Get it done the right way:

Reliable solutions for timber frame construction with MB 2K product systems

Focus solutions

remmers

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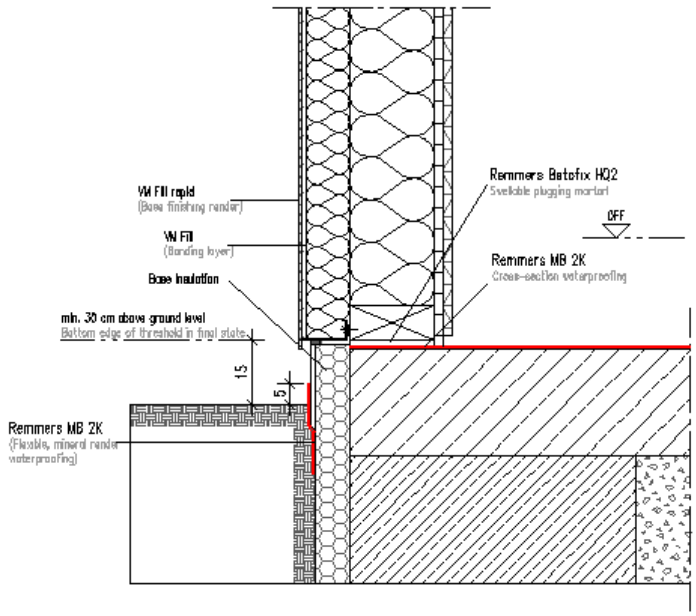
Wood – the building material of the future

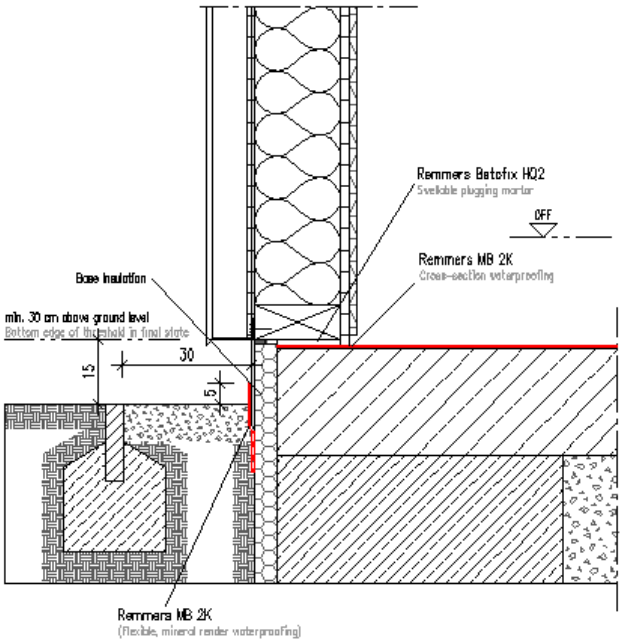
In future, timber frame construction is set to grow in significance as a building practice. At the same time, energy efficiency requirements and the associated specifications concerning damp and humidity are becoming ever more demanding.

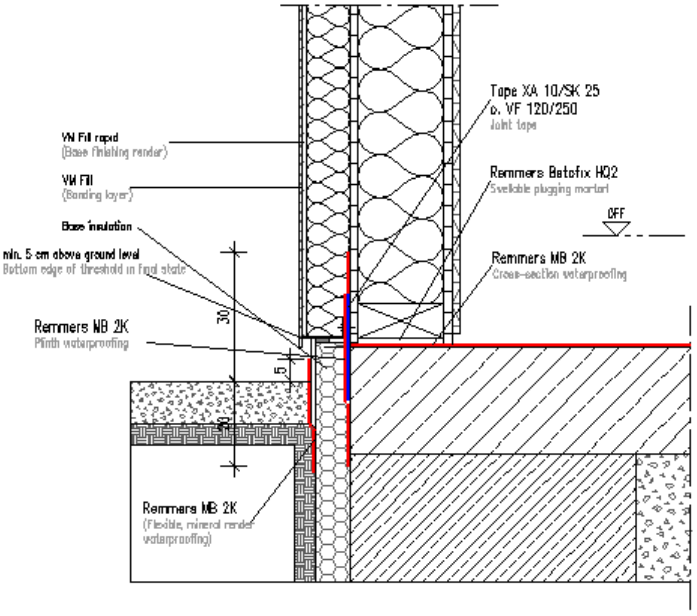
When in use, buildings are expected to consume as little energy as possible – or even none at all. They must also be resource-efficient and, of course, remain safe over the long term. What this means is that moisture ingress from outside, as well as from inside via condensation, must be reliably prevented. Moisture protection is even more paramount for timber frame construction than it is for buildings constructed from mineral materials.

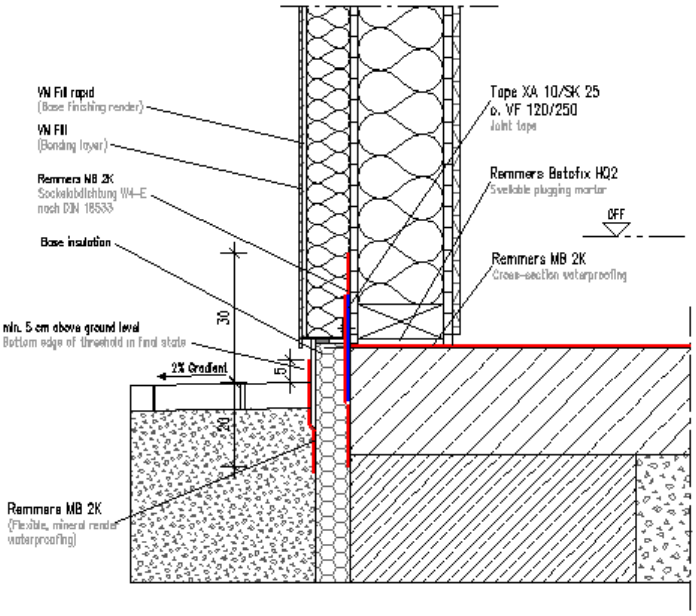
For this reason, DIN 68 800 does not currently stipulate that wooden sleepers may be installed below ground level, as there is a considerable potential for damage here due to increased moisture exposure. This approach is also logical and understandable when it comes to considering the conventional options in relation to structural waterproofing. But at the same time, it is also often very costly, since there is an increasing demand for barrier-free access to buildings. With the advent of new materials for waterproofing buildings, it is therefore worth taking a closer look at this point.

Construction drawings









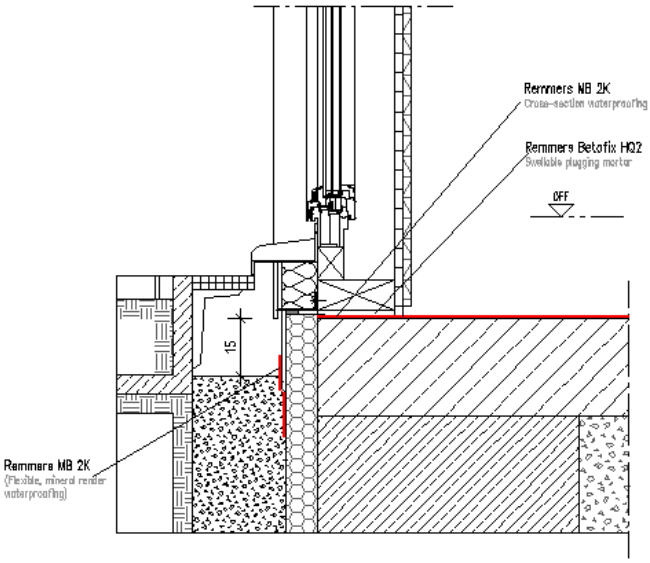
Cutting-edge building materials

Developers may wish to create barrier-free access to people's homes for a variety of reasons. We make accessibility simple.

It may simply be the desire for easy access to the building, e.g. when planning ahead for old age, or it may also be that certain life circumstances mean that barrier-free access to a building is required. In any case, barrier-free accessibility has been mandatory in public buildings for several years.

To create barrier-free access in timber frame construction, detailed planning is necessary. This is governed by DIN 68 800. The standard includes a construction drawing for this special case.

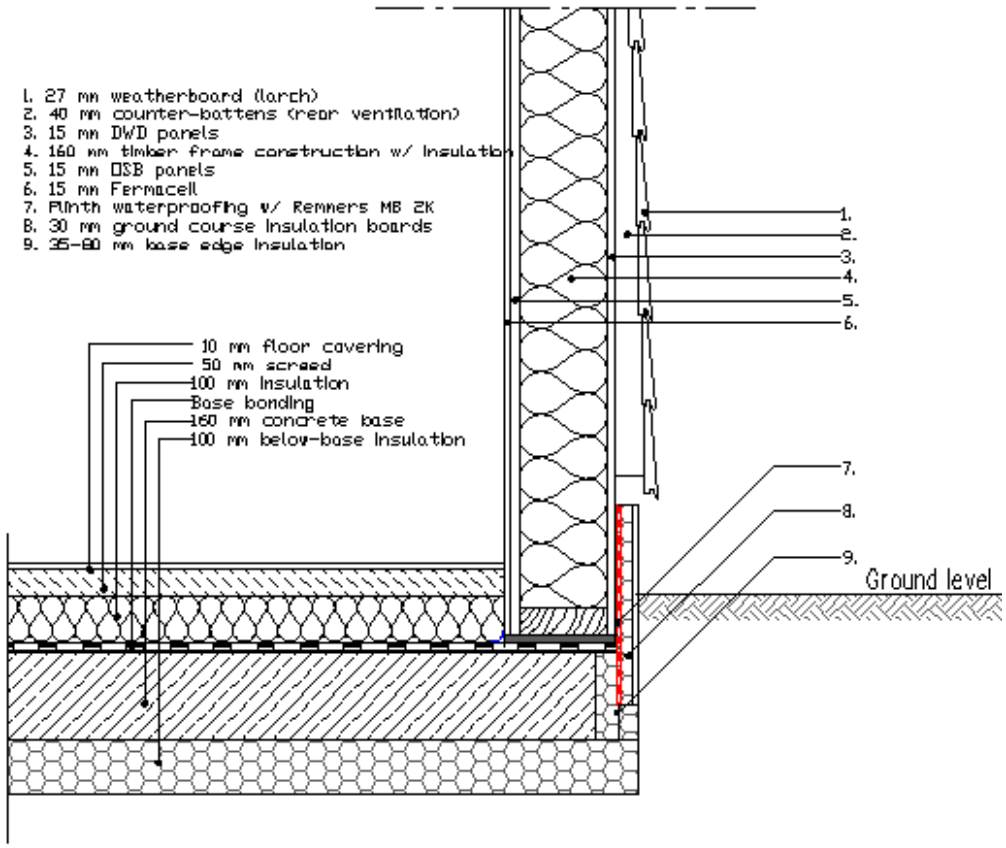
In everyday construction practice, many planners and contractors find this type of work too costly and complex. For this reason, ground-level thresholds are not usually planned in timber frame construction, but are often not explicitly excluded.



Modern assessment methods

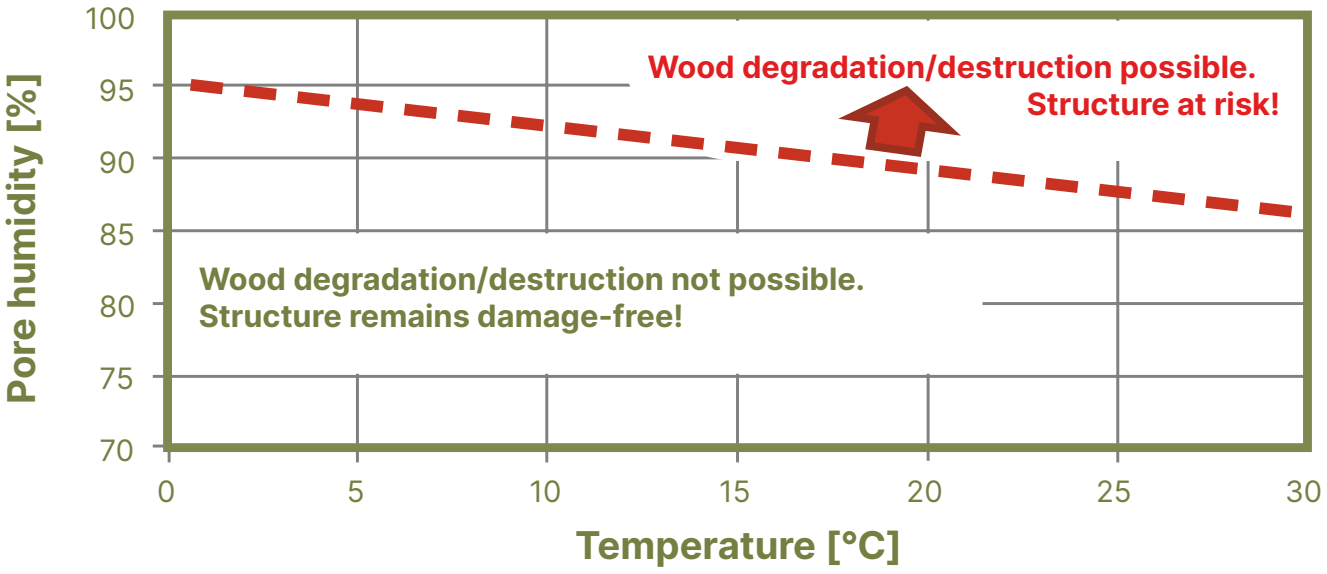
In order to find a practical solution that uses the building materials available today, we have used cutting-edge simulation technology to take a look at this detail more closely. The software we use is called DELPHIN, a digital simulation program for coupled heat, moisture, air and salt transport in building constructions. It is used by research institutes and universities worldwide. This program can be used to analyse virtually any problems in construction physics. The inclusion of natural climate and usage conditions makes it possible to obtain information on a wide range of topics, such as rising damp, the effect of sunlight or driving rain, or permitted moisture content at installation.

The construction



When is wood destruction a possibility?

In order to be able to make an assessment, one must first know which parameters are critical for wood components. The diagram below illustrates the climate conditions in which wood destruction becomes a possibility. Below this threshold (dashed line) the wood is not destroyed; the construction remains damage-free in these areas.



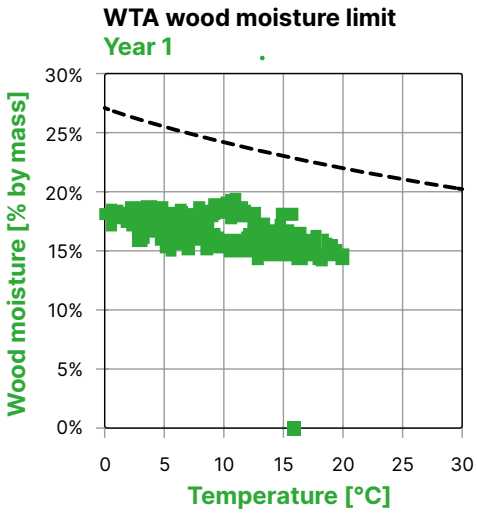
Verification with Delfin

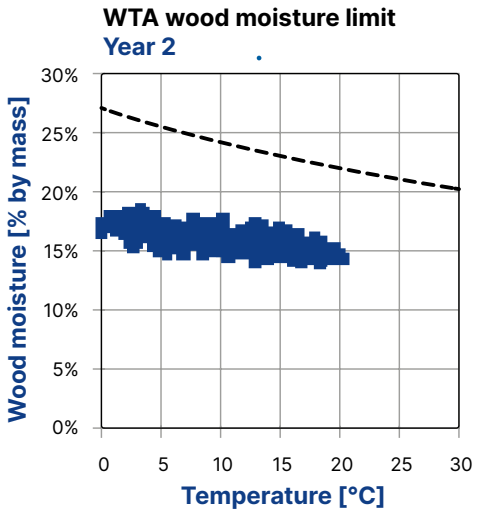
Coupled heat, moisture and mass transfer with outdoor climate data from Braunlage, Germany

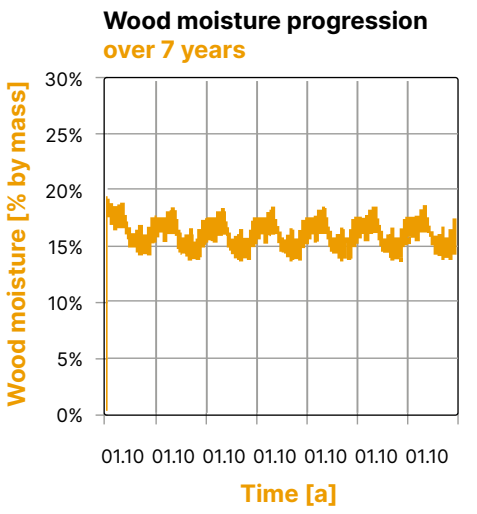
The outdoor climate used for the calculations was a data set for the test reference year in Braunlage, Germany, with hourly values for temperature, relative humidity, direct and diffuse solar radiation as well as wind and rain. The simulation calculations began on 1 October of the reference year in each case.

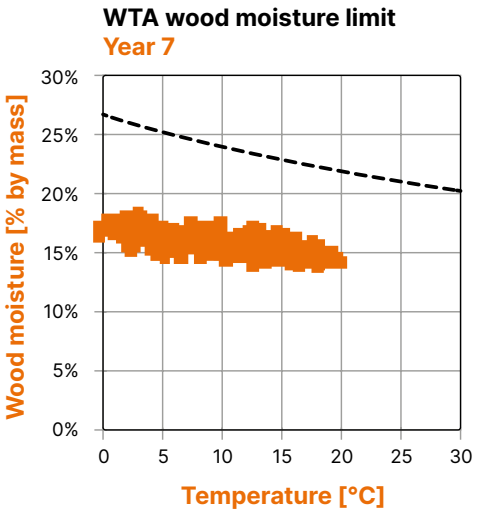
A permanent relative humidity of 99.99% was assumed for the base area in the ground, and a downward sinusoidal temperature curve between 12 °C and 8 °C was assumed for the other contact surfaces with the ground, also with a permanent relative humidity of 99.99%. The indoor climate was calculated according to WTA recommendation 6-2.

For the construction, the following parameters were assumed:
Waterproofing with MB 2K: 4 m< sd < 40 m
OSB: 165 ≤ μ ≤ 280 or 2.5 m ≤ sd ≤ 4.5 m









Results of the Delfin simulation:

Over a period of 7 years of real weathering simulation, the transient hygro-thermal Delfin calculation shows no significant moisture accumulation in the timber component.

The mass-related moisture content of the wood is constantly between 14 and 19% and thus clearly below the critical, wood-destroying moisture content for the average temperature range assumed here.

MB 2K is the safe choice for timber frame construction!

Cutting-edge building materials

Reliable waterproofing for timber frame constructions with MB 2K

The simulations show that, when using MB 2K as a waterproofing material, it is even possible to install ground-level thresholds in timber frame construction without any risks. Peace of mind guaranteed!

The result is a simpler and more reliable way for planners and contractors to make use of this type of construction and offer new design possibilities to customers.

Remmers also offers a wide range of products for conventional wood preservation, so that durable protection of the building can be guaranteed.

We get it done so that you can get things done

Whatever you have in mind: We at Remmers do everything to personally support you, your work, your project, your idea, your vision, to reach your goal.

We never stand still and we always go one step further for you.
We drive tomorrow's products and services forward. And strive for sustainable development. Because we know from over 70 years of experience: Progress comes from getting things done, success comes from getting things done, the future comes from getting things done.

What can we get done for you? Don't hesitate to get in touch.

"Never stop starting and never start stopping."

Guiding principle of Bernhard Remmers, founder

Remmers is one of the leading specialists for construction chemicals, wood paints and coatings, and industrial coatings. Founded in 1949 by Bernhard Remmers, we are an independent and owner-managed family business to this day. Our head office is located in the German town of Löningen in the Lower Saxony region – this is where we have our roots. At the same time, we have an international presence with 18 subsidiaries.

Exceptional range of products and services

Tailored solutions

Production in Germany

≈ 1600

Highly qualified specialists Europe-wide

All the extras that we get done for you

- **Personal service on site**
- **Digital services**
- **Delivery within 24 hours in Germany**
- **Remmers International Guarantee**
- **Competence Centres, Training and Service Centre**
- **Bernhard Remmers Academy**
- **Remmers Professional Planning**
- **Bernhard Remmers Institute for Analytics**

We get it done!

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We are there for you with a fast and personal response.

Find your local contact

Find out what we can get done for you:

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Colour variations are possible.
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