

The **ISODRÄN**[®]-board

– moisture and heat insulation –



Complete moisture protection

For foundation walls, concrete slab and crawl spaces.

Efficient drainage and thermal insulation of roof gardens.

Efficient drainage and frost insulation of sports fields.

Efficient drainage and frost insulation of retaining walls, outdoor stairs, ground constructions, water supply and sewage systems etc.

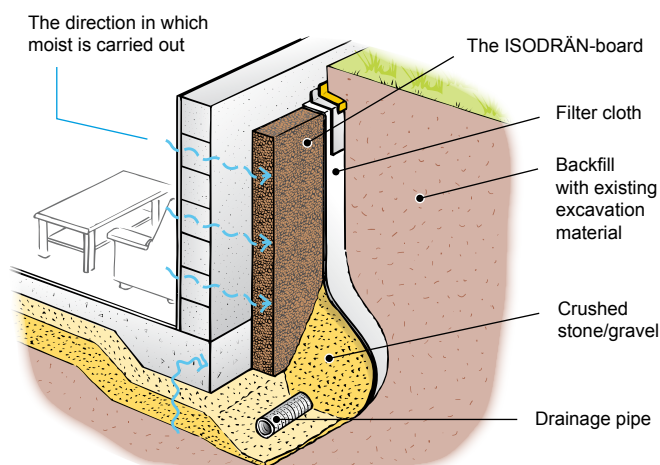
The complete moisture protection system for new and old basement walls.

A warm and dry basement wall requires a complete moisture protection system including drainage, capillary breaking, and thermal insulation. **Drainage** is necessary to direct excess water from the soil down to the drainage pipe. **Capillary breaking** is essential to prevent capillary moisture in the soil from being absorbed into the wall. External **thermal insulation** is a must to achieve a warm wall. When the wall is warm, the moisture that has caused any existing moisture damage effectively dries out and any moisture that penetrates the wall in the future will continuously dry out. A warm and dry wall also lowers the air moisture content indoors, keeps the temperature at an even level and lowers heating costs.

With the ISODRÄN-board you get these three essential qualities in one product. This means SIMPLE INSTALLATION and LOW COSTS.

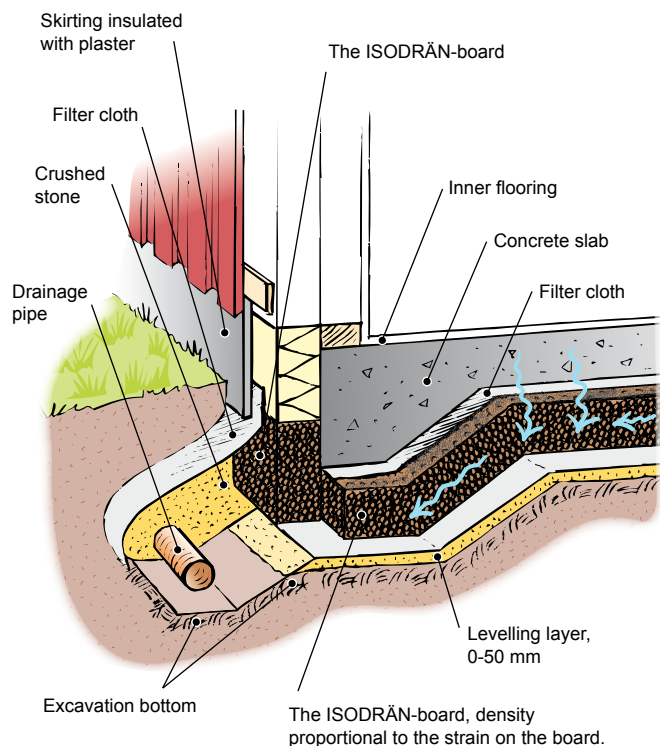
The ISODRÄN-board always needs to be protected by a filter cloth to prevent soil from entering the board and reducing its drainage capacity. When the Isodrän-board is protected by the filter cloth, it is possible to backfill with excavated soil, with a maximum rock size of 100 mm close to the filter cloth. To facilitate and speed up the drying

of basement walls, any kind of coating asphalt/bitumen layer on the exterior walls is to be avoided when using the ISODRÄN-board. These coating layers will hinder or prevent the drying process. The ISODRÄN-board's open structure optimises the drying of the basement wall. See also the back of this brochure.



Warm and dry wall (renovation)

Concrete slab



Warm and moisture secure floor (new construction)

Moisture protection of concrete slabs is carried out in the same way as basement walls. The requirements are the same, *Drainage, Capillary breaking and external Thermal insulation*.

The **Drainage** function leads rising groundwater away to a drainage pipe. **Capillary breaking** prevents moisture in the soil from being absorbed into the concrete slabs. **Thermal insulation** saves energy and keeps the ground cool and the concrete slab warm.

The temperature difference allows for a continual downwards drying, necessary for keeping the moisture level of the concrete slab low. This permits the choice of any floor surface material without running a risk of moisture damage.

The ISODRÄN-board optimises the **vapour diffusion** which gives extra protection from moisture, and it can easily be ventilated by a fan, which facilitates rapid drying and **protection against radon gas** from the ground. With these five functions the ISODRÄN-board is the natural choice for attaining dry floors.

NOTE! When using the ISODRÄN-board under concrete slabs it is very important to follow the advice of an authorised supplier regarding the compressive strength and thickness of the board.

Roof terraces, roof gardens and flat roofs

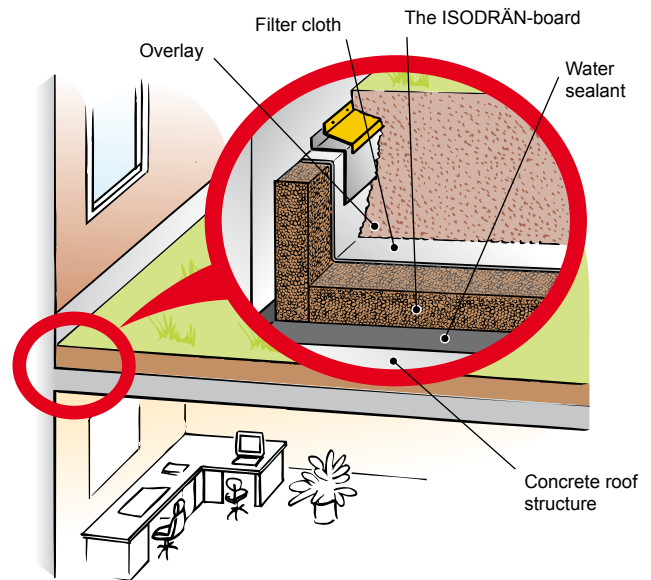
These kinds of constructions can and have caused a lot of problems with leakage, moisture and corrosion damage. Using the ISODRÄN-board these kinds of roof become dry, safe and easy to handle at a low cost. A concrete roof structure must have a drainage layer. The drainage layer should be placed directly on top of the water sealant to avoid water pressure that can cause large amounts of damage, even through small cracks in the water sealant. By using the ISODRÄN-board as a drainage layer directly on top of the water sealant the risk of high water pressure is eliminated. The drainage capacity of the ISODRÄN-board is optimised due to the irregular contact of the board with the water sealant. The board's low density of 19 - 55 kg/m³ reduces the load on the floor structure by approx. 120-180 kg/m² when compared to gravel.

The ISODRÄN-board's excellent thermal insulation capacity provides a number of other benefits for the floor structure:

- When the water sealant is warm the water that drains down to the water sealant after heavy rainfall quickly dries up. The top of the floor structure will therefore stay dry most of the time. The risk of damage from roots penetrating the drainage and water sealant layers is thereby eliminated.
- Higher temperatures in the floor structure contribute to lower moisture levels.

- An even temperature, which leads to a minimum of movement in the floor structure and water sealant.
- Water is prevented from condensing in the floor structure (if the installation is conducted as in the diagram).
- Lower heating costs.

Thermal insulation on the underside of the terrace floor shall not be performed, as the effect will be the opposite, resulting in cold and moist concrete floor structures.



Warm and dry concrete roof structure with no water pressure

Crawl space

Most crawl spaces in Sweden are naturally ventilated with outdoor air and run the risk of moisture damage due to low temperatures in the winter. This often leads to extremely high levels of moisture in the crawl space air in the summer and a great risk of serious moisture and mould damage.

A simple way of attaining a moisture safe crawl space is keeping the temperature in the crawl space so high that the RH – Relativity Humidity in the crawl space air never exceeds 75%.

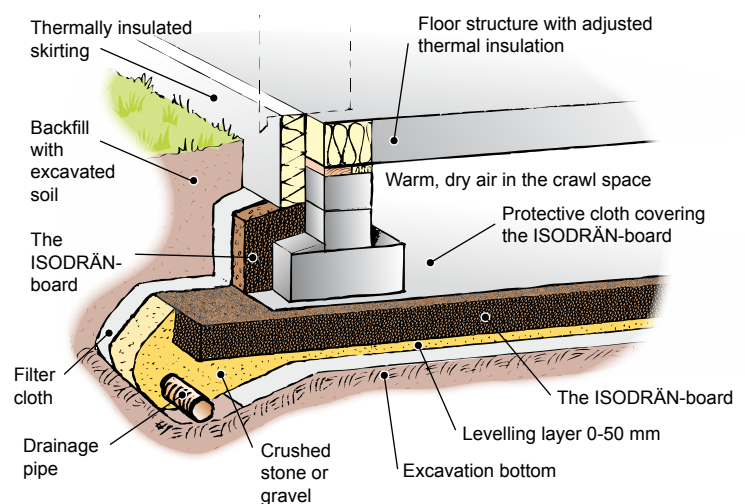
This requires that the crawl space is kept warm and that there is some form of dehydration mechanism. The foundation walls and ground are thermally insulated so that condensation is avoided, while the heat losses are minimised. The temperature is raised by adjusting the thermal insulation in the floor structure. The alternative is to ventilate the crawl space, creating under-pressure that causes an inflow of indoor air.

The ISODRÄN-board works in the same way as described under "Basement "Wall" and "Slab-On-Grade". Designated layers of gravel or crushed stone are not necessary.

The warm air in the crawl space combined with the ISODRÄN-board guarantees that the moisture content in

the air and construction elements is so low that moisture damages will not occur.

Foundations on with high radon content ground should always be set up with plastic foil underneath the ISODRÄN-board.



ISODRÄN-board under foundation wall, density proportional to pressure

The ISODRÄN®-board

– moisture and heat insulation –

The ISODRÄN-board consists of round EPS insulation foam balls with a diameter of 5 - 10 mm, that are glued together.

The structure of the Isodrän-board and the way it is manufactured gives the board five important qualities:

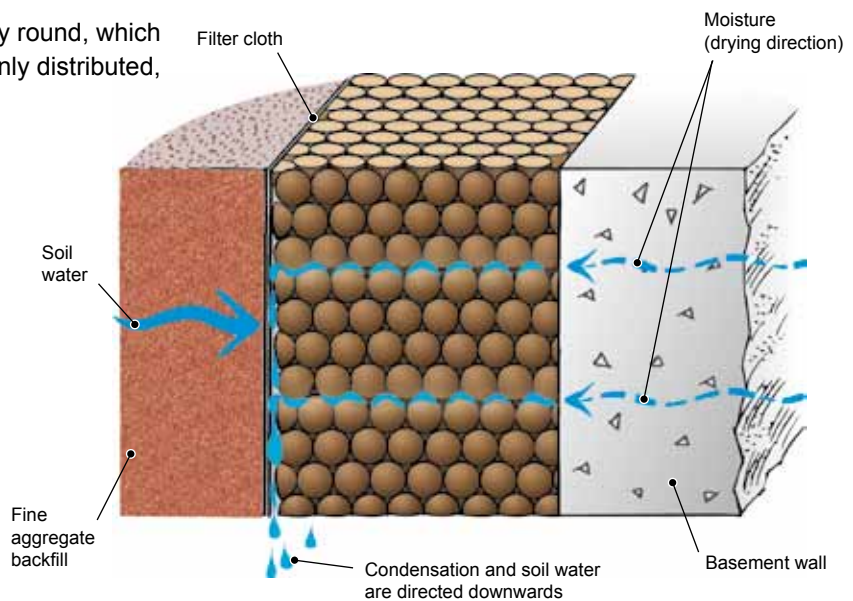
- The EPS foam insulation gives the board excellent thermal insulation qualities.
- The glue protects the EPS-beads from absorbing moisture and water. Furthermore the ISODRÄN-board is manufactured directly in the correct thickness and therefore has no cut surfaces that can absorb water.
- The glued EPS-beads and high porosity provide efficient capillary breaking.
- The open structure of the ISODRÄN-board optimises drying effectiveness.
- The EPS-beads are even-sized and evenly round, which provides the ISODRÄN-board with an evenly distributed,

high porosity, which in turn provides for a large drainage capacity and reduces water penetration into the board to a minimum.

The ISODRÄN-board is not to be equalled to a drainage board where the EPS-beads have been ex. melted-together, because the drainage capacity and the movement of water in these boards will be entirely different.

The "all-in-one" function of the ISODRÄN-board when it is used as moisture protection on the outside of foundation walls, or under slab-on-grade constructions means simple installation, a high moisture safety level and lower costs.

The construction of the ISODRÄN-board and the expertise of the manufacturer lay the ground for an efficient and safe moisture protection.



The function of the ISODRÄN-board on the outside of a foundation wall.

BASIC FACTS ABOUT THE ISODRÄN-BOARD

Size: 100 x 1000 x 750, 65 x 1200 x 800

Conformity mark: 0397 (SWEDCERT)

For additional information, please consult specific fact sheets or visit our website, www.isodran.com

RESELLERS:

MANUFACTURER:

ISODRÄN AB

Phone: 08-609 00 20

E-mail: infoiso@isodran.com

Website: www.isodran.com

ISODRÄN®