

HOW TO PROTECT ...

# Basement walls

... FROM MOISTURE



**ISODRÄN®**  
— the moisture protection —

# Basement walls need good moisture protection and drainage

## HISTORY

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The basement has a long history in Sweden; people have been building them since the 14th Century. Because of the environment in the basement, it has historically been used for storage of goods that can endure or even thrive in a damp and chilly environment. But due to the increasing costs of living, the previously unexploited areas of the basement gradually became attractive as living spaces. People started to furnish their basements. Recreation rooms became popular in the 1960's and 70's and today, basements are used for bedrooms, spas, gyms and other activities.

These changes require that the basement has a sound moisture protection system.

### Moisture protection and drainage

The first moisture protection for basements emerged in the beginning of the 20th Century. Pitch, distilled from pine tar, was smeared onto the walls. Later on the pitch was replaced with bitumen, an oil or asphalt based product with a longer life expectancy. This insulating coating initially prevented ground water from entering the building. But many coatings were and are not waterproof. Cracks may occur even from small shifts in the material, or due to inferior quality of previous coatings.

The earliest drainage pipes were made from brick, which were laid out in single or double "strings" around the basement. The mouths of the brick pipes were constructed next to the sewage system of the house, which did not have tight joints. The drainage water could therefore overflow into the sewer when water levels were high. These early moisture protection systems improved the condition in the basement, in particular the issue of incoming water. The cold and moist environment of the basement, however, was not significantly improved. The visible moisture problems, in the form of peeling paint and crumbling plaster, largely remained.

In the 60's and 70's people started to insulate the inner walls of their basements in order to improve the cold indoor environment. Although this did lead to a warmer indoor climate, the basement wall outside the insulation became even more cold and damp and therefore nearly all of these constructions fell apart with rot and mould.

In the 1970's and 80's exterior insulation was progressively improved with different kinds of insulation boards. The outcome was better, but there were still considerable problems, because the insulation attracted moisture and the basement walls were ultimately dampened instead of dehydrated.

For the management of moisture safety and the environmental and energy requirements for living spaces, there was an obvious need for a better moisture protection system.



*Basement wall exterior*



*Basement wall interior*

*This is what many basement walls look like today. There's no effective thermal insulation on the exterior, which leads to moisture damage, onset of mould and an unsanitary smell on the interior*

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# The solution is the ISODRÄN®-board!

We at ISODRÄN AB quickly realised that earlier approaches were not safe and effective enough for a sound indoor basement environment.

In the 1980's we developed the ISODRÄN®-board, a multifunctional product which is especially well suited for the exterior of basement walls, because it contains several protective features in one single product.

## Drainage

Firstly, water seeping down through the ground after rainfall must be prevented from reaching the basement wall.

The superior draining capacity of the ISODRÄN®-board prevents water from reaching the basement wall. The ISODRÄN®-board consists of large glued EPS beads (expanded polystyrene beads). Because of this construction there are large cavities in the board, through which water is effectively carried down towards the drainage pipe with a minimal sideways spread to the basement wall. Therefore there is no need for a drainage layer of gravel or crushed stone outside the ISODRÄN®-board, which saves money and protects the environment.

## Capillary break

Secondly, the ISODRÄN®-board is a capillary break layer, which means that water will not be "sucked" from the ground through the board and into the wall.

## Thermal insulation and dehydration

And finally, the ISODRÄN®-board is a top grade thermal insulator! The thermal insulation is a very important part of any damp-proofing solution since insulation is what creates the very basis for a warm and dry basement wall.

When the ISODRÄN®-board is mounted on the basement wall the amount of heat that leaks out through the wall will be severely reduced. The basement wall and indoor climate will be warmer while damp proceeds to move outwards and into the ground through the porous ISODRÄN®-board.

The thicker the layer of ISODRÄN®-board is, the better the thermal insulation will be and the dehydration will be faster and more extensive.

All of this makes the ISODRÄN®-board the obvious choice for anyone who wants to replace their drainage system of damp-proof their walls!



## Economy and environment

There are several additional reasons for using the ISODRÄN®-board for your basement walls. For example, excavated material can be reused as backfill. This saves money and protects the environment, because there is no need to buy extra drainage materials like gravel or crushed stone, or spending money depositing left-over materials.

When you mount the ISODRÄN®-board on your basement wall, you will have a more efficient thermal insulation. This saves money due to reduced energy losses. How large the savings will be depends on how thick you choose to make your layer of ISODRÄN®-board and what extent of your wall you cover with insulation. When erecting new buildings or making additions to existing ones you have to comply with the rules set out by the Swedish National Board of Housing, Building and Planning. On our website, we have a comprehensive tool that can help you choose the right thickness of ISODRÄN®-board for your construction.

# The ISODRÄN®-board makes your basement wall moisture proof, economical and energy efficient

With the ISODRÄN®-board as your insulation and moisture protection system you will have a solution that is dry, fast and energy smart.

- **Safe drainage**

- *The ISODRÄN®-board means less digging, transport and depositing of filling materials and less money spent on purchase and transport of new materials.*

- **Effective capillary break**

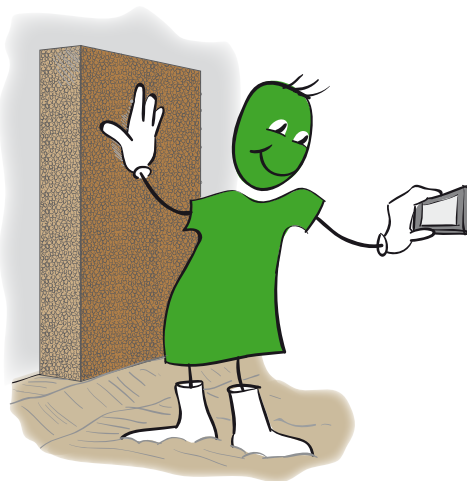
- *The glued EPS beads (expanded polystyrene beads) of the ISODRÄN®-board makes it porous, which prevents water from being sucked up through capillary action.*

- **Fast dehydration**

- *Your basement wall will always be able to dehydrate through the ISODRÄN®-board into the ground outside.*

- **Effective thermal insulation**

- *Whichever thickness of ISODRÄN®-board you choose, it will work as an thermal insulator as well as a drainage system.*



*Scan the code with your mobile – for quick support and straight answers!*

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**ISODRÄN®**