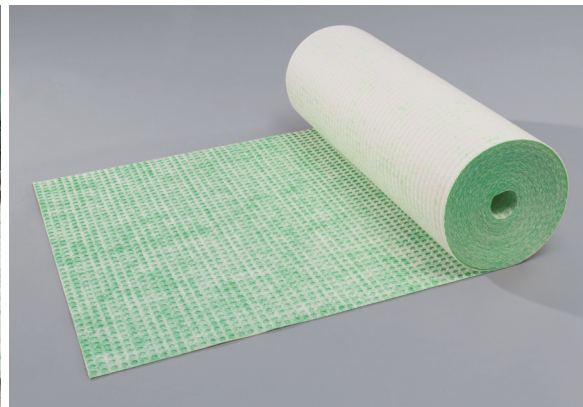


# PROSECURE PE+

## Decoupling mat under fixed laid tiles or paving



### Fields of application:

**PROSECURE PE+** is a decoupling mat to compensate and dissipate stress between the substrate and the floor covering by means of a carrier fleece laminated on both sides. **PROSECURE PE+** is used in dry and damp rooms on floor surfaces in domestic and commercial areas. **PROSECURE PE+** acts in the same way as an underlay mat on screeds and floor constructions that have low adhesive strength in places, provided the mechanical loads are low in later usage. **PROSECURE PE+** protects moisture-sensitive substrates such as wooden floors, magnesium or gypsum-based screeds from excessive mixing water emanating from the screeding mortar. When laying large-format tiles and paving, **PROSECURE PE+** helps to dissipate moisture from the bearing substrate adequately. This moisture is difficult and slow to escape from the mixing water of the thin-bed mortar and jointing compounds. With underfloor heating, **PROSECURE PE+** acts through the channels on the underside to distribute the heat along the entire surface area. **PROSECURE PE** is used in the construction of new buildings and in the renovation of old buildings.

- As a decoupling, bearer and protective layer
- For tiles and paving made of natural, cast and terrazzo stone
- In dry and damp rooms on floor surfaces in domestic and commercial areas
- On cement, anhydrite and magnesium screeds, in-situ concrete surfaces, precast concrete parts, double floor structures and wooden floor structures
- On mixed substrates

- On cracked rigid surfaces with no risk of existing or future height offsets or major crack propagation
- On surfaces with a low adhesive spectrum
- Protects the bearing substrate from mixing water in screeding and jointing mortar.
- Compensates or dissipates thermal stress conditions caused by underfloor heating or solar radiation in flooring zones exposed to different temperatures.
- Compensates or dissipates stress conditions in shrinking substrates (e.g. concrete).
- For laying tiles and paving on unheated mastic asphalt screeds

### Product advantages:

**PROSECURE PE+** is easy to work and can be simply cut using a sturdy building knife or carpet shears. Despite its higher decoupling performance, **PROSECURE PE+** has a very low fitting height. The fleece applied to the top and under sides provides excellent adhesion between the mortar or adhesive and the substrate and the top floor covering. **PROSECURE PE+** compensates for stresses in the horizontal plane existing in the substrate at the time of laying or later. The top flooring made of tiles, natural or cast stone or terrazzo is also protected by any damage that may occur.

The LDPE stud membrane in **PROSECURE PE+** is resistant to many acids, alkalis, salt, organic solvents, alcohol and oils. The studs filled with mortar transfer static and dynamic loads downwards and ensure good mechanical loadability. The general

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function of **PROSECURE PE+** is to increase the freedom of damage on otherwise problematic substrates.

**PROSECURE PE+** is expandable, rot proof, resistant to bacteria and fungal attack and is harmless to drinking water.

**PROSECURE PE+** protects the surface in the event of moisture build-up on the underside and also protects as far as possible against diffusion processes or capillary absorption.

- Low fitting height
- Light and easy to use
- High decoupling performance
- Bridges cracks
- Makes it possible to lay on problematic substrates

### Delivery form:

Sheet material wound onto a roll, 1.00 m wide

Rolls of 10m<sup>2</sup> Art.no.: 93204

Rolls of 30m<sup>2</sup> Art.no.: 93203

For packaging units (VPE), please refer to the price list, the relevant price sheets or product news sheets, or speak to your specialist dealer.

### Specifications:

Material	Sheet material of LDPE stud membrane backed with PP fleece on top and bottom
Colour/layer	Film green, fleece white
Width	100 cm (+/- 5 mm)
Fitting height bonded	approx. 4 mm
Product height in total	approx. 3 mm
Number of studs	approx. 2500 per m <sup>2</sup>
Air volume (between studs)	approx. 1.56 l/m <sup>2</sup>
Weight	approx. 600 g/m <sup>2</sup>
Temperature resistance	-40 °C - +80 °C

### Supplementary products:

PROBAND S butt-joining tape	Special glass mesh fabric with centrally attached adhesive strips
Colour	white
Width	75 mm, centrally attached self-adhesive strips with a width of approx. 30 mm
Rolls	25 m
Art.no.:	93722
PROBAND L butt-joining tape	Special glass mesh fabric with centrally attached adhesive strips
Colour	white
Width	150 mm, centrally attached self-adhesive strips with a width of approx. 30 mm
Rolls	25 m
Art.no.:	93723
PROSTRIP S Edge insulating strip	Fleece-backed PE edge insulating strip with self-adhesive foot and clinging technique
Colour	Green
Width	50 mm high, 8 mm thick
Rolls	25 m
Art.no.	93520
PROSTRIP L Edge insulating strip	Fleece-backed PE edge insulating strip with self-adhesive foot and clinging technique
Colour	Green
Width	100 mm high, 8 mm thick
Rolls	25 m
Art.no.	93521

### Storage and transportation:

Roll and mat parts must be kept cool and dry and protected against sunlight and dirt. They must be stored and transported in standing position. The storage period under these circumstances is 24 months.

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## Environmental protection and disposal:

Containers and surplus materials must be disposed of in accordance with legislative regulations and regional by-laws.

## Instructions on hazardous goods and substances:

No special measures required.

## Preparation/assessment of substrate:

The substrate must be clean, dry, free from loose or detachable bits. It must have sufficient adhesion, be rigid and pressure-resistant to withstand the design loads, and permit an adhesion of  $> 0.3 \text{ N/mm}^2$  using the intended adhesive or thin-bed mortar. The evenness of the substrate must meet the necessary quality requirement depending on the subsequent top layer. The substrate must be evened out before **PROSECURE PE+** is laid. The substrate must have sufficient rigidity and must distribute the load over the surface area. Any cracks in the floor covering must be filled and dowelled professionally. Cracks with a width of under 0.5 mm can be bridged without being closed, provided it is ensured over the long term that no height offsets occur at crack edges or the cracks do not expand. Substrates must be assessed and prepared according to the relevant codes of industrial practice. The manufacturer's details of the chemical products used must be observed.

## Laying/processing:

### Preparatory measures / site planning

Attach **PROSTRIP S** or **PROSTRIP L**-edge insulating strips to all rising components and installation parts to prevent non-positive connections and sound bridges.

Prepare substrates with the required evenness, slopes or strength.

Filling and levelling compounds must be firm, dry and completely hardened. The ideal ambient and substrate temperature is between 18°C and 25°C. It is recommended to create the climatic conditions which correspond to the later conditions of use. Roll out the mats, cut them to size and allow them to acclimatise in the room.

The empty stud recesses of **PROSECURE PE+** must point upwards. Bond the side containing the continuous flat fleece to the substrate. When applying the screeding mortar for **PROSECURE PE+**, make sure that no mortar bridges occur at walls and building components (leave a spacing).

Prepare it for bonding the mat depending on the type and construction of the substrate. Prime or pretreat the substrate to suit on the mortar or adhesive used. To bond **PROSECURE PE+**, low-shrinkage thin-bed mortar should be used with a minimum grade of C2 S1 as per DIN EN 12004/12002.

Use dispersion adhesives containing little water with minimum grade D2 as per DIN EN 12004 to bond the mat to the substrate and use a smoothing trowel with 3 mm teeth. The substrate must be sufficiently absorbent for this. It is preferable to use rapid hardening thin-bed mortar with low water requirement with greatest possible water binding. This allows work to continue at a faster rate on already laid strips. Choose the right adhesive or mortar depending on the type of substrate and the loading parameters. The adhesive or mortar must cover the fibres on the backing fleece well. If there is any uncertainty or concern, even with regard to material incompatibility, carry out a preliminary test.

### Processing

Spread the thin-bed mortar over the width of the material using a 4 mm toothed smoothing trowel. Then lay the cut material lengths and press well down. Roll out using a suitable carpet roller or press down with a smooth float or wooden block. The time available to fit the strips dictates the amount of adhesive/mortar that should be spread. Do not spread more than can be laid. Make sure the mat has as full a bedding as possible. When pressing down the material lengths, make sure the top fleece covering is not damaged.

Cut the mats to the required joint width along joints to the building structure, connections and boundaries. Abutments at material length ends or at cuts must be offset by at least 25 cm to adjacent abutments (avoid cross joints). At abutments, make sure no mortar or adhesive is pressed up into the joint. To avoid this, use a trowel to slope off the spread mortar or adhesive along the laid material edges.

After laying the material lengths, apply the **PROBAND S** or **PROBAND L** butt-joining tape centrally over the butt joints using the backed self-adhesive strips. Make sure the self-adhesive strips cover the open joint area well.

If it becomes necessary to walk (carefully) on the laid mats, take care not to create any blisters or swellings. Lay the top floor

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covering after the adhesive/mortar is sufficiently cured under **PROSECURE PE+** and the mats are fixed in place. The curing time may be longer with mortars that are slow to harden. To protect the laid mats from damage or becoming detached, place formwork boards, planks, hard-foam boards or similar along the walk and work areas. It may also be necessary to shade the work zone from strong sunlight, e.g. when working in showcases.

## Underfloor heating

Function heating only helps to test the preceding disciplines of 'insulation, heating and screeding'. Due to the risk of defects in the preceding disciplines, function heating should be carried out.

## Cement-based heated screed floor

If the screed shows no signs of cupping or other defects after function heating, **PROSECURE PE+** can be laid even without ready-for-laying heating. Screeds which are already cupped may not receive a covering until the deformation has fully dried out and disappeared.

## Alpha-hemihydrate screed floor

If the screed shows no defects after function heating and has a maximum of 0.5 CM% or below of residual moisture at all points on the surface, **PROSECURE PE+** can be laid as a bearing or protective layer.

To bond the mat, use thin-bed mortar with the smallest amount of mixing water and a smoothing trowel with 3 x 3 mm teeth.

## General

Hot water underfloor heating systems must be equipped with temperature controllers. The supply flow temperature in the heating pipes or the electrical underfloor heating may not exceed 40°C. The floor zones must have geometric shapes (square).

## Laying the top floor coverings:

To lay tiles or paving, use the smooth side of the toothed trowel to spread the screeding mortar and smooth it out flush with the top of the stud membrane.

Use more fresh mortar immediately after and spread out using a suitable toothed trowel. Lay and position tiles or paving according to the usual codes of practice to achieve full contact with the mortar bed. The mortar selected must meet the load-

ing requirements of the floor and the floor covering material. The quality of the tile bedding has a direct influence on the mechanical loading capacity. Comply with the specifications of building chemical product manufacturers, in particular with regard to applicability in specific construction site conditions.

## Expansion joints, building joints and connection joints

Expansion joints, boundary joints and connection joints to ascending walls and built-in parts must be taken over in the plane of **PROSECURE PE+** and the top floor covering at regular intervals, at the same point and in the same width as in the substrate.

There should be no non-positive connections at any point caused by screeding or jointing mortar, the floor covering itself or any other materials. Expansion joints or boundary joints may be closed off by using suitable elastic filling compounds or by installing **PROCONNEX thin-bed profiles**. The greater the anticipated mechanical load on the surface, the more stable the expansion joint profiles should be (e.g. **PROCONNEX thin-bed profiles** made of metal). Double **PROFLOOR angle profile** made of metal can be fitted to protect covering edges and later the elastic filling.

Building joints must be formed using suitable profiles that have been packed underneath and plugged to the supporting floor at a height of the ready surface. **PRONIVO** transition and compensator profiles must be fitted to free-ending covering edges to protect raised covering edges. **PRONIVO** profiles are bonded full surface to the supporting substrate under the **PROSECURE PE+** mat, filled with sufficient mortar or dowelled if necessary.

It is recommended to install and dowel sufficiently sturdy expansion profiles directly on the supporting substrate at the height of the finished floor covering to cater for the expected loads caused by movement and rolling. Connection joints of the floor covering to the profile must be elastic and of sufficient width.

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## Chemical and mechanical loadability:

Decoupling systems reduce the mechanical loadability of floor coverings and therefore cannot compensate for or reduce the lack of compressive and flexural strength in the substrates.

Therefore, the following applies:

- The greater the flexural strength and compressive resistance of the substrate and the higher the breaking strength of the tile and slab material, the larger they can be. Likewise, the mechanical load capability of the top layer that guards against destruction through impact (such as from falling objects) is also greater. The floor covering can withstand pedestrian traffic up to medium-heavy rolling loads with no problem.
- The permitted mechanical load comprises Loading Group II in accordance with ZDB (Federation of the German Construction Industry) Data Sheet 'Highly loaded coverings', as of October 2005.
- Light to medium rolling loads could be lightweight serving trolleys on hard plastic wheels but also a passenger vehicle being pushed or travelling at walking pace on pneumatic tyres.
- The use of lift trucks or other industrial trucks always represents high to very high mechanical loads. For applications such as this, **PROSECURE PE+** is not suitable.
- Mechanical loading from rolling loads depends on the weight of the rolling load, the type of wheel, the wheel size and the wheel material. These parameters result in the relevant wheel compression force. Compression force may not exceed 1.0 N/mm<sup>2</sup>. The top floor covering must be sturdy enough to withstand this force. In general, floor coverings made of tiles and paving are non-flexible. Substrates should therefore not deform or sag under the loads anticipated in the rooms.

**PROSECURE PE+** is often used in a wide variety of applications and combinations. The floor covering material may have a number of different qualities. For this reason, our specifications can only provide general information. If specific applications are required, please clarify the use of our products for each individual case.

## Important information:

- The smallest tile format may not be less than 5x5 cm.
- The substrates covered must be sufficiently rigid, resistant to compression forces and have low vibration levels to cater for the projected load levels.
- Mortars, dispersions and elastic filling and sealing compounds containing polymers must be allowed to dry completely at least once before they reach their full functionality and the surface areas are released for their intended use.
- Make sure in every work step that the mortar and adhesives have hardened adequately and any connections are not disturbed or destroyed by subsequent work.
- Floor coverings, e.g. thin ceramic tiles, are more likely to sustain damage from the effect of shocks or impacts than when they are directly combined with sturdy load distribution plates.
- **PROSECURE PE+** does not replace the fitting of expansion joints or the planning and implementation of work zones of sufficient size.
- Polyethylene and polypropylene have only a limited resistance to UV radiation and must be protected from direct sunlight.
- Difficult natural or cast stone must be prevented from cupping by using suitable mortars or other measures.
- When the floor coverings fitted with decoupling systems are walked on or tapped, the sound should be 'hollow'. This is not a sign of the quality of workmanship.
- Screeds which are subject to serious cupping carry the risk that greater settling and subsidence at a later date will cause cracks in built-in components and walls and may result in the shearing of the floor covering or the mat in the stress zone.
- Wooden floorboards must be screwed down tight. The planks are not allowed to move towards or away from each other at all.
- Wooden panels must be screwed down tight every 40 cm square and the tongue and groove joints must be permanently glued. Beam ceiling supports must have a maximum spacing of 60 cm. Joints must be placed centrally on the support. The wood moisture must be the same as the moisture balance.

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## Standards and regulations:

It is recommended that the following standards and regulations are observed and taken into consideration:

- DIN 18352 Tile laying work
- DIN 18332 Natural stone work
- DIN 18333 Cast stone work
- DIN 18353 Screed work
- DIN 18202 Tolerances in building construction
- DIN 18560 Screeds in building construction
- DIN EN 13813 Screed mortar and screed masses
- DIN 18195 Building seals
- DIN 18157 Application of ceramic tiling using the thin-bed method
- Bulletins from German Association of Screed and Flooring
- Bulletins from Association of Tiles and Natural Stone in the Central Association of the German Construction Industry
- Schnittstellenkoordination beheizte Fußbodenkonstruktionen (Interface co-ordination for heating flooring constructions)
- ZDB Data Sheet 'Highly loaded floor coverings'
- ZDB tile and slab information 'Information on decoupling'
- BAKT InfoTechnik – Bathrooms in dry-wall construction
- Deutscher Natursteinverband (German Natural Stone Association) – Structural engineering information for natural stone

*All information, references, instructions, basic engineering principles, regulations, standards and expertise are based on German and largely equivalent European regulations and training standards, irrespective of additional country-specific supplements and amendments.*

*All our specifications are based on our experience and careful analysis. We are unable to examine or influence the diversity of associated materials used and the various construction site and processing conditions in detail.*

*Fulfilment of an imposed work order and verifiable functionality of the object therefore depends on the observation of current VOB rules and the recognised rules of technology.*

*Our details do not absolve the accountable planner's and fitter's obligation to assess - on their own authority - the building conditions and practicability of the products. In case of doubt, carry out your own tests or seek technical application advice. Please refer to the laying and processing guidelines of the floor covering manufacturers or the manufacturers of associated products.*

*All product data sheets previously published are superseded by this product data sheet once published.*

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