

Optimal protection for the things you love

Checklists with tips on
protecting your property
against natural hazards.



General tips

Property protection

- Natural hazards are natural processes that cannot be prevented. However, their effect can be reduced or eliminated by means of relocation.
- The risk for individuals can be reduced through the adapted use of rooms, e.g. by using outdoor and indoor rooms on the side facing away from the hazard.
- If structural protective measures are necessary, redundancy is recommended. This reduces dependency on a single protective element that may fail and therefore cannot offer protection anymore.
- Natural protective measures adapted to rooms are preferable.
- Permanent protective measures are preferable to temporary ones as they do not need to be set up in the event of an incident. In addition, permanent protective measures are more reliable.
- It is recommended to use only certified and proven products for the construction of protective measures.
- Professionals should be consulted when planning and constructing protective measures. For this purpose, cantonal offices and specialist engineering firms offer advice.
- Existing protective measures should be examined regularly for their suitability and functionality.

Behavior

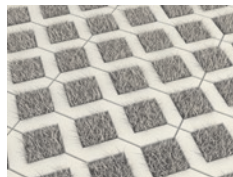
- In addition to protective measures, an emergency plan should be prepared specifying how to behave in the event of an incident. We also recommend that this emergency plan be practiced.
- Always consult the cantonal and federal authorities regarding upcoming natural hazards and subscribe to an SMS alarm (www.naturgefahren.ch, www.wetteralarm.ch, www.slf.ch/lawinenbulletin). The Federal Office for Civil Protection (Bundesamt für Bevölkerungsschutz) provides information and emergency plans for natural and other hazards (www.alertswiss.ch).
- Put together emergency equipment: Charge a mobile phone, stockpile robust, warm clothes and an emergency supply of water and non-perishable foods, stock up on cleaning materials, and prepare a list of emergency phone numbers and necessary skilled trades and auxiliary services. Organize alternative accommodation.
- Warn neighbors and look after children and anyone requiring help.
- If the event occurs: Stay calm, avoid panic. Ensure personal protection as the top priority. Inform yourself via radio/TV and follow the instructions of the authorities.
- Keep away from the danger zone and if necessary turn off electricity, heating and gas.
- Learn from past incidents and if necessary optimize the protective measures and emergency planning.

Tips for SMEs

- Check and optimize critical operating facilities (machinery, storage) and operations: Where are bottlenecks expected? Where are long-term or expensive machine failures or material losses to be expected?
- Set up a customized emergency plan for your personnel and your location.
- Ensure the emergency power supply.
- Organize operations on the basis of the hazard and arrange for protected production and storage if possible (e.g. raised and facing away from the hazard).

Checklist for flooding

Property protection



Avoid completely sealed surfaces such as asphalted access roads and parking lots. Instead use turfed paving stones, through which water can seep. Keep gutters on roofs and drain pipes clear of any blockages, and clean and inspect them regularly, especially before a thunderstorm warning.



The top edge of any ventilation shafts or light wells must be higher than the maximum water level in accordance with the hazard map. Connect drains to the sewer systems rather than a soakaway.



Install doors on the side of the building facing away from the river or seal and reinforce them depending on the maximum water level. Fasten doors from the outside and secure them using certified stoplogs.



If possible, install windows on the side of the building facing away from the river or ensure watertight reinforcement depending on the maximum water level and secure them using certified stoplogs.

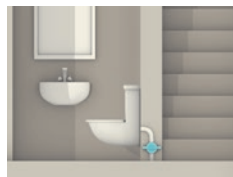


Floors, walls and ceilings should be made of moisture-resistant materials such as concrete, brick and stone, metal, plastic and glass.



Installation of building services and electrical equipment above the maximum water level, separate wiring for the supply of parts of the buildings below and above the maximum water level.

Checklist for flooding



Installation of backflow traps to prevent the backflow and penetration of flood water through sewers.



Protect garage door and underground garage entrances with certified stoplogs or install a reverse pitch in underground garages.



Firmly fix the oil tank or position it above the maximum water level.



If possible move valuable goods (of monetary and emotional value) to higher floors.

Tips for SMEs

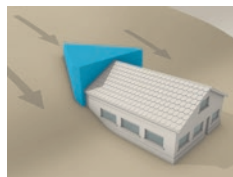
- Protect plant components and products that might suffer a total loss when exposed to water or high levels of humidity.
- Fix non-mobile plant components to prevent floating.
- Ensure that highly flammable chemicals and those that can contaminate water, such as fertilizers, paints or gasoline, are stored outside the danger zone.
- To ensure optimal drainage, check and clean sewers and drains on the factory premises regularly and remove any blockages.
- In the event of a flood warning, remove any outdoor storage facilities and mobile equipment from the danger zone. Note: Roads may be impassable even after only minor flooding.
- Regularly check technical flood protection measures (water pumps, etc.) for their suitability and functionality and integrate them into the maintenance schedule.

Checklist for mudflow

Property protection



Reinforce the side of the building facing the hazard and avoid installing any doors and windows.



Construction of a wedge (protective structure that divides and redirects the mudflow) or a dyke on the side of the building facing the mountain.



Install doors on the side of the building facing away from the hazard or seal and reinforce these depending on the maximum pressure in accordance with the hazard map. Fasten doors from the outside and secure them using certified stoplogs.



The top edge of any ventilation shafts or light wells must be higher than the maximum flow level in accordance with the hazard map.



If possible, install windows on the side of the building facing away from the hazard or ensure watertight reinforcement depending on the maximum pressure according to the hazard map and secure them using certified stoplogs.



Protect garage door and underground garage entrances with certified stoplogs or install a reverse pitch in underground garages.



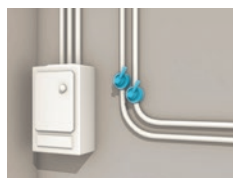
Floors, walls and ceilings should be made of moisture-resistant materials such as concrete, brick and stone, metal, plastic or glass.

Checklist for mudflow

Property protection



Firmly fix and position the oil tank above the maximum water level.



Installation of building services and electrical equipment above the maximum water level, separate wiring for the supply of parts of the buildings below and above the maximum water level.



If possible move valuable goods (of monetary and emotional value) to higher floors.

Behavior

- During and after thunder storms, avoid streams susceptible to mudflow. Avoid riverbeds and steep couloirs.
- Leave the danger zone or the side of the building facing the hazard.
- After a mudflow, the danger is often not over. Mudflows often happen in several, irregular waves.
- Information procurement on mudflow in the surroundings, including: torrents, narrow channels, steep couloirs in which mudflow could occur. It is very difficult to predict mudflow accurately. It is therefore important that you inform yourself about current weather conditions and other circumstances (e.g. thaw with thunderstorms) that might involve an increased risk of mudflow.

Tips for SMEs

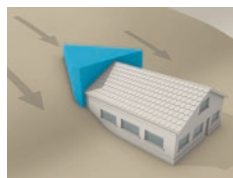
- Protect plant components and products that might suffer a total loss when exposed to water or high levels of humidity.
- Ensure that highly flammable chemicals and those that can contaminate water, such as fertilizers, paints or gasoline, are stored outside the danger zone.

Landslides and sudden slides

Property protection



Reinforce the side of the building facing the hazard and avoid installing any doors and windows.



Construction of a wedge (protective structure that divides and redirects the landslide) or a dyke on the side of the building facing the mountain.



Install doors and windows on the side of the building facing away from the hazard or reinforce these depending on the maximum pressure. Fasten doors from the outside and secure them using certified stoplogs.



Protect garage doors and underground garage entrances with certified stoplogs.

Landslides and sudden slides



For new buildings: Erect embankments.



If possible move valuable goods (of monetary and emotional value) to higher floors.

For low landslides (up to 2 m), plant the slope with deep-rooted shrubs and trees.

Behavior

- Leave the danger zone or the side of the building facing the hazard.
- During and after thunderstorms and prolonged wet spells, avoid steeply sloping hillsides or steep terrain.

Tips for SMEs

- Protect plant components and products that might suffer a total loss when exposed to water or high levels of humidity.
- Ensure that highly flammable chemicals and those that can contaminate water, such as fertilizers, paints or gasoline, are stored outside the danger zone.

Checklist for permanent slides

Property protection



Reinforce the floor.

Monolithic construction (building consisting of a single piece) and structural separation between the main building and any annexes.

Installation of a sewage pipe for rainwater and slope drainage for optimized soil drainage.

Tip

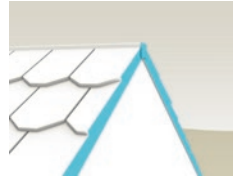
Permanent landslides are usually difficult to detect for the uninitiated by eye. An accurate evaluation by professionals (cantonal agencies or specialist engineering companies) is therefore worthwhile.

Checklist for avalanches

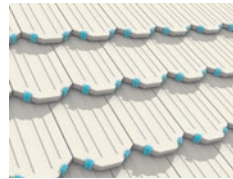
Property protection



Reinforcement of the side of the building facing the hazard. If possible, do not install any doors and windows on the mountain side, otherwise use only small windows. Fasten doors from the outside.



Avoid eaves.



If possible, use and affix heavy tiles.

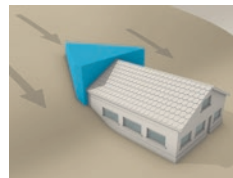
Remove snow from roofs (house, porch, conservatory) to prevent roof avalanches.



Install collection or diversion dams on the mountain side to prevent small avalanches and snow slides.



If topographically possible, construction of a ramp roof.



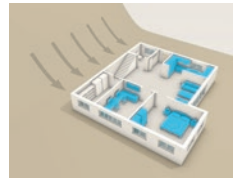
Construction of a wedge (protective structure that divides and redirects the avalanche) or a dyke on the side of the building facing the mountain.

Checklist for avalanches

Property protection



If possible, only use the outdoor facilities in summer or move these out of the danger zone. In the event of snow slides use tripods.



If possible, only construct rooms on the side of the building facing the mountain in which people spend a short amount of time (bathroom, stairwell, corridors, warehouses, etc.).



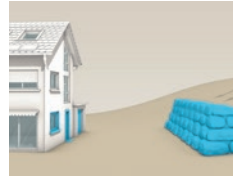
If possible, move valuable goods (of monetary and emotional value) to the side of the building facing away from the hazard.

Checklist for falling objects (falling rocks or boulders)

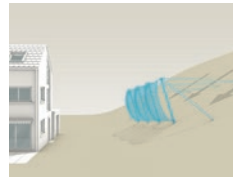
Property protection



Reinforce the side of the building facing the hazard and avoid installing any doors and windows.



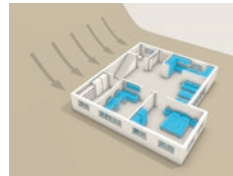
If possible, do not install windows and doors on the side of the building facing the mountain. Secure windows with steel bars, doors with protective walls or dykes.



Install safety netting against falling rocks and boulders. If a rock face directly adjoins the building, install rock fall netting or rock anchors or clean the rock face.



If topographically suitable, construction of an earth-covered ramp roof.



If possible, only construct rooms on the side of the building facing the mountain in which people spend a short amount of time (bathroom, stairwell, corridors, warehouses, etc.).



If possible, move valuable goods (of monetary and emotional value) to the side of the building facing away from the hazard.

I would like to know more!

Zurich's natural hazard radar

Site and property analysis for your real estate:
www.zurich.ch/naturgefahren

Natural hazards in Switzerland

The Zurich guide on natural hazards with background information
and interviews with experts and those affected.



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