Indor Tec[®] **Flexbone**-2E









Laying ceramic tiles and natural stone on difficult substrates indoors is not without its problems. It is either not possible to bond the covering directly or this process carries a high risk of damage. An additional challenge is the increasing use of largeformat coverings and the laying of ceramic and natural stone coverings on difficult substrates in heavy use areas.

Most of the problems have their origins in the substrate.

It is just not easy to bond neatly to a difficult substrate.

Ceramic or natural stone coverings can be laid directly without problems on most indoor substrates. But when renovating buildings in particular, we often come across so-called difficult substrates, where laying a rigid covering without an uncoupling layer would unavoidably lead to damage. Among these are for example mixed substrates, cracked or fresh, still shrinking screeds and wooden floors. With these, differing expansion coefficients of the materials and shrinkage deformation caused by residual moisture lead to cracks and delamination or bulging of the covering.

Wooden substrates:

Wood or wood-like substrates change according to differences in temperature and air humidity. Changes in length caused by the above inevitably cause delamination of the covering and cracks unless appropriate precautions are taken.

Cracked (heating) screeds:

With heating screeds, thermally caused stresses between covering and screed, missing or wrongly installed expansion joints or too low a pipe covering are the most frequent causes of cracks in the screed.

Fresh cement and anhydrite screeds:

The necessary maturity for laying ceramic materials as a covering on screeds is hard to achieve even under favourable conditions. Some residual moisture usually remains in the substrate. The resulting shrinkage leads to delamination of the covering and cracks.

Mixed substrates:

With mixed substrates consisting of different materials and in the transition areas from old to newly processed screed surfaces, cracks frequently occur due to the different deformation of the materials. Without an efficient covering between top covering and substrate, these will transfer to the new ceramic covering.

Substrates with problem adhesion:

Mastic asphalt, paintwork, oil-contaminated substrates and carpet adhesive residues are a real challenge when laying ceramics and natural stone. In standard laying, these have to be removed. This in turn is often combined with a great deal of technical and craft difficulty.

Hard PVC/Linoleum floors:

The removal and disposal of old, problem adhesion hard PVC/linoleum floors, together with the abrasion and creation of a substrate suitable for tiles, are cost and time intensive.





Sheer stresses caused by different expansion coefficients of the covering and substrate or by fresh, still shrinking screeds will lead to cracks and bulging of the covering.

Large formats - big challenge.

Large format coverings are the coming trend due to their spacious appearance. However, it is necessary to consider that there are far fewer joints than is the case with smaller plaques. This means that stresses originating in the substrate cannot be so easily reduced. Residual moisture in the construction is harder to draw off.

Not every system can stand up to high loads.

When laying coverings in high load areas, a further consideration is that the covering must not only be efficiently uncoupled from the difficult substrate, but also that the uncoupling system must have an optimum load transfer in order to absorb the forces arising on a long-term basis.

Indor **Tec**[®] **FLEXBONE THE NEW FORM OF SAFETY**

With IndorTec[®] FLEXBONE, GUTJAHR is offering a completely new, revolutionary, safe uncoupling system for the laying of ceramics and natural stone on difficult substrates. The patented bone-shaped structure and its unique benefits make IndorTec[®] FLEXBONE the high-performance and reliable "backbone" of your covering – particularly for large format or heavy load coverings.

The sickle-shaped undercuts of the GripLock technology ensure optimum grip of the adhesive, providing the greatest adhesive strength

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The bone-shaped structure enables high flexibility and plasticity, neutralising stresses from the substrate The channel system with its linkage throughout ensures even distribution of residual moisture from the substrates



An excellent adhesive bond with the substrate is one of the things needed to ensure a permanent damage-free laying of coverings; the bond is determined by so-called bond strength values.

IndorTec[®] FLEXBONE, with its GripLock technology, ensures an optimum even grip of the adhesive mortar on the uncoupling mat. This is made possible by alternating undercuts in the bone structure of the mat.

This has also been shown by a survey by the MPA Wiesbaden: IndorTec® FLEXBONE offers up to 66% higher tensile bond strength and thereby demonstrates a proven increase in safety compared to membrane-based uncoupling mats.



Strong bones - yet still flexible.

An uncoupling system is intended to prevent stresses and movement of difficult substrates from damaging the covering.

The unique bone-shaped structure of IndorTec[®] FLEXBONE enables a definite increase in flexibility for the total system. This means that deformations in the substrate can be excellently absorbed and neutralised. This is made possible by the mortar only being stopped at the curves of the "bones". In contrast to straight-lined undercuts, this achieves greater and more flexible plasticity and avoids linear uncoupling blockages.

The channels, continuously connected in all directions, also ensure even distribution of residual moisture from the substrates.



Indor Tec Flexbone-2E Floating laid uncou

IndorTec® FLEXBONE-2E is laid floating, that is to say without bonding with the substrate. The system ventilates and uncouples the covering from the substrates in a single process – permanently and reliably. The mesh weave reinforcement even allows for use on substrates with problem adhesion. In addition, the floating laying process saves up to 50% of the laying time usually required.



Substrate (here: linoleum) IndorTec[®] FLEXBONE-2E floating laid uncoupling mat with mesh weave reinforcement Ceramic/Natural stone covering



As you can imagine, laying is quick and easy:

- 1. Spread out the uncoupling mat.
- 2. Smooth and fill the uncoupling mat with a trowel.
- 3. Lay the covering on a thin layer of mortar.
- 4. Fill the joints in the covering.

The uncoupling system that saves time.

IndorTec[®] FLEXBONE-2E is the only uncoupling system that ventilates and uncouples without adhesion to the substrate. This means that the usual necessary work of preparing the substrate, priming and glueing the mats to the substrate is no longer required.

Ideal for floors with problem adhesion.

Thanks to the mesh weave reinforcement laminated to the upper side, IndorTec® FLEXBONE-2E creates an independent covering carrier that does not need to be bonded to the substrate in order to function. This also makes it possible to use on substrates with problem adhesion such as paintwork, PVC, linoleum, oil-contaminated floors and fresh cement/anhydrite screeds.

pling: ideal for substrates with problem adhesion





Residual moisture in the substrates is evenly distributed through the channel system and can then be drawn off through the perforations in the mat via the covering joints.

Uncoupling and ventilation in a single system.

The perforated IndorTec[®] FLEXBONE-2E also provides ventilation of the covering. Any residual moisture, for example in fresh screeds, can be evenly distributed horizontally through the channel system and gradually be drawn off through the perforations in the mat and via the covering joints. In this way, substrates that are still damp are not encapsulated.

Change the covering – but be quick about it.



When changing the floor covering, for example for a change of tenants, modernisation or renovation, you need a quick and clean solution, one that often has to be carried out during continuing occupancy. With IndorTec[®] FLEXBONE-2E, the covering is uncoupled 100% from the substrate, functioning like an exchangeable covering that can be swapped over simply, cleanly and quickly.

Your benefits at a glance:

- Save up to 50 % of time by floating laying without adhesion to the substrate. Work in preparing the substrate, priming and glueing the mats to the substrate is no longer required.
- **No cracks, no delamination or bulging** of the tile or natural stone covering thanks to safe ventilation and uncoupling from the substrate.
- Avoids build-up of moisture by means of even, horizontal and vertical ventilation of residual moisture in the lower construction via the air channel system and perforations in the mats.
- Can be used even on substrates with problem adhesion due to the reinforced covering carrier, which provides an independent covering shell.
- Ideal for exchangeable coverings, as due to the 100% uncoupling, exchange is possible without damaging the substrate.
- Tried and tested in use as a system for over 15 years.

To summarise.

Indor Tec Flexbone-2E

Uncoupling mat

The floating laid uncoupling system with ventilation function

- Material: PP
- 3 mm perforated, specially shaped, rot-proof plastic membrane with reinforcing weave laminated onto the top surface

Areas of application:

- Low load: Residential buildings and surfaces with similar mechanical stress
- Medium load: Car showrooms (after consultation with AWT)

Substrate requirements:

Even, pressure resistant, load-bearing, non-flexing

Suitable substrates:

- Wood or wood-type substrates
- Dry screeds
- Fresh, still damp cement/calcium sulphate screeds
- Cracked (heating) screeds
- Mixed substrates
- Substrates with problem adhesion, e.g. hard PVC/Linoleum floors, mastic asphalt, paintwork, oil contaminated substrates, carpet glue residue

Covering formats*:

- Porcelain stoneware min. 200 x 200 x 8 mm
- Stoneware min. 200 x 200 x 10 mm
- Natural stone min. 200 x 200 x 15 mm
- For large formats
- With wooden constructions, formats up to 350 x 350 mm are possible

* Please find further information on covering requirements in the relevant load groups in the IndorTec® FLEXBONE-2E Technical Data Sheet

Definitely the best safe solution:

All GUTJAHR products are quality German products, the result of 25 years of experience and intensive development work. The innovative and patented components of our complete systems are designed to go together and ensure that contractors, architects and installers can rely on permanent freedom from damage.





What the experts say:

According to the specialist information sheet 04 of the Fachverband Fliesen und Naturstein (German Association for Tiles and Natural Stone) (Planning and execution of uncoupled indoor coverings), uncoupling makes sense if tiles and natural stone are laid on difficult substrates. The use of an uncoupling system also depends on the area of use and the covering material employed. Your GUTJAHR partner dealer:

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