



Checklist/Information sheet

Escape and access routes

The document below represents a summary of statutory provisions and safety rules relating to escape and access routes. The document is intended as a checklist for caretakers, safety officers, contact persons for workplace health and safety, etc. in relation to buildings at the University of Bern.

The building concerned must be adapted to reflect the current state of the art in the event of any structural changes. Structural changes need to be implemented immediately if people are in significant danger.

Escape and access routes:

- In the event of danger, it must be possible at any time to leave workplaces, rooms, buildings, and premises both quickly and safely. Access routes serving as escape routes in the event of danger must be signed accordingly and kept clear at all times.
- An escape route is deemed to be the shortest route available to people in order to move from somewhere inside a building or facility to a place of safety outside.
- If escape routes only lead to one staircase or one exit leading outside, they must be no longer than 35 m. If they lead to at least two separate (i.e. located apart) staircases or exits leading outside, they must be no longer than 50 m.
- The length of the escape route is measured 'as the crow flies' within rooms, plus the 'line' people follow along corridors. The distance people travel inside staircases before reaching the outside is not included in calculations.
- If a room only has one exit, no point in the room may be more than 20 m away from it. If a room has two or more exits, the permissible distance increases to 35 m.
- The inner courtyard must contain at least one exit which is safe to use.
- The width of escape and main access routes is at least 1.20 m (0.90 m for doors and 1.20 m for stairs).
- The width of secondary access routes is at least 0.8 m (those leading to main access routes).
- Trip hazards must be avoided along access routes. Thresholds must be no higher than 5 cm. Thresholds at exits leading outside may be as high as 20 cm.
- Stricter standards need to be stipulated at sites where large numbers of people are present (> 100). More detailed information is contained in art. 16 of the Fire Protection Standard and in Fire Protection Directive 16 entitled 'Escape and rescue routes' from Switzerland's Association of Cantonal Fire Insurance Providers (Vereinigung Kantonaler Feuerversicherungen – VKF).
- Fire loads should be avoided in corridors, stairwells, and escape routes (photocopiers with piles of paper, cabinets, devices, etc.); cabinets and fixtures should be arranged on one side only and fitted with non-combustible fronts.
- Pipes containing combustible or poisonous fluids or gases must not run along escape routes.
- Any communal areas (containing a fridge or oven) and the like must be located in niches (any such areas in new buildings must be kept separate from escape routes to prevent the spread of fire (E 30)).



Specific provisions relating to escape routes:

- Emergency exits and escape routes must feature highly visible signage (e.g. green/white backlit symbols or emergency lighting). Information on this subject can be found in the SN EN 1838 standard (Lighting applications – Emergency lighting).
- Emergency exits and escape routes must offer unobstructed access at all times. If these exit doors need to be locked, it must be possible to activate the emergency release without a key (e.g. panic release facility, lock that can be opened from inside the building by pushing a button).
- Addresses for suppliers of photoluminescent safety signs can be found online at <http://www.suva.ch/lieferantenlisten>.
- The SUVA information sheet 44007 is worth reading in terms of signage for escape routes.
- It must be possible to reach at least one staircase plus one (safe to use) emergency exit from any room in a given basement floor; if there is more than one basement floor in a building, at least two staircases must be available.
- Maps of escape routes must be put up at a central location.

Staircases:

- Staircases must feature exits which lead directly outside.
- Stairwells and corridors must be kept separate from the inner parts of buildings to prevent the spread of fire.
- Open sides of staircases must be fitted with railings. Railings must be at least 1 m high where staircases open out and at intermediate landings.
- Walled-in staircases up to 1.50 m wide must be fitted with a handrail on at least one side, while wider staircases must have a handrail on both sides.
- Stairs must run in a straight line and incorporate intermediate landings every 15 to 18 steps at the most.
- Stairs must have a non-slip surface or non-slip covering.
- Staircases with more than four steps should be fitted with railings or a handrail.

Basement floors:

- It must be possible to reach at least one staircase plus one emergency exit (safe to use and at least 0.80 m wide) from any room in a given basement floor; if there is more than one basement floor in a building, at least two staircases must be available.
- Emergency exits from the basement floor must offer unobstructed access at all times. This must be ensured through design measures (e.g. railings).



Doors along escape routes:

- In terms of safety objectives, doors along escape routes must be identified as such, be possible to open without tools/assistance, and be safe to use.
- Swing doors should be hung so they open in the direction of escape.
- The clear width of single-leaf doors must be at least 0.90 m.
- Information regarding doors along escape routes can be found in the appendix to art. 10 in the guide to Ordinance 4 to the Swiss Employment Act.
- Information regarding doors, gates, and windows is contained in EKAS directive 1511.

Emergency lighting:

- With regard to work performed in the evening or at night, access and escape routes, exits, and any installations and control stations that need to be operated in the event of a power outage must feature emergency lighting that operates independently of the mains and switches on automatically when the mains voltage fails (see SN EN 1838).
- It is therefore important that emergency lights are marked as such and in a way that can be recognised from floor level. They need to undergo periodic maintenance and testing.



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Planning aids for escape routes:

(The images below are taken from the guides to Ordinances 3 and 4 to the Swiss Employment Act.)

Die Form des Raumes sowie raumtrennende Wände ohne Durchgänge sind zu berücksichtigen.

Einbau eines Korridors (1 Ausgang)
Fluchtweg «Raum»: max. 20 m
Gesamtfluchtweg: max. 35 m

Die maximale Fluchtweglänge in einem Raum mit zwei Ausgängen beträgt 35 m. Die Ausgänge müssen endständig angeordnet sein.

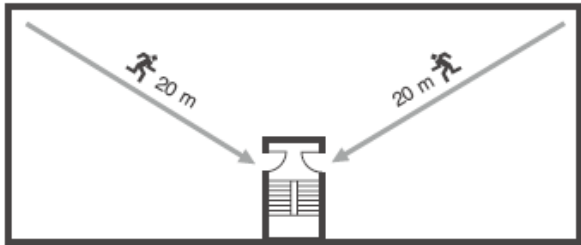
Der gesamte Fluchtweg setzt sich zusammen aus den beiden Fluchtweganteilen «Raum» und «Korridor».

Die maximale Fluchtweglänge in einem Raum mit nur einem Ausgang beträgt 20 m. Möblierungen und Lager-einrichtungen werden nicht berücksichtigt

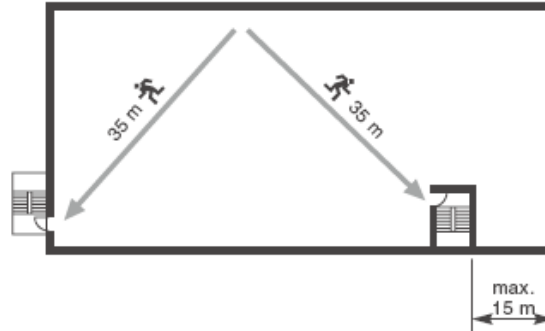


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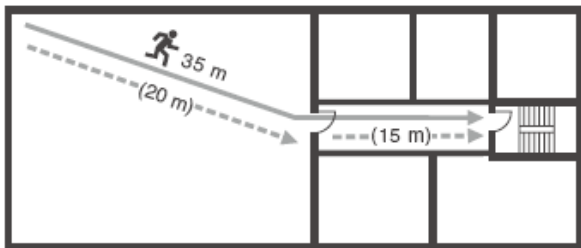
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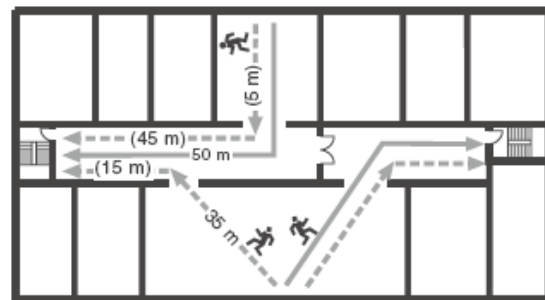
Treppenanlage ohne Korridor



Zwei Treppenanlagen ohne Korridor



Treppenanlage mit kurzem Korridor

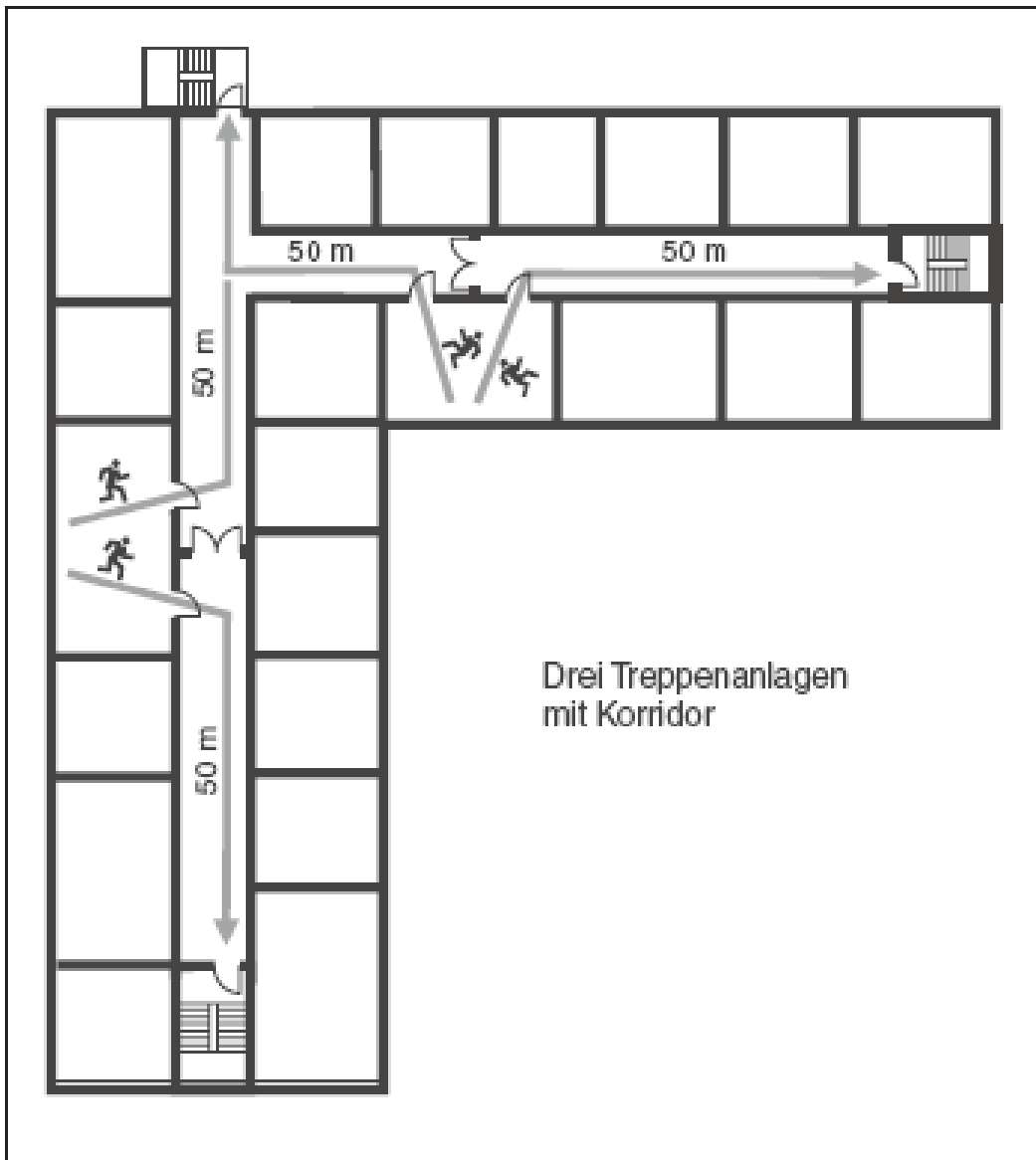


Zwei Treppenanlagen mit Korridor



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Skizze	Beschreibung	
<p>4.1</p>	<p>Flügeltüre mit Öffnung in Fluchrichtung mit Türschloss mit Panikverschluss</p> <p>Die Betätigung der inneren Türfalle entriegelt immer Schloss- und Türriegel.</p>	
<p>4.2</p>	<p>Flügeltüre mit Öffnung in Fluchrichtung mit Panikstange</p> <p>Bevorzugt einzusetzen bei Notausgängen von Räumen mit grosser Anzahl von Personen.</p>	
<p>4.3</p>	<p>Flügeltüre mit Öffnung in Fluchrichtung mit elektromagnetischer oder elektro-mechanischer Verriegelung</p> <p>Entriegelung erfolgt mit Drucktaster (kein Handgriff).</p> <p>Die Tür öffnet sich durch leichten Stoss gegen das Türblatt.</p> <p>Bei der Aktivierung des Drucktasters wird ein Alarm ausgelöst.</p>	
<p>4.4</p>	<p>Flügeltüre mit Öffnung in Fluchrichtung mit Exit-Controller</p> <p>Bei der Aktivierung des Exit-Controllers wird ein Alarm ausgelöst.</p>	

The points above serve as a checklist for tours and audits of escape and access routes. The checklist summarises the requirements for escape and access routes as per guides 3 and 4 to the Swiss Employment Act. It is not exhaustive and may only be used in conjunction with the guides referred to (additional provisions and standards also need to be observed, such as fire protection provisions from the VKF etc.).

Further literature can be found here:

- www.ekas.ch
- <http://bsvonline.vkf.ch/>