
 <b>Playpoint base</b> Ø 1800 x 35 mm		✓								

# Frequently asked questions about synthetic fall protection.

## Are the sheets permeable?

Yes, the sheets are permeable to water and dry quickly. This keeps the surface hygienically clean and prevents puddles forming on the surface.

## Is there a difference in quality between SBR and EPDM?

No, there is no difference in terms of quality. The main difference is in the material:  
SBR consists of recycled rubber granulate, EPDM consists of new rubber.

## How long does a sheet last?

In general, the products are very durable and robust. As with all products, the durability of an individual fall protection area depends on how often it is used, maintenance intervals and upkeep.

## Can the sheets be driven on?

Due to their properties, fall protection plates are not suitable for driving in with motorised vehicles. For such purposes, Conradi+Kaiser for example has an extensive alternative range.

## Are the products also suitable for indoor use?

The products have been developed for outdoor areas. Special treatments allow them to be used indoors also. Talk to us about individual solutions!

## Where can I obtain certificates and how are the sheets installed?

You can download detailed data sheets with installation instructions and the certificates from our website  
>> <https://www.conradi-kaiser.com/en/>