

**Cruysberghs**  
bvba  
Chemical

Producer of construction  
specialty chemicals **REAXYL**<sup>®</sup>

Approved BASF Construction  
Chemicals partner



Dealer of PCI tile adhesive systems and  
construction chemical additives



# Reaxyl<sup>®</sup> ventilations

Vapour pressure reducing  
Saves 30% energy loss  
Radon ventilating



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## Description

**Reaxyl® ventilations** are extremely suited to get rid of vapour pressure and Radon gas from an underground cellar, crawl space, rain well or bell-jar construction.

### Characteristics

**Reaxyl® ventilations** are designed to ventilate underground spaces. With this you can easily save 20 – 30% on your heating costs because of the complete prevention of migration of moisture from the floor layers to the higher-level spaces.

### The construction physics problem

On the big sectional drawing we see that the ground level zone is not waterproof. The rainwater runs through the saturated ground level zone into the cellar or cellar walls. Depending on the level difference between inside and outside, the water runs straight through into the floor of the ground floor.

Since everything wants to stay in balance according to construction physics, the high vapour pressure always goes to places with a lower vapour pressure. The high vapour pressure of the crawl space is absorbed by the warmer air of the ground floor where the vapour pressure is lower. This moisture transport continuously cools the floor of the ground floor and costs 20 – 30% of the heating costs. By absorbing all the moisture out of the underlying crawl space the relative humidity of the ground level rises.

At night it is outside usually colder than inside and there is, despite the high humidity, a much lower vapour pressure than inside. Since everything in construction physics wants to stay in balance, the high vapour pressure always goes to places with a lower vapour pressure. The higher vapour pressure inside the house wants to stay in balance with the lower vapour pressure outside and will find a way through the walls because of the limited vapour diffusion resistance. In itself you'd think this is not a problem, because you'll be rid of the moisture. You'd think so. The problem is that the moisture from inside at 21°C and 50% rH condensates when it is colder than 10,2°C. The moisture inside at 21°C and 65% rH condensates when it gets colder than 14,2°C. If it is inside 21°C and outside 7°C, then somewhere in the cavity wall it is between 10°C and 14°C where the moisture condensates on its way outside.

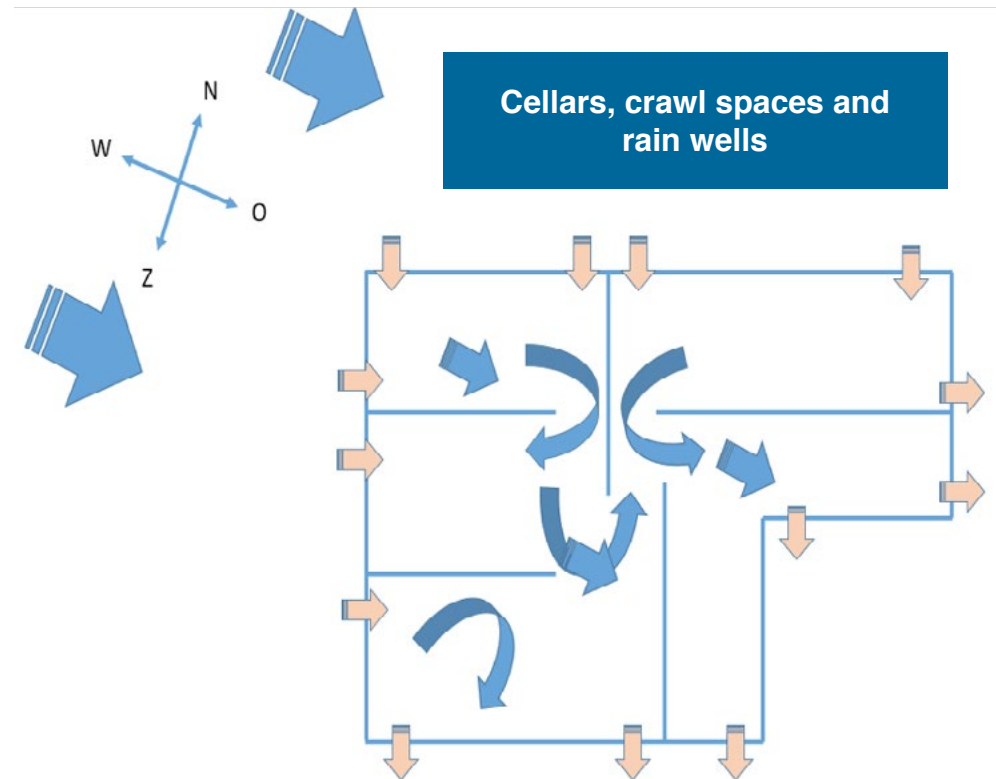
## Application

Take a plan of the house or building and mark all supporting walls: the cellar walls, crawl space or underlaying rain well.

Because every room works as a bell-jar construction you lock in all moisture, vapour pressure and Radon gas. Because the higher-level floor construction is not 100% vapour proof the rest of the house will absorb the underlying moisture.

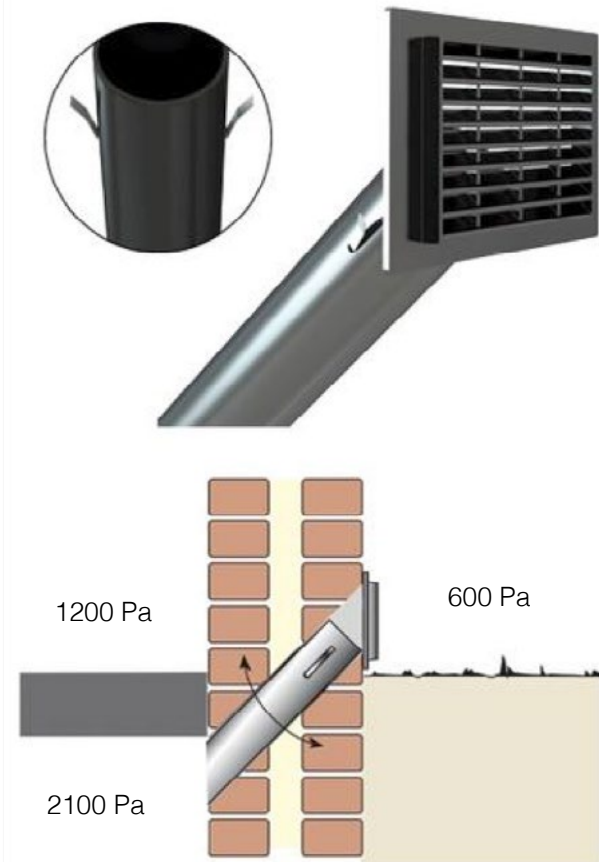
In every "room" you encounter there needs to be at least 1 input and 1 output for ventilation. Of both sides of a dividing wall there needs to be a ventilation present.

In total you'll need 1 ventilation every 2 à 3 meter in the complete outer perimeter.



## Choice 1 Reaxyl® ventilation tube

These ventilation tubes are easy to drill in the facade without digging. These tubes are non-reliant from the level of the floor/ground level placeable under every angle. The ventilation tube, material PP, can be placed at every angle by drilling a hole of minimal  $\varnothing$  52mm. The tube is provided with an RVS spring which keeps it in the desired position into the wall. For the placing of the new wall grid you have the choice between 2 or 4 holes in the mounting. The in the grid concealed holes can simply be pushed through. Because the grids are made out of ABS plastic they can also be easily glued, so there are no screws visible. the gluing can be done with our Reaxyl® Tubefix®.



## Choice 1 Reaxyl® ventilation tube

More flexibility also means a free grid choice, the components can be applied separately. because of the flexible placement of the wall grid the plugs can also be placed outside the joint in the stone.

Air flow: renovation tube complete = 17,5cm<sup>2</sup>. Air flow: separate grid = 29,5cm<sup>2</sup>. recommended amount: 1 ventilation tube per 2 m. ventilation tube  $\varnothing$  50mm, length 400mm. To drill hole min.  $\varnothing$  52mm.

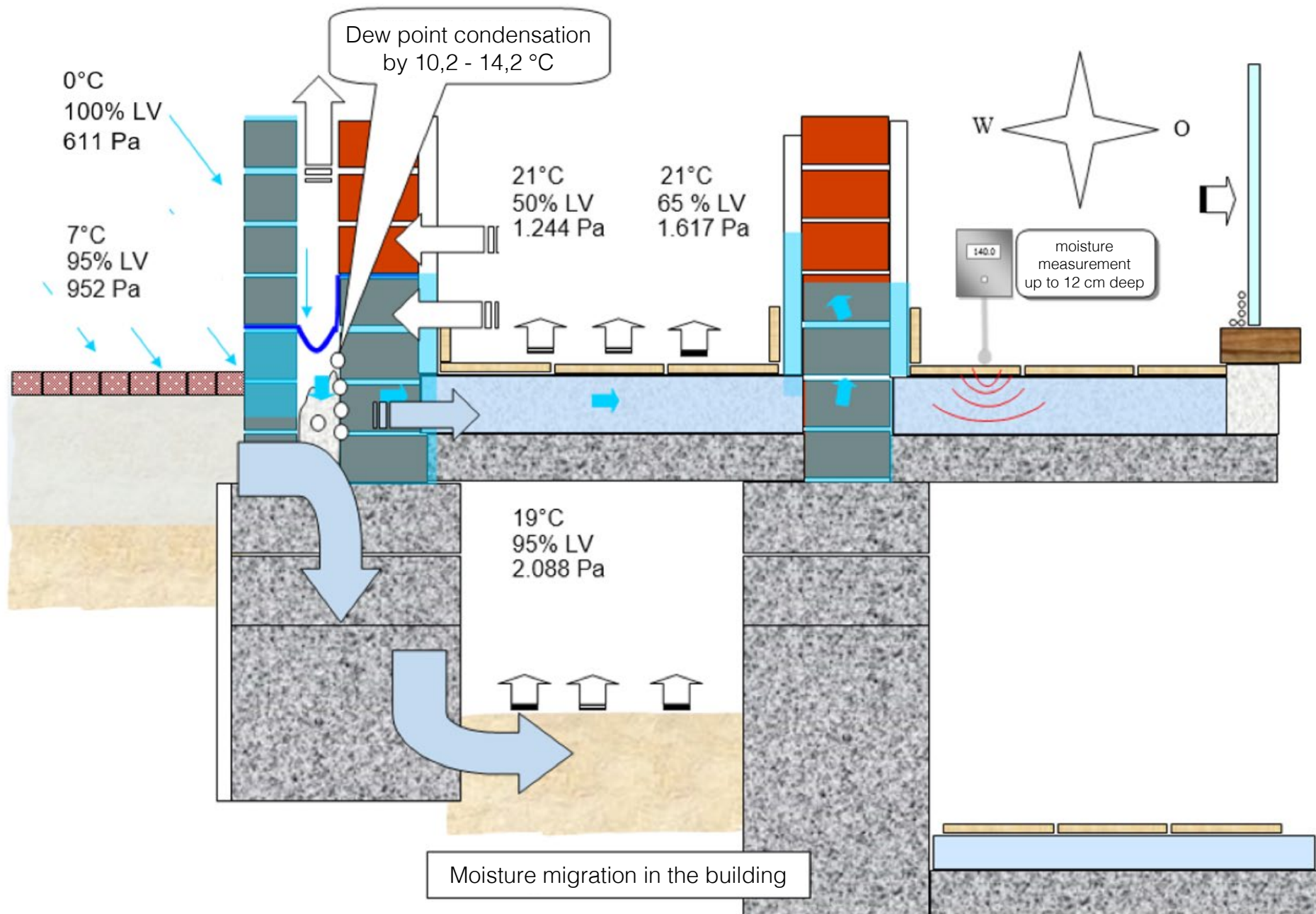
Wall grids are made out of shockproof ABS and easily to glue with Reaxyl® Tubefix®, so there are no screws visible. The tube is provided with a RVS spring which keeps it in the desired position into the wall.

These ventilation tubes can also be drilled for ventilating very shallow crawl spaces or bell-jar construction.

In new buildings these can easily be poured in concrete are bricked in.



Read why you have to build vapour proof in the manuals on [www.humida.be](http://www.humida.be)

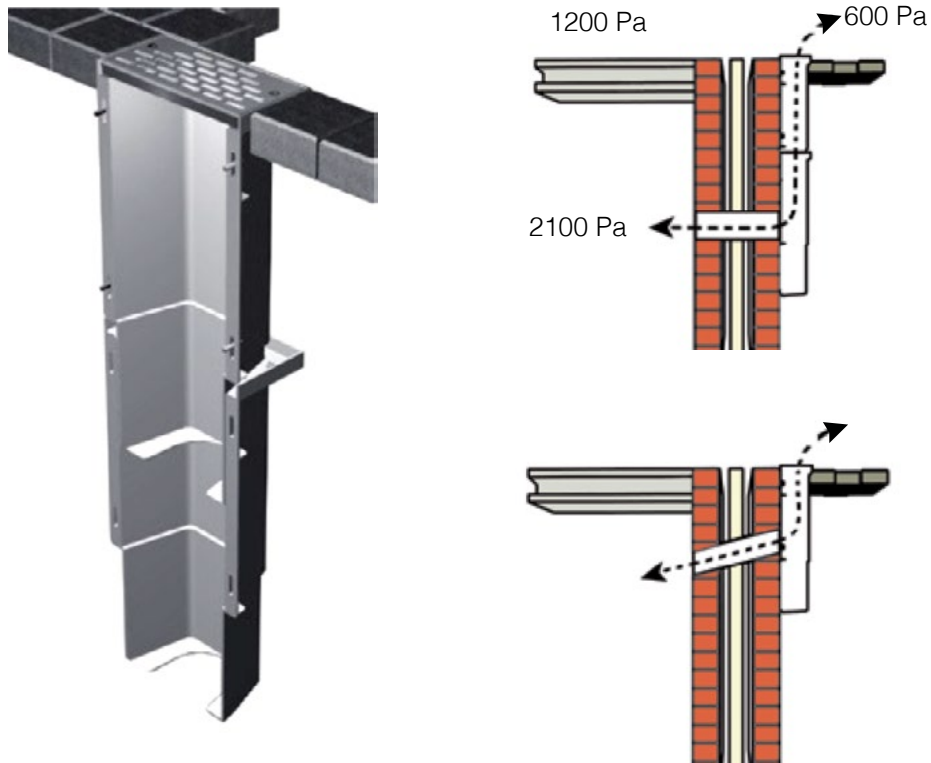




## Choice 2 Reaxyl® ventilation vent

The vent is a plastic covering vent with a completely open backside. The vent can be delivered with a plastic or a RVS grid. The underside of the vent is partially open so possible rain water stays on the front side of the wall. The grids are placed with 2 included RVS screws. The measurements of the possible tube and the hole through the wall can be determined yourself.

The Reaxyl® ventilation vent is suited to go deep into the ground, after sealing the ground level zone with Reaxyl Base-X 2K, and to easily and flexibly bring ventilation into the crawl space, e.g. under a sliding window. When placing the new wall grid you can choose to use 2 or 4 holes. The in the grid concealed holes can be simply pushed through. Because these grids are made out of ABS they can also be easily glued, so no screws are visible. The gluing can be done with Reaxyl® Tubefix®.



## Choice 2 Reaxyl® ventilation vent

With a big height difference it is possible to stack 2 or more Reaxyl ventilation vents with the use of 1 grid. Also shortening is possible. The vents are among each other adjustable in height, an extension of 280 – 410mm is possible. It is also possible to attach a drain pipe (max 80mm) on the underside of the vent. The Reaxyl vents are easily mounted by turned sides. A larger depth in the ground gives more flexibility with air flow.

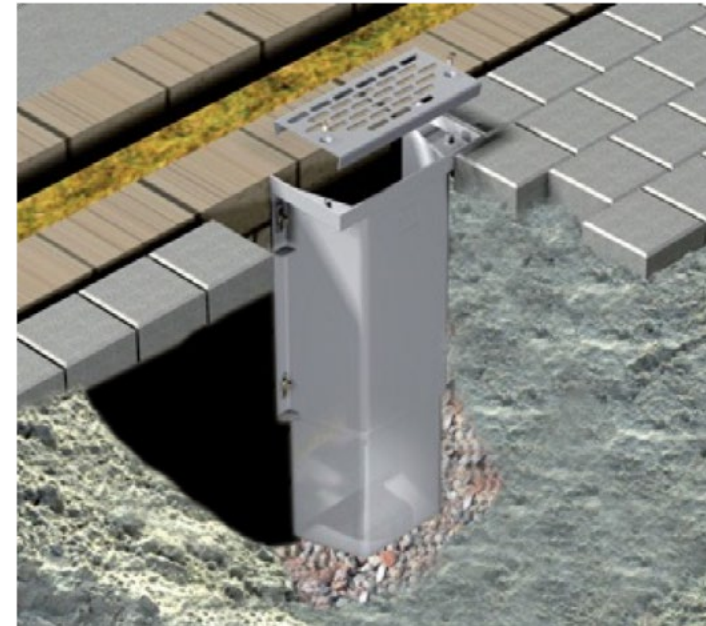
Measurement and air flow:

Measurement: height 43,5 cm x width 19 cm x depth 9,2 cm

Air flow plastic grid: 60 cm<sup>2</sup>

Air flow RVS grid: 48 cm<sup>2</sup>

Place a gravel bed or drain pipe on the underside of the grid to guide possible penetrating water into the ground. Also when placing the pavement, ensure that the pavement does not descend in the direction of the vent.



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## Choice 3 Reaxyl® ventilation shaft

These ventilation shafts are an alternative solution for ventilation in crawl spaces, cellars and other under the ground level laying rooms or bell-jars constructions and also for air flow for open fireplaces or low places machines or ventilation systems. The Reaxyl® ventilation shaft is suited for supply as well as drainage of air for a natural stone plinth without damaging. The half round design pleases architects as well as homeowners.



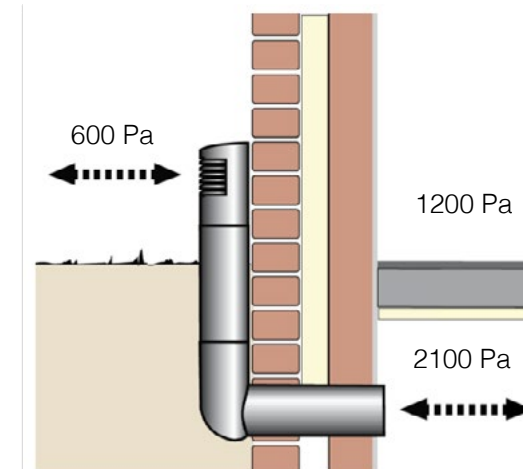
## Choice 3 Reaxyl® ventilation shaft

The plastic Reaxyl® ventilation shaft provides a very good protection against rain water because the outlet is high above the ground level. The shaft is not completely waterproof. By means of the opening on the underside the penetrating moisture and condensation can drain off. By ducts under the ground level a good drainage under and around the shaft is very important for draining moisture. The risk of penetration moisture is not 100% excludable with this system. The system is not ground waterproof. If required the joints and ducts can be waterproofed with Reaxyl® Tubefix®, possibly in combination with Reaxyl® Base-X 2K. Ask for advice.

The length of the system is flexible because of loose vertical extensions of 450mm length, these can also be shortened to size. Standard 1 extension is included, extra extensions are separately available.

The Reaxyl® ventilation shaft is designed for application in new buildings as well as in renovations. In old buildings these ventilations can be connected to existing channels or grids. The ventilation shaft makes a better ventilation possible because of the opening which is situated high above the ground level without damaging existing plinths.

The in the packet included mounting material is suited for wood, concrete and brick or stone constructions. The whole ventilation shaft exists out of a PP material.



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