

MineralDicht

RELIABLE PROTECTION OF YOUR BUILDINGS FROM

PENETRATING WATER AND MOISTURE



THE SITUATION <

It is often said that building a house is a the fight against water. Therefore, waterproofing of buildings has always taken up a special place in the building trade.

THE PROBLEM <

Every building has to be protected from the penetration of water by an adequate waterproofing. This has already to be taken into account during the planning. Often, a subsequent waterproofing is rather difficult and, in every case, it will be expensive. It is, however, inevitable to seal the building subsequently, if, unforeseeingly, water penetrates the building or if changes are made on the building.

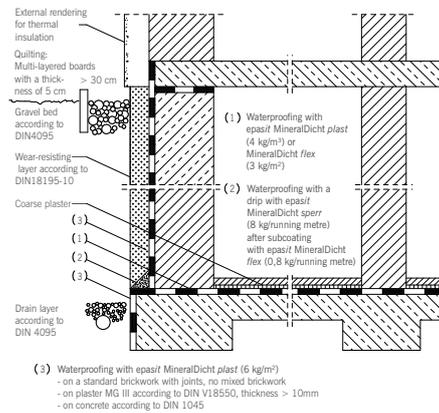
THE CAUSE <

Water can reach or penetrate the brickwork by various ways. Percolating water and water coming from slopes press from outside through the walls. Driving rain, too, can have the effect of water under pressure and moisten the facade thoroughly. Due to indoor condensation water the plaster of the wall itself will be moistened thoroughly. The salts, which are always present in old walls, absorb moisture from the air. Then, the brickwork absorbs the moisture like a sponge.

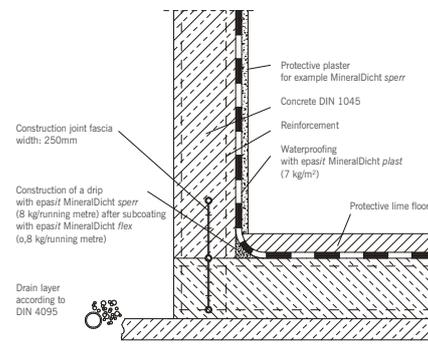
THE SOLUTION <

A subsequent waterproofing or rehabilitation of moist brickwork is a challenge to building owners, planners, the manufacturers of the material and fabricators. The expertise of the brickwork has to be as obvious as a conscientious working method of all persons involved. Only then can be decided in advance which measures are appropriate.

> Waterproofing against soil moisture and non-accumulating percolating water on bearing plates and walls according to DIN 18195-4



> Waterproofing against water pressing from the inside according to DIN 18195-7



For waterproofing buildings, *epasit* offers for more than 50 years cement-bound, mineral sealing materials. They consist of standard raw material, such as Portland cement and washed silica sand of an exactly gradated grading curve.

Sealing slurries are suitable as a substrate for lime floors, lime casts, lime-cement casts and cement facings as well as for tiles and slabs.

Flexible sealing slurries are also suitable for the conglutination of a flexible joint fascia as well as for the sealing in connection with ceramic panel-lings and coverings.

epasit also offers sealing mortars and sealing plasters, which can be applied as a single layer with a higher layer thickness as well as quick-setting mortars to stop inflows of water.



> TYPES OF LOAD

The water load acting upon a sealing is defined in the standard DIN 18195 "Bauwerksabdichtung" (waterproofing of buildings). In the meantime, this standard is also valid for sealing slurries.

The DIN 18195 specifies the types of loads soil moisture and non-accumulating percolating water, non-pressing water, water pressing from the outside and accumulating percolating water as well as water pressing from the inside. In addition to this, there can also be water having an effect on the backside of the building, which can be stopped with the *epasit* sealing products. This type of load is not specified in the DIN 18195.

> ADVANTAGES OF MINERAL SEALING MATERIALS

Because of their ingredients, mineral sealing materials can be seen as environmentally safe. Sealing slurries, sealing mortars and sealing plasters are mainly used on concrete, brickwork or areas of cement facing. Thus, they are similar to the substrate and therefore optimally compatible. Their alkalinity offers an additional protection of the armoured concrete from carbonization.

Another advantage is that they can be processed without difficulties. They can be used in vertical and horizontal direction. Because they are applied on a moist substrate, a quicker construction progress is possible. It is possible to apply plaster or tiles on sealing slurries. Another important advantage is their water vapour permeability in connection with a simultaneous tightness to liquid water.

The only disadvantage of sealing slurries, which is often mentioned, is that they were rigid and could not bridge cracks. Capillary cracks, however, can very well be absorbed by sealing slurries. They even cure mineralically. Static cracks have to be excluded from the beginning with the help of structural measures.

If there should be the risk of cracking in the substrate, the flexible sealing slurry *epasit* MineralDicht flex can be used. It bridges cracks appearing subsequently. It has been developed approx. 25 years ago and is distinguished by the fact that it is mixed with a liquid component instead of water. The same applies to *epasit* MineralDicht sockel, a sealing material used especially for protecting the passage between the area touching the ground and the socle. Plasters or slabs can be applied to this sealing.



> **REGELWERKE**

For the planning and carrying out of building waterproofings exist numerous standards, recommendations, and other sets of rules. As regards sealing works, it is usually referred to DIN 18195, which includes sealing slurries. Sealing mortars and sealing plasters are described in the European Standard EN 998-1.

All standards deal only with the field of new buildings and not with the subsequent waterproofing of buildings. For this, other sets of rules have to be consulted, such as the WTA code of practice 'subsequent sealing of building components touching the ground' or the standards of the Deutsche Bauchemie e.V.

The products of *epasit* MineralDicht have the necessary test certificates according to DIN 18195 and DIN EN 998-1.

> **CARRYING OUT OF SEALINGS**

Usually, the sealing is carried out on the active side, which is the side facing the water. On the passive side the sealing is made, if, for example, a basement area is not accessible anymore from the outside. On principle, the inner sealings are to be planned and carried out in a way that trough-shaped sealing areas without joints result from it. If the water is pressing from the rear side, a load is necessary on the sealing.

In many cases, measures or materials are preferred, which do not count directly to the classic sealings, such as horizontal sealings, systems of renovation mortar or sorption-capable boards of calcium silicate. All these systems are also offered by *epasit* and have been proved over decades.



> **EXAMPLE**
REHABILITATION OF WELLS



> **PROCESSING**

A prerequisite for a good bonding strength of the sealing materials is a stable substrate. Old coatings have to be removed, if they do not adhere firmly. Another material can directly be applied on the new concrete, if it is free of impurities.

The processing of sealing slurries has to be carried out very carefully. The sealing slurries have to be applied in a completely closed layer with an even layer thickness. The thickness of the dry layer has to be at least 2 mm and must not exceed 5 mm. It depends on the loads and on the type of loads.

The sealing slurries can be applied by means of different methods. The material can be mixed manually (with the help of a stirring apparatus) to receive a consistency which can be processed. Then, it can be applied to the surfaces. Usually, a swab or a brush is used for it. However, a mechanical processing is also possible.

The sealing mortar and the sealing plaster will be applied manually or with the help of a machine. According to the surface roughness of the substrate, the use of a bonding coarse plaster (epasit MineralSanoPro hb) is necessary. In the foundation area it has to be paid attention that the sealing will not be damaged mechanically. Therefore, wear-resisting layers have to be provided

MineralDicht	<i>plast</i>	<i>flex</i>	<i>sockel</i>	<i>mörtel</i>	<i>sperr</i>
Substrate	Armoured concrete Brickwork* Cement facing	Armoured concrete Brickwork* Cement facing Old plaster	Armoured concrete Brickwork* Cement facing	Coarse Concrete Brickwork Cement facing	Brickwork Cement facing
Type of load active passive	pressing pressing	pressing not allowed	nicht zutreffend nicht zutreffend	non-pressing non-pressing	pressing pressing
Gauging	Water	epasit dsf	epasit dsf	Water	Water
Layer thickness	from 2,0 to 4,0 mm	from 2,0 to 2,5 mm	2,0 bis 3,0 mm	7,0 mm	15,0 mm
Consumption non-pressing pressing	4 kg/m ² 7 kg/m ²	3 kg + 1,0 l/m ² 4 kg + 1,3 l/m ²	3 kg + 1,0 l/m ² 7 kg + 1,6 l/m ²	14 kg/m ²	30 kg/m ²

* without joints or made in brickwork with levelled joints

> **Gwickstopp epasit gs**

A very quick setting cement mortar to stop the inflow of water.

> **epasit MineralDicht plast**

Mineral sealing slurries according to DIN 18195-2 for the sealing against non-pressing and pressing water. With a test certificate of a legal authority for constructions/building law.

> **epasit MineralDicht sulfat**

Sulphate-resisting sealing slurries for the sealing against non-pressing and pressing water.

> **epasit MineralDicht flex**

Flexible sealing slurries according to DIN 18195-2. A combination of epasit MineralDicht *plast* and the liquid component epasit dsf for a crack-bridging sealing against non-pressing and pressing water. With a test certificate of a legal authority for constructions/building law.

> **epasit MineralDicht mörtel**

Cement dry mortar according to DIN EN 998-1 for the sealing against non-pressing water.

> **epasit MineralSanoPro hb**

Cement dry mortar as a coarse plaster/bonding bridge.

> **epasit MineralDicht sperr**

Cement dry mortar according to DIN EN 998-1 for the sealing against infiltration water and capillary water in the area touching the ground.

> **epasit MineralDicht sockel**

A combination of a powdery component and a liquid component. A flexible and crack-bridging sealing for the base area.