

Building security **How secure are wooden-frame buildings for stainless steel treatment and storage systems?**

Initially, concrete walls certainly offer greater passive protection in comparison to wood or industrial hall walls. However, commonly available cordless drills can be used to tamper with a tank in a very short time, allowing direct access to the water. This just isn't possible with HydroSystemTanks®.

As a general rule, intruders don't enter through walls either. They always enter via doors or windows as these are always the most vulnerable points and allow intruders to enter while making relatively little noise. This is why active building protection with door and window contacts and interior monitoring systems with a remote alarm system is very important (with alerts for a security service or the police).

Tanks with HydroSystemTanks® are very easy to monitor since they are in clear view inside buildings.

However, it is essential not to forget that a water distribution system with a large number of building connections and publicly accessible hydrants is always an extremely vulnerable system in which water storage tanks are generally regarded as one of the most secure components.

Wood outdoors **What is the lifespan of wood outdoors?**

Clear specifications on surface finishes can be found in DIN 18 334 (VOB Part C: General technical specifications in construction contracts). This is what it says in Section 3.11 Exterior wall cladding: 3.11.1 Exterior wall cladding must be made of coarse, trimmed boards.

Wood is a fibrous material. When sawing lengthwise, individual fibres or fibre bundles (i.e. wood shavings) are torn out in around the cut due to the saw teeth. This produces a rough surface.

When planing, the blade's cutting edge is guided over the wood in the lengthwise along the fibres. This cuts and opens up the fibres. Water or moisture can penetrate these open fibres more easily due to hygroscopic properties. This is why planed wood greys faster than rough sawn wood outdoors and provides fungal spores with ideal conditions for growth. In contrast, water drips off rough sawn wood.

Woods with a high resin content, such as larch and Douglas fir, are especially suitable for surface cladding. Siberian larches are particularly weather-resistant. They have small branches, a high resin content and denser growth.

When building with wood, it is also important to maintain a sufficiently great distance from the ground so that the wood can dry quickly after rainfall. Damp and plant growth **must** be prevented on wooden walls.

A service life of 80 to 100 years can be estimated for the building envelope after taking structural design principles into account (compare with mountain huts and farmhouses in the Alps).

Quality of floors

What type of floors should be installed in waterworks?

Floors in waterworks must always be built in such way that they meet German Workplace Regulation requirements.

Section 1.5 (1) state: The surfaces of floors, walls and ceilings in rooms must be designed so that they meet requirements for safe operation and can be cleaned both easily and safely.

And (2): The rooms' floors must not have any uneven surfaces, holes, trip points or hazardous slopes. They must be stable, non-slip, anti-skid and secured to prevent sliding.

Requirements for floor coverings in work rooms and work areas with a high risk of slipping are described in detail in the DGUV (German Social Accident Insurance) regulation 108-003. **This regulation is limited specifically to work rooms where, due to their usage, the floor comes into contact with slippery materials** (the work rooms affected are listed in detail in Appendix 1 of this regulation).

It is also stated in detail in 1.2 that this DGUV regulation does not apply to floors in work rooms and similar where conditions are dry and where there is no risk of slipping on slippery materials.

Nevertheless, a certain degree of anti-slip finish with an anti-slip rating of R11, R12 or even R13 is required for floor coverings in waterworks for tendering procedures.

Such a requirement is contrary to the DGUV regulation 108-003 since, firstly, there is no reason for it and, secondly, the cleaning and care measures described under Section 5.1 have not been considered. Floor coverings with a high anti-slip finish require intensive cleaning, which is normally only possible by using cleaning machines with the cleaning liquid is removed by suction. Anti-slip floorings also prevent water run-off significantly. More details are described in the regulation.

Summary:

Rough floor coverings with a high anti-slip rating (higher than R9) in waterworks or tanks for drinking water are

- not required by German General Accident Prevention Regulations (*UVV*) or the German Workplace Regulation (*ArbStättV*)
- not easy to clean
- consequently, fail to meet hygiene standards
- and **must** therefore be **avoided**

Sources:

- German Workplace Regulation (*ArbStättV*)
- German Technical Rules for Workplaces ASR A1.5/1.2