



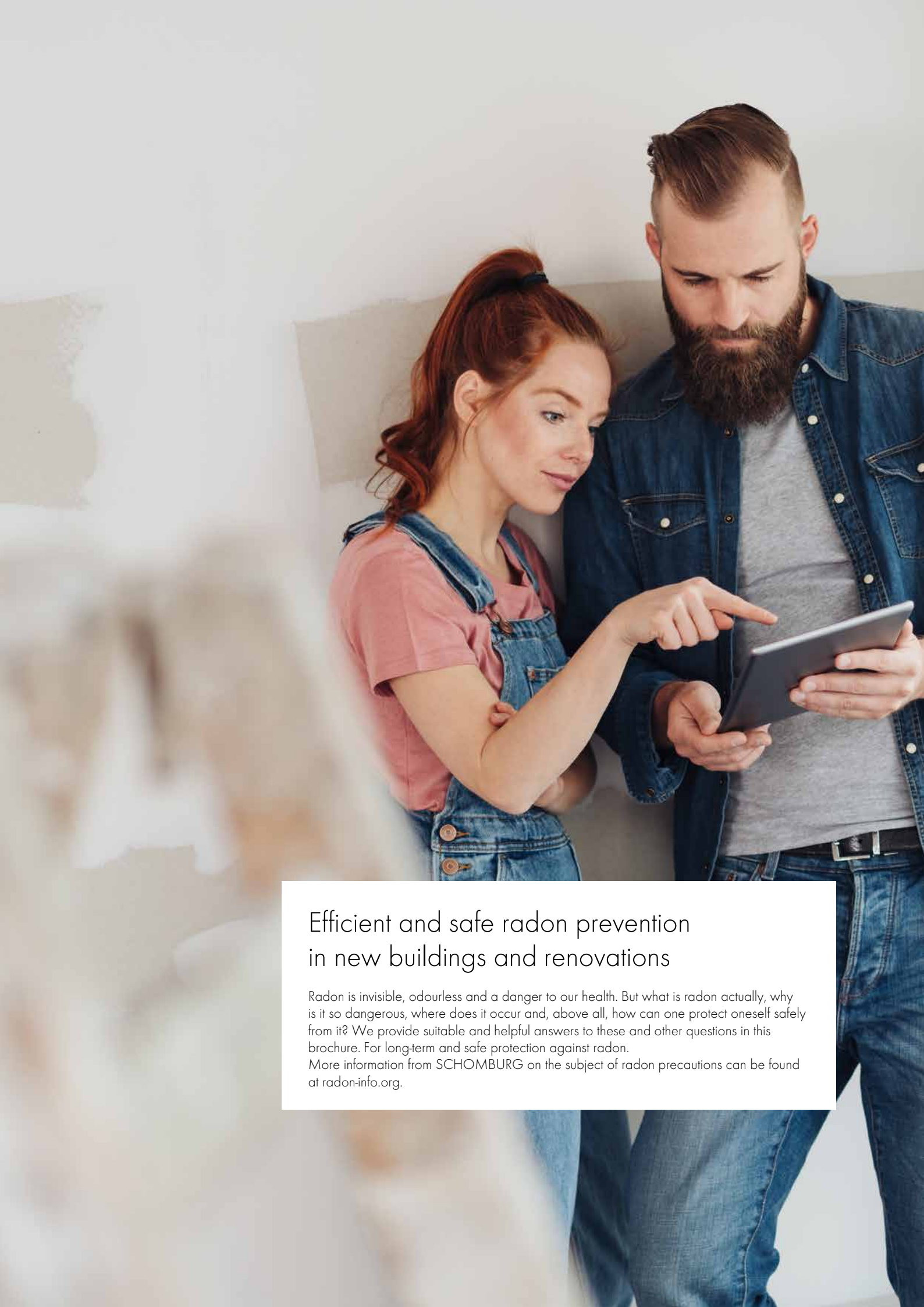
Effective radon protection

Precaution in the system

Whether it's for a new building or a renovation, the right radon protection demands safe and proven products and system solutions. We'll show you ours.

Problems solved.





Efficient and safe radon prevention in new buildings and renovations

Radon is invisible, odourless and a danger to our health. But what is radon actually, why is it so dangerous, where does it occur and, above all, how can one protect oneself safely from it? We provide suitable and helpful answers to these and other questions in this brochure. For long-term and safe protection against radon.

More information from SCHOMBURG on the subject of radon precautions can be found at radon-info.org.

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What is radon?

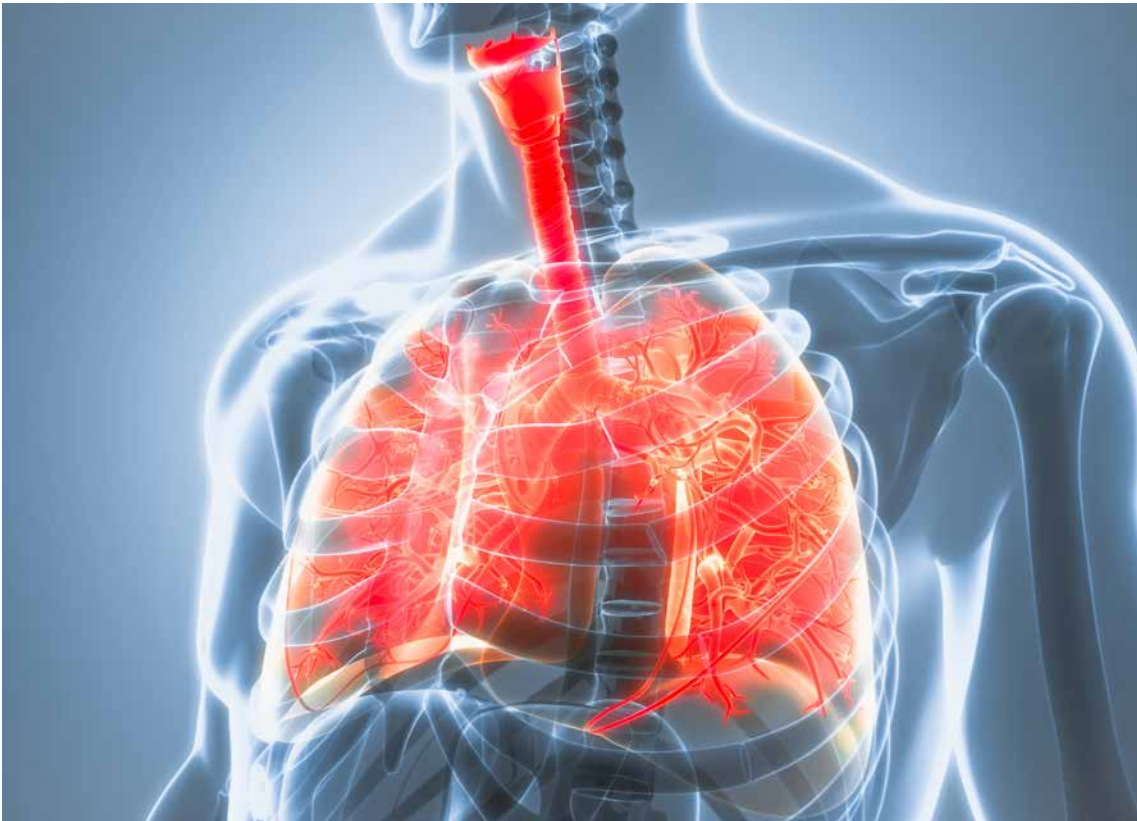
The invisible danger

Radon is a dangerous radioactive gas - in Germany it is one of the main causes of lung cancer. The natural noble gas occurs in the earth's soil and penetrates to the surface through cracks and crevices. It is formed when uranium and thorium decay into polonium, bismuth and lead in the soil. In the lungs, these by-products cause pathological changes: Cancer.

Radon is hardly a problem in the fresh air. It becomes dangerous in enclosed spaces such as cellars or basement flats. There, the load increases rapidly and becomes a potential danger. Radon occurs throughout Germany, but there are particularly contaminated areas. There, builders and employers must take special measures. But it is also imperative to make provisions for yourself and your family in your own home.

Effects of radon on health

Risks and statistics



Why is radon so dangerous? Exposure often goes unnoticed - the noble gas is absolutely odourless and tasteless. Radon is inhaled with the indoor air and decays in the lungs. There, the decay products "irradiate" the lung cells with dangerous radioactive radiation and, in the worst case, cause lung cancer.

Official statistics assume about 1,900 radon deaths per year in Germany. Greater, of course, is the number of those who struggle with persistent severe health problems. In fact, radon in homes is the most common cause of lung cancer after smoking; across Europe, one in 50 people is diagnosed with lung cancer. Cancer deaths caused by the noble gas.



For more information on health risks, the current state of radon research and possible radon cures, please visit the website of the BfS - Federal Office for Radiation Protection.

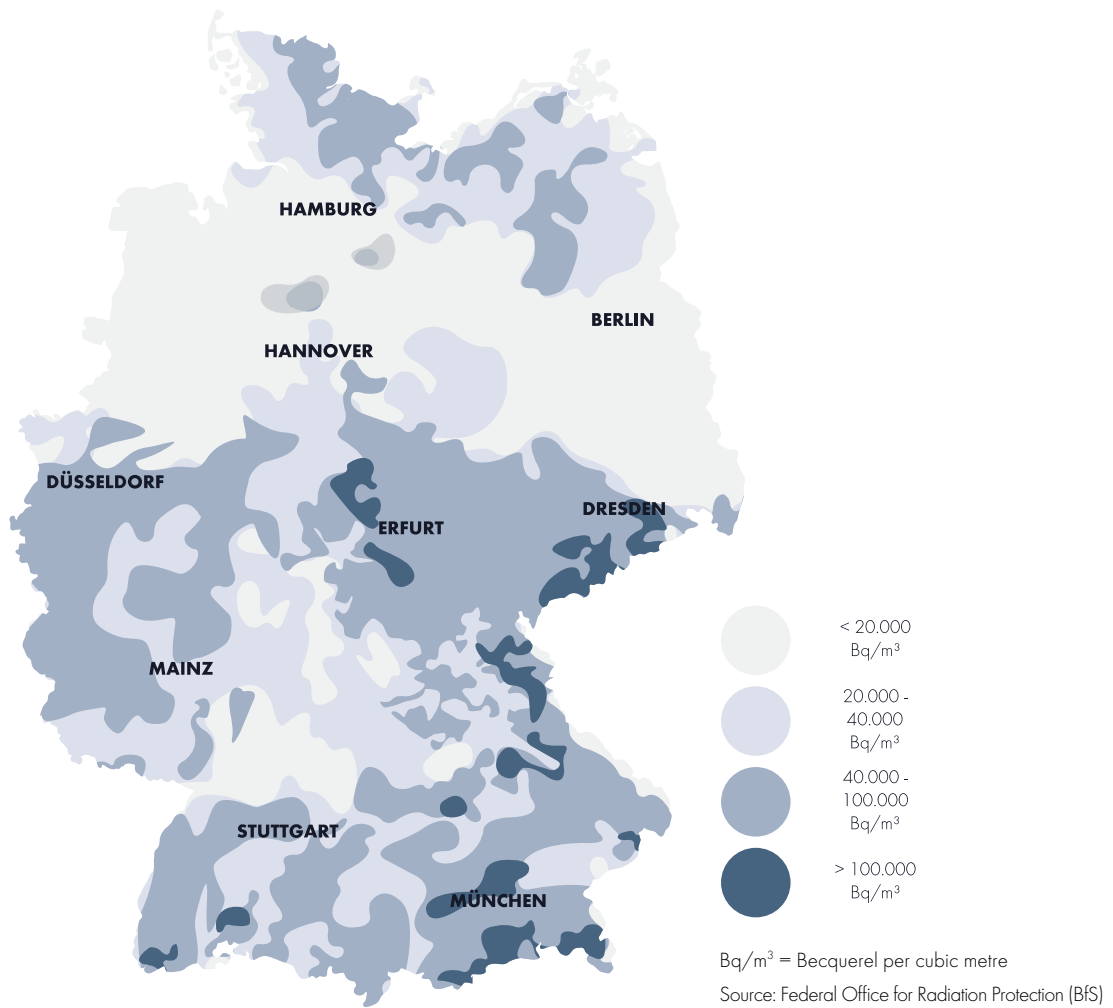


Radon distribution in Germany

Precautionary zones and exposure levels

Radon occurs throughout Germany, but there are particularly affected areas. Since the beginning of 2021, these regions have been designated as so-called "precautionary areas" by the Federal Office for Radiation Protection. Parts of Bavaria, Baden-Württemberg, Thuringia and Saxony are particularly affected. Taking precautionary measures in the remaining provinces increases protection and improves safety.

This map roughly shows the "underground radon concentration" at a depth of one metre in Germany. A concrete radon occurrence can only be determined by explicit measurement.



Do you live in a risk area?
Here you can find the radon
precautionary areas in Germany.



Radon in indoor spaces

Legal basis

Why is radon so dangerous, especially indoors? The light noble gas rises continuously.

It penetrates through the smallest cracks in the masonry, inadequately sealed joints or pipe passages, especially into basement rooms, basement flats or buildings built on slopes. Of course, clay or natural stone floors offer little resistance. But even fundamentally watertight floor slabs can develop cracks over time and then become a risk. Over time, the gas concentration increases, especially if the room is not ventilated. Since the dose makes the poison, the legislator has prescribed the limit of 300 Becquerel as an annual average. But this is not advisable. The World Health Organisation WHO considers a maximum exposure of 100 becquerels to be acceptable.

Dosimeters can be used to measure radon exposure. These devices are already available in a "passive" version from about 30 to 50 euros. Somewhat more accurate are active measuring devices that store the data digitally and can be analysed with a computer. However, these dosimeters are also more expensive to purchase. Since the annual mean value is always of decisive importance, the more accurate and less error-prone active dosimeters are highly recommended.

In principle, the German Radiation Protection Ordinance, which goes back to an EU directive, regulates the handling of radon. The Radiation Protection Ordinance contains specific information on what must be observed.



Private buildings

For new buildings in precautionary areas, building owners must ensure that no radon can penetrate. Architects and planners have a duty to support them in this and to provide the appropriate solutions. If it is a renovation of an old building, there are no legal requirements. Indeed: No one wants to risk their own health and that of their fellow residents lightly.



Commercially used buildings

In the precautionary areas, employers must regularly monitor radon concentrations - whether in old or new buildings. The annual average exposure must not exceed 300 Becquerel. In any case, it makes sense to protect the health of its workers as much as possible with constructional measures.



Further information on the Radiation Protection Act and the Radiation Protection Ordinance can be found on the website of the BFS - Federal Office for Radiation Protection.



Radon prevention systems

For new builds and renovations

Radon can be reliably and continuously excluded from buildings. The simplest option: regular airing. But that also has its pitfalls. For the sake of one's health, one has to be very disciplined about airing again and again - and at the same time ruins the energy balance of one's house. There are also elaborate technical solutions such as active extraction systems or "radon wells" that can reduce concentrations as well. The easiest way is still to take suitable precautionary measures to ensure that radon does not enter a building in the first place. Efficient system solutions such as those from SCHOMBURG offer safety in both new buildings and renovations. And over the long term at that.

On the following pages, we present our radon-proof products as well as safe system solutions for new construction and renovation. Further detailed drawings are available in the solutions section of our website radon-info.org.



The Heinze download manager also provides you with an extensive selection of suitable tender texts.





Tested radon-proof products from SCHOMBURG



AQUAFIN-RB400

Rapid cementitious waterproofing

- Below-ground waterproofing, plinth waterproofing and transverse waterproofing in and under walls in accordance with DIN 18533
- For water exposure classes DIN 18533 W1-E, W1.2-E and W4-E
- Subsequent waterproofing in accordance with WTA Leaflet 4-6 against soil moisture, non pressure water and pressure water



COMBIDIC-2K-PREMIUM

Reactive 2-K bituminous thick layer coating (PMBC)

- Waterproofing building components in direct ground, e.g. basement walls and floor slabs
- For water exposure classes DIN 18533 W1.1-E, W1.2-E, W2.1-E, W3-E, W4-E
- Seam-free and jointless, crack-bridging building waterproofing



AQUAFIN-WM12

Fresh concrete composite waterproofing sheet, PVC

- Waterproofing of horizontal and/or vertical building components in direct ground, in above-ground and below-ground construction and in civil engineering
- Waterproofing sheet in accordance with DIN SPEC 20000-202, waterproofing of buildings per DIN 18533, CE-certified in accordance with DIN EN 13967
- High adhesion, safe from water running behind, can be sealed and bonded



KSK sealing sheet

Cold self-adhesive bitumen sheet

- Waterproofing of wall surfaces in direct ground and floor slabs in accordance with DIN 18533-2
- For water exposure classes DIN 18533 W1.1-E, W1.2-E and W4-E
- As waterproofing under screeds in accordance with DIN 18534-2, water action classes W0I to W2-I



ASODUR-SG2

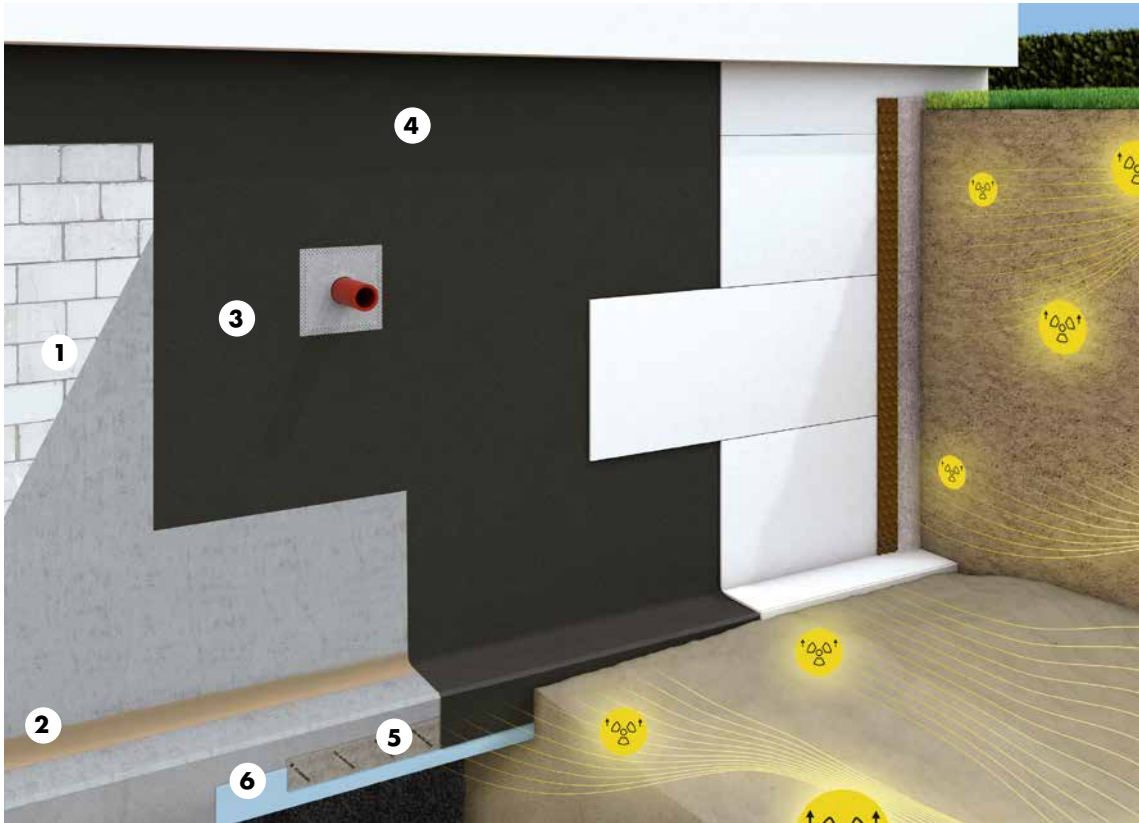
Epoxy resin special primer/oil and vapour barrier

- Special pre-primer for oiled and other contaminated but previously cleaned concrete substrates
- Low-solvent, moisture-compatible, two component epoxy resin
- Very good adhesion on damp concrete substrates



Radon prevention system

New builds



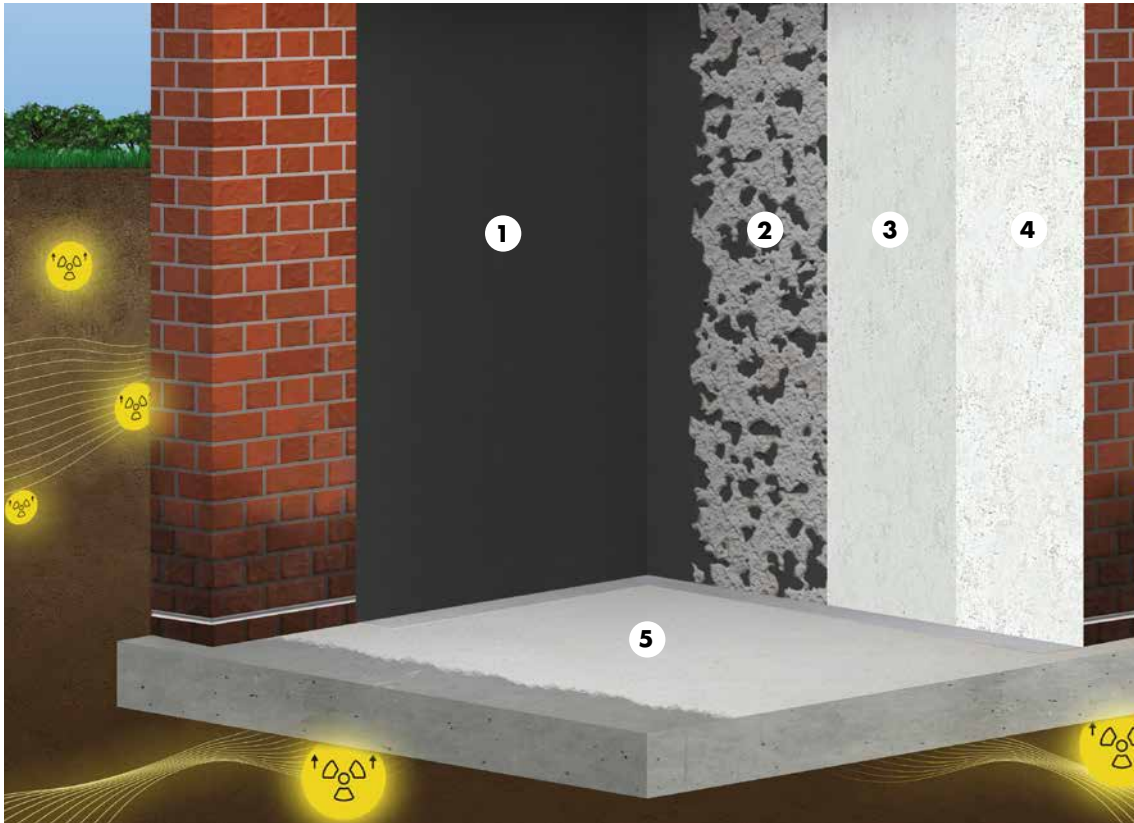
- 1 Substrate (concrete / masonry)
- 2 Cementitious fillet e.g. **ASOCRET**-M30
- 3 Pipe penetration - **AQUAFIN**-PP (white tub)
- 4 Surface sealing - **AQUAFIN**-RB400 / **COMBIDIC**-2K-Premium
- 5 Floor slabs - **KSK**-sealing tape transition
- 6 Sealing under the floor slab - **AQUAFIN**-WM12





Radon prevention system

Refurbishment



- 1 Sealing of the wall surfaces - **AQUAFIN**-RB400
- 2 Splatterdash coat - **THERMOPAL**-SP
- 3 Restoration plaster - **THERMOPAL**-ULTRA
- 4 Fine plaster - **THERMOPAL**-FS33
- 5 Coating of the floor slab - **ASODUR**-SG2



Further radon precaution systems and detailed drawings can be found at radon-info.org.

The SCHOMBURG group of companies develops, produces and distributes building product system-building products for the areas of:

- Waterproofing and repair of buildings
- Tiles/natural stone/screed application
- Ground protection/floor coating systems
- Concrete technology

For over 80 years SCHOMBURG's development competence has been a recognised feature in both the domestic and the worldwide marketplace. Building product systems that are produced in-house are highly prized around the world.

Experts value the quality and the efficiency of the building product systems, the services and therefore the core competence of the group of companies.

To meet the demanding requirements of an ever-changing market, we continuously invest in the research and development of new and already existing products. This guarantees an ever increasing product quality to the satisfaction of our customers.

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