



Tiling | Flooring | Gardening



Solidity *For safety and comfort* **counts**



"We want people to live in healthy, energy-efficient and beautiful homes."

Explore the world of Healthy Living

Our health is founded on 3 key factors: nutrition, exercise and lifestyle. Each of these improve our general well-being. Lifestyle is directly linked to living spaces therefore our spaces should be optimally designed with the right vision and building materials.

Factors that contribute towards physical well-being include a comfortable room temperature, indoor air humidity, air quality, etc. We spend most of our lives indoors that is why our "living spaces" are so important for our health.

Healthy building

The true quality of building materials becomes clear when they are used. Only if properties are built with health in mind, can we live in a healthy environment and live a healthy life.

Healthy living = a healthy life

An insulated property provides a beautiful, clean environment that enhances the occupant's general comfort and health.

After years of intensive research, it's clear to us that construction methods and materials have a significant impact on occupier health. Regardless of style, all properties have one common goal to create a healthy building.



7 factors for a healthy building

The term "indoor climate" describes the interaction of various influencing factors, which affect the quality of life, comfort and - consequently - the health of people living in these rooms. Not only well known factors like air temperature and air humidity, but also other less known factors affect your indoor climate.

1. Temperature

How warm or cold we find a room depends on the perceived temperature, which is determined by two factors: the air temperature and the surface temperature

(thermal radiation).

2. Air humidity

In order to feel comfortable indoors, in addition to a pleasant room temperature, you also need the right amount of air humidity. We believe a humidity of between 40-60% as optimal.

3. Mould

Mould is one of the most dangerous factors affecting healthy living. If air humidity is too high, it can lead to the formation of mould. This increases the risk of respiratory diseases, infections and allergies.

4. Noise

Noise is considered to be one of the greatest environmental stress factors that can have a negative impact on well-being.

5. Emissions

A variety of polluting emissions can adversely affect the quality of indoor air including construction products, furniture and other furnishings, which often release chemical substances (VOCs).

6. Odour

Unwanted odours caused by building materials are not only unpleasant but in the worst case, can also lead to health conditions such as headaches and tiredness.

7. Light

Bright, light-filled living spaces are vitally important for health and a positive mood.



If walls could talk...

...what would they tell us? The largest research project in Europe, the Baunit Viva Research Park gives them a voice, by collecting more than 1.5 million sets of data per year.



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- Europe's largest comparative research project of building materials
 - 1.5 million measurement points per year
 - External analysis by research partners
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VIVA Research Park.

Baunit has been working on the subject of "healthy living" for more than 25 years and has launched numerous innovative products in the market in this field.

However, in the course of this intensive study, it turned out that there are currently few scientifically substantiated conclusions about the effects of building materials on health and well-being. Therefore, in 2015 a unique research project was launched.



Research and discovery

On a site next to the Friedrich Schmid Innovation Centre in Austria, there are now 13 research houses built using different construction methods – ranging from solid construction such as concrete and solid brick to aerated concrete and timber frame constructions. These have been covered with various interior and exterior materials.

The houses have internal dimensions of three by four metres. They each have one window and a door of the same dimensions. All the houses have the same external climatic conditions. For the building materials, contemporary products that are available on the market

were deliberately chosen.

This provides a real-life illustration of the range of possible construction methods that house builders may encounter.

User behaviour and habits

In these houses, user behaviour is simulated: for example, the ventilation habits and the occurrence of moisture due to showering, cooking or sweating are replicated. There are over 30 measuring sensors in each house, which record a wide range of physical parameters around the clock.

The different building materials are examined for effects on our well-being, comfort and

health. The measured data are recorded and saved via computer control at an in-house measuring station.

Scientifically proven

Of course, Baumit wants to be absolutely sure about the measured data, so the results are subject to external analysis, by our research partners, such as the Austrian Institute for Building Biology and Ecology (IBO), the University of Applied Sciences Burgenland and medical university Vienna.

In order to develop our products with healthier and safer properties, we need to know exactly the impact of building materials on indoor climate.





3 Elements of Healthy Living



After many years of intensive research, analysing and evaluating millions of data, it clearly turned out that construction methods and building materials have a significant impact on health and quality of life. Regardless of which design you choose when building a house, at all houses 3 criterias have to be taken into account to create a healthy living environment:

INSULATION FIRST – Protection and cosiness

INTERIOR VALUES – Natural and healthy living

SOLIDITY COUNTS – Safety and comfort

INSULATION FIRST



INTERIOR VALUES



SOLIDITY COUNTS

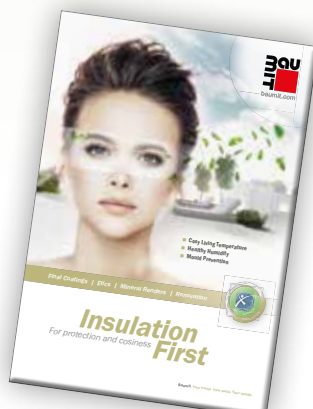


INSULATION FIRST



Protection and cosiness

Good thermal insulation not only makes a significant contribution to the energy efficiency of your building, but also ensures pleasantly warm walls in winter and pleasantly cool walls in summer. The living space thus becomes a comfortable space with no draughts. Living becomes more comfortable and healthy.



INTERIOR VALUES



Natural and healthy living

A good interior mineral plaster system can act as a buffer for any peaks in humidity by absorbing excessive air humidity into the first few centimetres and releasing it again later. This guarantees a constant level of air-humidity, ensuring a healthy indoor climate.



SOLIDITY COUNTS



Safety and comfort

Solid walls, as well as solid ceilings and floors, can be externally protected with good thermal insulation so they store heat in the winter and keep the coolness in the house in summer. The more mass, the more effective the thermal storage and the more stable, pleasant and healthy the indoor climate.





Insulate and save

Solidity Counts

Houses with good external insulation using components with a high mass are best at storing energy and optimally balancing out temperature fluctuations.



The right building materials

For many years, Baumit has been creating healthy living and environmentally-friendly system solutions with its products for healthy indoor air, comfortable living and better relaxation. Our home should, on one hand, provide protection and, on the other, enable us to recharge our batteries, enjoy some rest and devote ourselves to the nice things in life without stress.

VIVA Research Park

A wide range of environmental influences affect us every day. Many of these are rated as detrimental, and can therefore have a negative effect on our well-being and our indoor comfort.

At Baumit's VIVA Research Park, intensive research is being carried out to establish how different building materials and construction methods interact with many of these influences. A vast amount of data is collected, measured and subsequently evaluated. The results ultimately prove the effect or influence of different building materials on the environmental factors mentioned.



TEMPERATURE FLUCTUATIONS

Solid, mineral building materials

It is in the nature of things that different materials and substances have different physical and chemical properties. Which substances and building materials ultimately have a positive, reducing effect on certain negative environmental influences?

“There is no substitute for mass.”

Solid building materials act on one hand like a battery, absorbing, storing and releasing energy. Rooms with a high thermal storage mass therefore overheat much more slowly and also cool down much more slowly. Solid building materials thus have a direct effect on the well-being factor of rooms and buildings.

A solid construction also has a positive effect on sound insulation, as any noise is more dampened and better shielded. In addition, these building materials mainly consist of natural mineral substances, so they also help to promote pollutant-free indoor air.



POSITIVE EFFECTS

SOUND

Buildings are affected by a variety of sounds: from outside, for example, street noise, passers-by, as well as the environment. Inside, the well-being environment is influenced on the one hand by the neighbours, e.g. footsteps, but the internal walls and furnishings also play an important role. In general, external noise is only perceived as half as loud in houses made of concrete as in houses with a timber frame construction and plasterboard panels. External thermal insulation composite systems can help to increase the sound insulation.

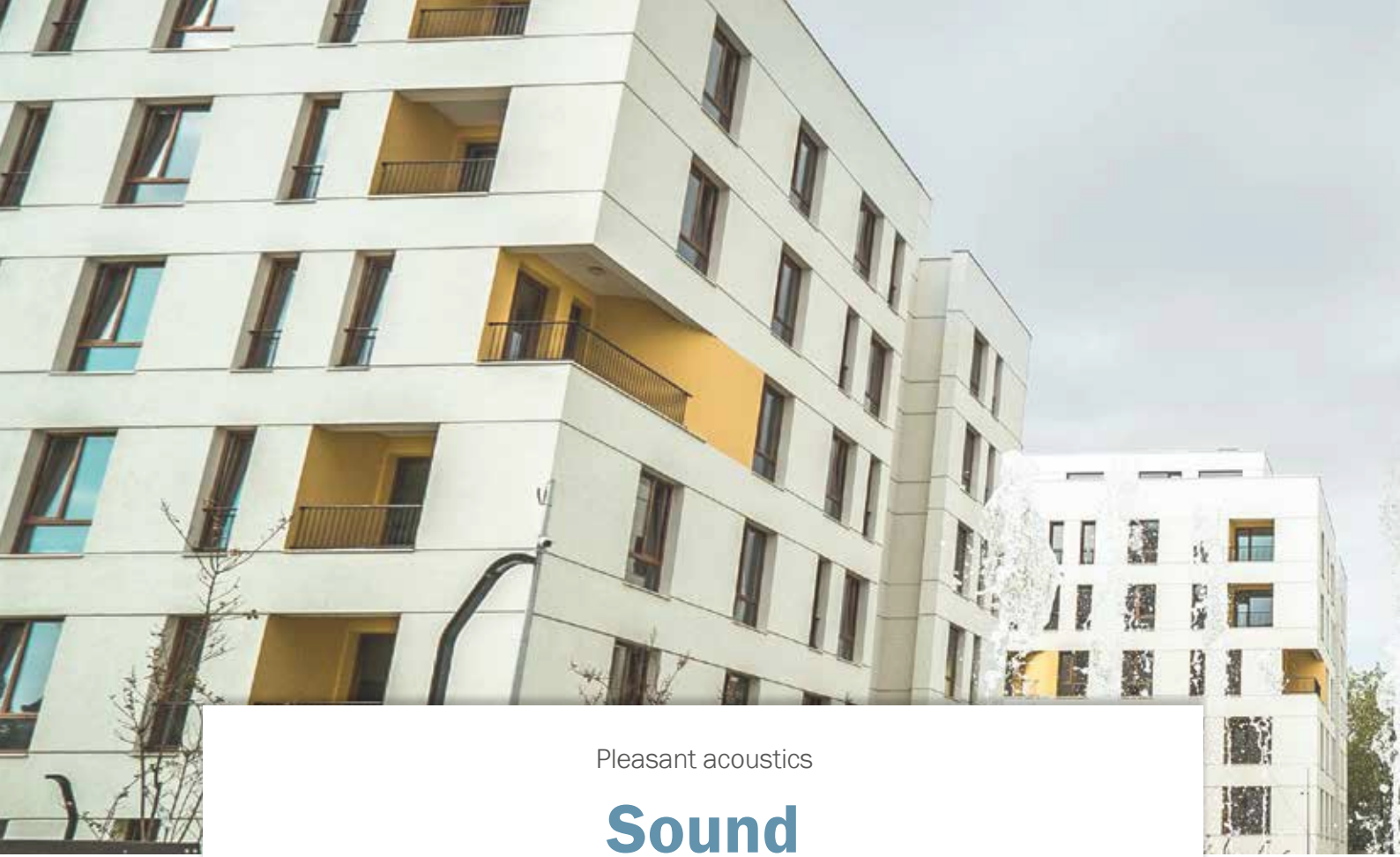
TEMPERATURE FLUCTUATIONS

Hot summer temperatures or rapidly cooling rooms in the winter create a host of different feelings in our bodies and can

have a negative effect on sleeping comfort and recuperation. Thermal storage capacity plays an important role because the right building materials can help to buffer or balance these effects due to their mass by storing heat.

EMISSIONS

Energy-efficient construction also often means airtight building designs. As a result, any pollutants remain in the room for longer. The replacement of internal air with external air is now much lower than in old buildings. Modern buildings therefore place much higher demands on building materials than before. This makes it all the more important to choose the right building materials, which should be free of pollutants, mineral-based and breathable.

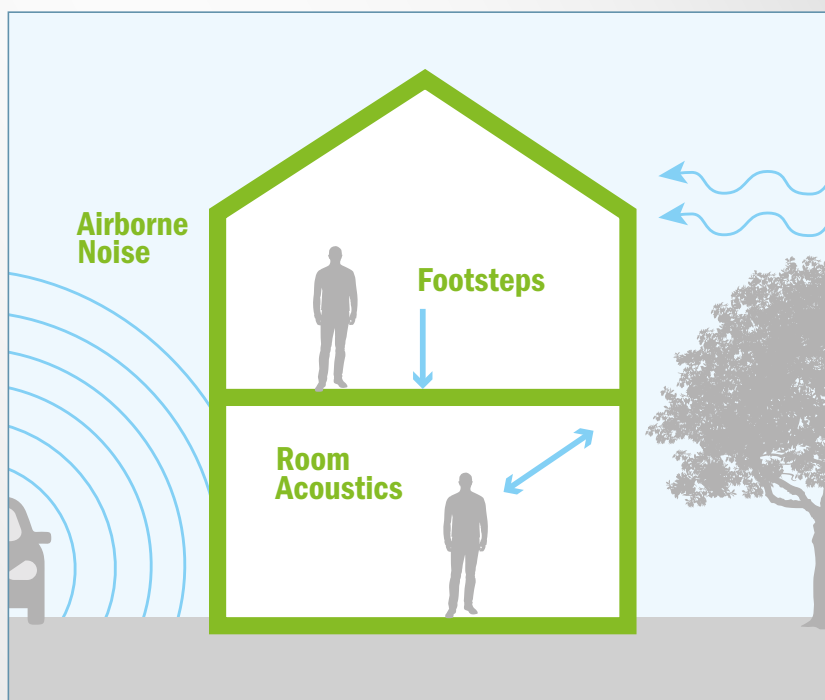


Pleasant acoustics

Sound

Sound has a variety of sources and can be transmitted in different ways, on one hand, through the air – for example traffic noise – and on the other hand, via building components, for example. This sound or noise is known as structure-borne sound or impact sound.

NOISE IMPACTION INSIDE & OUTSIDE



These can include, from the outside, for example, street noise, wind and the external climate, and from the inside, people, furnishings, walls and the indoor climate.

Noise causes illness

Noise is understood to be disturbing, disruptive and annoying or damaging sounds. Noise is not a physical, but a subjective term, i.e. whether sound is perceived as noise depends on the feelings of those affected. Noise can only be quantified with measurements to a certain extent (e.g. loudness, signal waveform, pitch). The disruptive effects of noise range from mild irritation to actual adverse health effects. Noise is one of the most unpleasant environmental influences and one of the greatest environmental stress factors.

Sound insulation

Soundproofing, impact sound insulation and room acoustics are relevant quality features for buildings and are very important when it comes to the well-being and health of users. The task of sound insulation is to buffer sounds from outside or from adjoining rooms.





Noise barriers for outside noise

Soundproofing measures, such as noise barriers or noise protection walls along roads and railway tracks are everywhere and are a controversial, ubiquitous and above all ever-present topic. Here, we can make a significant contribution to our well-being by using solid building materials in our buildings. The sound measurements carried out at the Baumit Research Park show that solid building components reduce exterior noise by up to 50%.

Impact sound

As well as thermal insulation, good sound insulation is now a key criterion for high-quality buildings. Noise pollution resulting from

transmitted impact sound can have a negative impact on health. The more effectively individual components are decoupled from each other, the more effectively the impact sound can be dampened. The more solid the walls, ceilings and floors, the better the soundproofing.

Room acoustics

When building and furnishing a building, the emphasis is usually on the visual impression or the functionality of office space. Often, no consideration is given to the acoustics. Yet we prefer to be in rooms with good room acoustics, we work better and recuperate more quickly. Bad acoustics are detrimental and cause stress.





Balanced indoor climate

Temperature fluctuations

Building components with a high storage mass, e.g. solid walls, screeds and also plasters can absorb, store and release heat energy well when it gets cooler.

Warm in winter, cool in summer

If, in winter, the interior is heated to a comfortable temperature, the temperature does not decrease as quickly, so that, after ventilation, for example, the living room heats up to a comfortable temperature again more quickly.

The walls and the floor act like a tiled stove. Conversely, in summer, the rooms stay pleasantly cool. The better the thermal insulation, the better the building components can make use of their storage mass, as the walls are protected from the outside, preventing energy from being lost. Two essential factors for a healthy, comfortable living environment are therefore good insulation and the greatest possible storage mass.

Cooling and heating effects of walls, ceilings and floors

Studies prove the influence of different building materials, as well as the layer thickness of walls, ceilings and floors. The more storage mass that is present, the longer and better these surfaces are able to help to cool down the room temperatures in summer and to



heat them up in winter. While solid ceilings and floors, for example, can buffer cold and heat for more than 12 hours, in lightweight constructions, this potential is exhausted after only a short time. Also, the surface temperature of the interior walls varies depending on the materials used. Measurements

carried out at the VIVA Research Park showed a variation in the wall surface temperature inside solid houses of up to 4 °C. By contrast, in lightweight constructions, differences of up to 8 °C were detected on the interior wall surfaces.



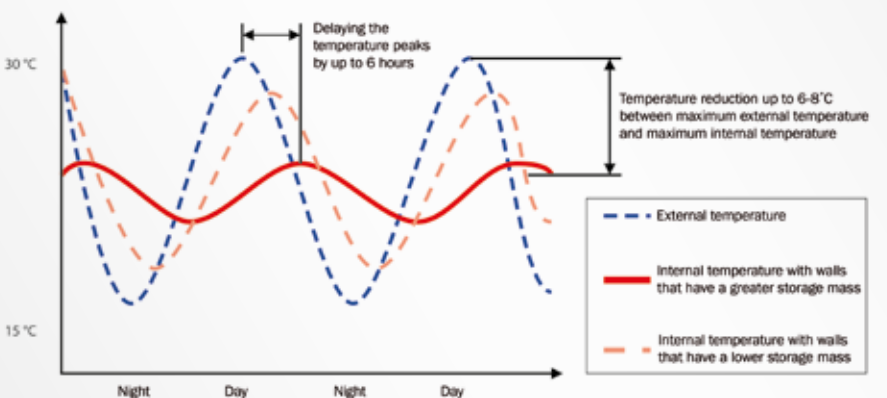
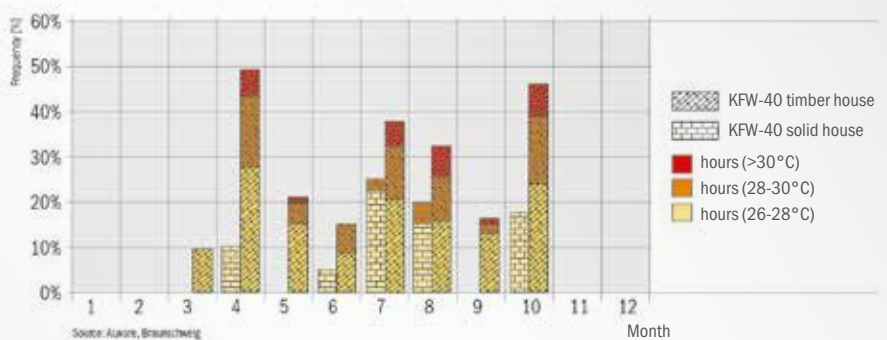
Overheating in summer:

Studies have shown that rooms in buildings with a low storage mass can overheat much more easily and frequently. Comparison of a timber frame construction with a solid house.

Delaying and damping effect of wall systems

The graph shows that solid walls result in a longer delay, as well as a significant reduction, in the effects of outside temperature spikes. This means that the interior temperature can be kept more stable.

NOT TOO COLD, NOT TOO HOT





Free of pollutants

Emissions

Healthy living is in the spotlight more than ever before, so the issue of indoor air quality and indoor pollution levels is becoming increasingly important.

Science now has increasingly detailed toxicological findings on the influence of pollutants on the human organism. Particularly in new buildings or after renovations, increased indoor pollution levels can occur, which can cause unpleasant odours or health problems for the residents.



VOC

VOC (volatile organic compounds) are irritants and odorous substances that are contained in many products – including building materials. Pregnant women, infants and children in particular are affected by these pollutants caused by VOCs. They can cause, among other things, irritation of the respiratory tract and eyes, or result in fatigue, lethargy and headaches, and even allergic symptoms.



Viva approved

Which pollutants are released into the indoor air by the different building materials and in what quantities? The researchers at the Viva Research Park investigated these topics and carried out VOC and formaldehyde pollutant measurements. Essentially, it was found that buildings made of concrete and bricks with a mineral interior coating are largely free of

volatile organic compounds (VOCs) immediately after completion.

Guaranteed pollutant-free

However, the Viva Research Park is not the only research centre where Baumit building materials are tested. Baumit works closely with recognised testing institutes to test their function and safety for humans and

the environment: NaturePlus for natural and healthy interior plaster systems, the Eco Institute for pollutant-free building materials and with Emicode for low-emission building products. Baumit products are reliable and safe for people and the environment.

What is Emicode?

Emicode is a trademarked eco-label for the product classification of low-emission construction products.

EMICODE provides guidance on consumer health and environmental protection for the assessment and selection of chemical building products. Emicode is divided into three categories which indicate the emission behaviour of the labelled product.

- EMICODE EC 1 plus, the premium category ("very low emission")
- EMICODE EC 1 corresponds to "very low emission"
- EMICODE EC 2 corresponds to "low emission"





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Baumit. Your home. Your walls. Your health.