

**GUIDELINES FOR ACCESSIBILITY**

# **BREAK THE BARRIERS**

According to the Disability Policy (Responsibility of National Authorities for Implementation) Ordinance (2001:526).



**HANDISAM**

Swedish Agency for  
Disability Policy Coordination

**Handisam – Swedish Agency for Disability Policy Coordination** has been tasked by the Government with two paramount tasks within Swedish disability policy: coordination and acceleration. Handisam speeds progress towards a society in which everyone can participate on equal terms regardless of functional capacity.

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According to the disability Policy (Responsibility of National Authorities for Implementation) Ordinance (2001:526).

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**Translated by:** English Law Translations AB.

Postal address: Handisam, Arenavägen 63,

121 77 Johanneshov

E-mail: [info@handisam.se](mailto:info@handisam.se)

Telephone: +46 (0)08-600 84 00

Fax: +46 (0)08-600 84 99

This book is an update of *Guidelines for an accessible public administration*, which was issued by the Office of the Disability Ombudsman (HO) in 2003.

# Foreword

**More than a million people in Sweden have a disability. This must not become an obstacle.**

Our society is constantly changing. But not everything is changing at the pace that we would like. Society is facing great challenges. Fewer people must support more. Nonetheless, people with disability are an unused resource in working life. One explanation is inadequate accessibility.

Having been tasked to effect change, the central Government administration is leading the work to create an accessible Sweden. Handisam supports the authorities in this readjustment work, among other things through the revised *Guidelines for accessibility*.

It is important that cohesive accessibility work is started up in areas where it is not yet started – and is pursued further where it has made some progress. We hope that the material that we have compiled will provide good support and be a source of inspiration.

The Government and its authorities must represent a model, but we also have the ambition of reaching out to others in society. Efforts are called for on the part of everyone. There is only one society: Our common society.

*Carl Älfvåg*

Director-General

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# Summary

The Government has laid down by a special Ordinance that the national authorities have a particular responsibility for the implementation of the disability policy. The authorities must work specially to ensure that their operations, information and premises are accessible for people with disability.

Obstacles must be identified and rectified in order to enable full participation and equality for people with disability. The first step is to produce an action plan.

To make operations accessible means integrating the disability perspective in the authority's planning, decisions and processes – and also assuming responsibility as an employer. In these Guidelines, the requirements within this area are marked by a 

To make information accessible means making it possible for people with disability to communicate with – and gain access to – the authority's information via printed media, telephony, web, film and meetings. In these Guidelines, the requirements within this area are marked by a 

To make premises accessible means that people with disability should be able to visit an authority – and also gain access to and participate in the operations conducted there. The premises should also function as a workplace for people with disability. In these Guidelines, the requirements within this area are marked by a 

# The State should set an example

The public administration sector must ensure that the prescribed disability policy is realised. The disability policy objectives should be observed in operations and authorities should work actively towards achieving the national goals. Every authority must therefore conduct an assessment of the extent to which its own operations can contribute to satisfying these goals.

The authorities should in addition represent a good example as regards accessibility and also as employers for people with disability. The Government has prescribed the national authorities' responsibility for the implementation of the disability policy through a special Ordinance (2001:526). The Guidelines must be complied with in order to satisfy the requirements of the Ordinance.

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## **DISABILITY POLICY (RESPONSIBILITY OF NATIONAL AUTHORITIES FOR IMPLEMENTATION) ORDINANCE (2001:526).**

### **Implementation of disability policy objectives**

Clause 1 The disability policy objectives shall be considered by authorities reporting to the Government when structuring and conducting their operations. The authorities shall work to ensure that people with disability are afforded full participation in the life of the community and equality of conditions of life. The authorities shall in particular work to ensure that their premises, operations and information are accessible for people with disability. The United Nations' Standard Rules on the Equalization of Opportunities for Persons with Disabilities shall constitute guidance for this work.

### **Planning and consultation**

Clause 2 In working to make their premises, operations and information more accessible for people with disability, the authorities shall draw up inventories and prepare action plans. However, this obligation does not apply if it is manifestly unnecessary considering the nature of the operation.

Clause 3 The authorities shall, when there is cause to do so, consult with the Swedish Agency for Disability Policy Coordination on the structuring of initiatives under this Ordinance. Ordinance (2005:1081).

# Disability policy for full participation and equality

**The goal for the Swedish disability policy is to ensure a social community based on diversity, where society is formed so that men and women, and similarly boys and girls, with disability become fully participative in the life of the community and have equal conditions of life. The disability policy therefore not only relates to people with disability, but to everyone in society.**

## **The disability perspective in change**

In order to attain the Disability Policy objectives, the Government has prescribed the orientation of the policy. It is necessary to rectify obstacles to participation, prevent and combat discrimination and also establish the preconditions for independence and self-determination. The clarification of the goals is important to understand as a change in perspective. The perspective is being shifted from the individual to environment and surroundings, improvement and facilitation. The main alternative is to choose general solutions that function for as many people as possible. How an individual's disability can be compensated by individual support or through special solutions should be viewed as a supplement.

## **Work with the disability perspective**

The Swedish disability policy proceeds on the basis that people have different capacity and that reduced functional capacity is one of several natural variations among the population. The disability perspective results in a strategy and working method that is oriented towards identifying the obstacles prevailing, rectifying them and/or offering the support that may be needed.

It is intended that every sector in society should be designed so that it becomes accessible to all citizens. The costs should be borne by the ordinary operation. This is referred to as the '*principle of responsibility and financing*'. This makes the policy sustainable in the long term. In the short term it is important to have a strategy.

Three principal areas for improvement will facilitate the ongoing development towards the goals:

- To, as a part of a long-term sustainable social development, ensure that planning and design of environments, buildings, products and services

proceed on the basis that people are different. With the point of departure *Design for All*, accessibility and usability are created for as many people as possible, without retroactive corrections and modifications that raise costs.

- What already exists – existing environments or technical solutions that are already developed – shall be continuously improved as regards accessibility and usability.
- That independence and opportunities for self-determination should increase for people with disability. It is important that influence in decision-making processes increases for those who are entitled to and use the support and the service that society offers. It is also important that the new orientation has an impact within those operations that traditionally work with initiatives for people with disability. There is otherwise a risk that that individual support and special solutions shall remain the main alternative.

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## FUNDAMENTAL CONCEPTS

In Handisam’s Guidelines the term **accessibility** is used as a comprehensive term for both accessible and usable.

Generally, **accessibility** and **usability** are used to describe what is required for people with disability to be able to participate on equal terms with others. Both concepts are needed and used in parallel, for example in building legislation. This involves both being able to get to and being able to reach an operation. It also involves how efficient the use is and the possibilities of participating in the operation.

**Accessibility** and **Design for All** complement each other. Accessibility is a term that is used in legislation and standardisation work to describe the properties of an environment, product or service. The starting point is the need of people with disability. *Design for All* has a broader approach, aiming towards planning and design that functions for all people regardless of functional capacity.

In the Guidelines, the concept **accessible operations** is used to describe everything that is required to facilitate participation and equality for people with disability. For example, ignorance, negative attitudes and prejudice can all result in the necessary improvements to accessibility not being implemented and deficiencies in approach. Another example is that inadequacies in routines can create structural obstacles. It is necessary to think before acting.

In discrimination legislation, **disability** is defined as: “permanent physical, mental or intellectual limitation of a person’s functional capacity as a consequence of an injury or an illness that existed at birth, has arisen thereafter or which may be expected to arise”.

**Impaired orientation capacity** is a concept that is often used in the Guidelines and is

also found in building legislation. Impaired orientation capacity may be linked to impaired vision, reduced hearing or impaired cognitive capacity.

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# Start by producing a policy and action plan

**The process of making the authority accessible can be divided into various components – from policy and needs inventory to evaluation.** A report is provided here on how the authority can work, as regards both planning and strategy, to make the authority accessible.

## Overall policy

Authorities conduct different operations and have different visions, goals, resources, ambitions and points of departure. Each authority must therefore analyse its own operation and on the basis of this decide what the accessibility requirements mean specifically for them.

An overall policy that clearly indicates how the authority views the issue needs to be produced by the management as a basis for future work. This policy can be included in the action plan, but it may also be a separate document or included in another policy document. In order that all employees should be aware of the accessibility work, the requirements imposed and their own responsibility, senior management must communicate the fact that accessibility work is a priority issue.

How to make the authority accessible

### 1. First, produce a policy

Analyse the authority's operations. What do the accessibility requirements mean?

Appoint a coordinator and the responsible officers

- The operation
- Information
- The premises

### 2. Then produce an action plan

Conduct an analysis of the current situation. Inventory accessibility and survey how the disability perspective is dealt with

- The operation

- Information
- The premises

Continue the analysis of the current situation

- Plans and policy document
- Procurement, purchasing
- Skills requirements

Analyse, prioritise, produce measurable sub-objectives

- The operation, information, the premises
- Integrate the disability perspective: in-house training, procurement, policy document, care and maintenance, efforts relating to work environment, etc.

Draw up plans for measures and implement concrete measures

- Time
- Officers responsible
- Budget

Follow up, evaluate and revise

See [www.handisam.se](http://www.handisam.se) for more information.

## **Allocate resources, appoint the responsible officers and coordinator**

One first step may be to allocate resources for the work and to appoint certain key people.

The disability perspective must be integrated within the entire organisation and key people should be appointed, with responsibility for planning and monitoring accessibility in within various areas – such as information, premises and operation – and for producing the action plan. Furthermore, it is necessary to have someone responsible for coordinating this work.

The head of the authority is ultimately responsible for ensuring that the authority becomes accessible. It is also the head of the authority, agency, or when applicable board, that must approve the finished action plan.

## **Describe the current situation**

An analysis of the current situation is required to be able to establish measurable goals for the work. This must be based on a survey and inventory of accessibility. Three areas should be included, namely

- the operation generally
- information and communications
- premises, including fittings and equipment.

Handisam's inventory forms and checklists, which can be adapted according to the scope of the inventory and the method used by the person conducting the inventory, should be used. Forms and checklists can be downloaded from [www.handisam.se](http://www.handisam.se).

The description of the current situation should also include any inadequacies in accessibility that have been made apparent through complaints by visitors and employees or which have been established within the scope of systematic efforts relating to work environment.

The inventory of the premises can be conducted in stages. Give priority to accessibility in entrances and entrance halls and toilets for people with impaired mobility capacity. Also conduct an inventory of environments that are often used by the public and premises for teaching and meetings. Over time, all parts of premises should be inventoried. If the inventory is conducted in stages, the planning of when the various stages are to be inventoried should be included in the action plan.

Newer premises, which upon a cursory review appear to be accessible, also often have inadequacies regarding accessibility. It is for instance rather common to have inappropriately placed manoeuvring devices, insufficient contrast and warning marks and inappropriate placement of fittings in hygiene rooms and inadequacies as regards equipment. It is therefore important to also survey accessibility in newer buildings.

The description of the current situation should for instance consider how the disability perspective is dealt with

- in policy documents and planning work
- in connection with procurement and purchasing
- as regards what needs of competence within the area are required by the authority.

## **Analyse, prioritise, produce measurable goals**

The result of the description of the current situation must be analysed before the authority adopts a position on what is most urgent to rectify – and which should be given priority. Measurable goals in the short and long term for the authority's information, premises and operation should be set. Goals should also be set for the areas of competence, procurement and integration of the disability perspective.

Certain fundamental principles should be complied with when establishing priorities. Regardless of functional capacity everyone should be able to

- gain access to the authority's basic information
- communicate with the authority
- get into premises where the authority operates and also get to the most frequently visited parts
- participate in meetings and in teaching
- use toilets.

Moreover, measures that enhance security for people when moving around should be given priority, for example contrast marking of large glass partitions. At workplaces and universities/colleges, common areas should be given priority and at least a few workrooms be made accessible. The benefit of a particular measure in relation to other measures creating accessibility forms the basis of the prioritisation. Through describing the benefit of the various measures to improve accessibility, the work to gain broad support within the organisation will become easier.

## **Establish plans for measures and rectify obstacles**

A plan for measures is a summary of the concrete measures to be implemented to eliminate obstacles. The plan is based on inventories and views expressed regarding inadequacies to accessibility. The plan for measures concretises the goals that have been established.

The plan for measures should state the time for the measures, who is responsible and the costs. If the inventory of the premises is conducted in stages, state when the various measures are to be implemented. It may be appropriate to plan certain measures jointly.

Maintenance plans and plans for measures for the accessibility of premises need to be coordinated so that 'while we're at it measures' are not forgotten. Costs should also be calculated for the measures that are planned for the year and

included in the budget. The various organisations of people with disability may be an important resource for discussions regarding the priorities to be adopted.

### **Follow up, evaluate and revise**

It is important that accessibility work is followed up and evaluated – in order to see which measures have been completed and functioned and which ones perhaps remain or did not yield the expected result.

Evaluation is necessary as quality control of the work that the authority has already conducted and demonstrates whether the authority is on the right track or if reprioritisation is required.

The disability movement may be a resource for this work. Evaluation methods are chosen on the basis of what is to be evaluated. Work with improving accessibility is also affected by the constant development and change of technology, products and environments. Goals must consequently be followed up, results evaluated and new objectives formulated. The action plan is consequently not definite but must be regularly revised.

# Disability and accessibility

**Knowledge about the different needs and capacity of people leads to increased quality of the authorities' contacts with its target groups. Increased awareness is also required to create understanding as to why the measures to improve accessibility should be implemented. One important aspect is that these needs may possibly be different for men and women. A description is provided below of the requirements for accessibility related to various disabilities.**

## **Impaired mobility capacity**

Accessibility for people with impaired mobility capacity primarily means that it should be possible to move around independently and securely in the urban environment. A precondition for this is that the surface is even and firm, that it is possible to move ahead without crossing or using steep slopes, stairs, high thresholds, narrow passages and heavy doors. One should not be compelled to take long detours. Handles and controls must be easy to operate and located within reach, even for people using wheelchairs and who perhaps also have impaired arm or hand function. Handrails to hold onto are necessary for people with impaired walking capacity, primarily beside stairs and ramps.

Accessibility also means that spaces are sufficiently spacious to allow one to be able to manoeuvre with a wheelchair or walker. There should for example be sufficiently large toilets. Fittings and equipment should be designed and placed where they are usable, for example heights of reception desks, exhibition cases, shelves, signs and displays should be appropriate for people using wheelchairs or of short stature. Those who use wheelchairs should also be able to sit at tables and workbenches.

## **Impaired vision**

Accessibility for people with impaired vision means that it should be possible to orientate and move around without being exposed to unnecessary safety risks. Route indication markers that can be followed by a person using a technical cane, a white cane, and contrast marking are examples of means that can be applied to achieve this. Accessibility also means that it should be easy to discern controls and distinguish them from each other. Access to personal service, for example in the form of an escort often represents a precondition for an unknown environment to become accessible.

Information of various kinds must be presented in an accessible way. The layout should provide the best possible readability and information should be available in alternative formats. Websites should be structured according to

accepted norms so that they are accessible and can be read with a speech synthesis program. Visual relay must be supplemented with relay that can be perceived by other senses.

## **Reduced hearing, deafness and deafblindness**

Accessibility for people with reduced hearing, deaf or deafblind means that it should be possible to communicate with other people, gain access to information and also perceive alarms. A good noise environment, access to auditory technical equipment – for example an induction loop – and also visual information and information in sign language often represent a precondition for good accessibility. One important aspect is that sign language is a first language for many people. Accessibility for this group means that one obtains information in sign language and access to a sign language interpreter. For people who are deafblind, tactile sign language represents a precondition for communication.

## **Impaired cognitive capacity**

Cognition means the capacity to remember, orientate oneself in time and space, capacity to resolve problems, numerical capacity, linguistic capacity, and more. People with impaired cognitive capacity are a heterogeneous group. Accessibility can mean very different things for different individuals.

For many people with impaired cognitive capacity, accessibility in the physical environment means that it is possible to orientate oneself and use the environment without being exposed to unnecessary safety risks. Fittings and equipment should be designed so that they are easy to understand. User instructions should be concrete and have a clear layout.

It should be possible to get information of various kinds in a simplified form that is clear, concrete, brief and unambiguous, for example translated into easy-to-read Swedish. Information signs should be easy to understand, which can be achieved through the use of symbols.

The help of a tutor or an assistant may be necessary in connection with communication and operations involving the relay of information. For a conference this may for example mean that the tutor should have the possibility of stopping a presentation in order to have time to explain what has been said.

## **Difficulties with respiratory organs, allergies or hypersensitivity for certain food substances**

For people with difficulties with respiratory organs and allergies, accessibility means that it should be possible to stay in an environment without being adversely affected by allergic reactions or difficulties with respiratory passages. This means that the air quality in buildings must be good, that it is possible to avoid substances, material, plants and scents that can cause allergic reactions or cause problems for people with hypersensitivity.

On courses and conferences, it should be possible to obtain information about the food to be served. If necessary, there should be alternatives for people with food allergies.

## **Illnesses and other functional impairments in the digestive tract or incontinence**

For people with these kinds of disabilities, accessibility involves having access to appropriately designed toilets.

The possibility of gaining access to and participating in the operation is to a large extent dependent on how it is planned and implemented. Accessibility means that there is access to toilets, that times specified are kept, that work is in short passes and that there are regular breaks. There should also be access to adapted food.

## **Disability owing to mental illness**

For people with disability owing to mental illness the preconditions for accessibility can vary greatly from individual to individual. Mental illness can in certain cases result in impaired cognitive capacity.

It is particularly important that the environment is calm and harmonious, that elements of disruption, for example disruption from light and noise, is minimised and that there is access to rest rooms and privacy if required.

## **Impaired voice and speech function**

People with impaired voice and speech function may find it difficult to communicate, for example via telephone. A precondition for communication being accessible is therefore that alternative means of communication, such as Total Conversation or special solutions such as Taltjänst (Speech service), Teletal (Speech interpretation service) and text telephones are used. For

educational operations, it is important that tests of knowledge are designed so that examinees can demonstrate their knowledge.

## **Reading and writing difficulties**

For people with disability owing to reading and writing difficulties, it is the formulation of the information that often causes difficulties. It must be possible to obtain information in alternative formats such as audio cassettes and Daisy audiobooks. It should also be possible to get electronic information read out with the aid of speech synthesis. The layout should provide the best possible readability, and the structure of the text should be facilitative for the reader. In educational contexts, it is important that tests of knowledge are designed so that everyone has an equal opportunity of demonstrating their knowledge. It can also be important to be able to get assistance with reading in literature.

## **Other disabilities**

There are people with other disabilities that can result in other requirements regarding premises, operations and information than the former requirements. Examples include people who are particularly susceptible to injury, for example caused by brittle bones or haemophilia, people who are especially vulnerable to injury, for example owing to epilepsy and people who are particularly sensitive to cold and heat. There are also people with sicknesses or conditions that can result in special requirements on the urban environment, for example needs for extra storage spaces. Examples of such illnesses are cystic fibrosis and kidney disease.

For people with disabilities owing to electromagnetic hypersensitivity, one precondition for accessibility of the physical environment is that the level of electrical and magnetic fields is low. It is also important that it is possible to gain access to information in a format that does not cause difficulties. A precondition for this is that information is available in printed form and not only in electronic form.

Another example is people who are particularly dependent on nutrition and medicine within specific time intervals. Accessibility to education, courses and conferences means then that the programme and teaching are structured so that there are regular breaks.

Many individuals have several disabilities and therefore special needs.

# Guidelines for making the operation accessible

**The State should set an example and show the way both as an employer and through having an operation that does not exclude anyone. Diversity should be the norm. Action is required to achieve this objective. In this section, a description is provided of how authorities can integrate the disability perspective and how they can make preparations to meet their target groups. A description is also provided of the requirements imposed on the authority as an employer.**

## **The disability perspective in planning, decisions and processes**

In order for the authority to become accessible, the disability perspective must be included in all planning and in all decisions and processes. Routines for this are required in many cases. For example, it may be necessary to clarify that the accessibility aspects should be considered when changes occur at premises or in conjunction with reorganisation. Routines may also be necessary to be able to deal with views on accessibility expressed by visitors or employees.

Other matters that need to be clarified are who is responsible for the disability perspective being included in planning of education, in buying and procurement, in conjunction with rebuilding and in care and maintenance.

Education on accessibility issues should comprise part of the authority's initiatives to enhance skills. Moreover, accessibility work should be coordinated within the efforts relating to work environment.

## Operational planning

In conjunction with the authority's operational planning, accessibility issues should be emphasised in the annual assignment description and activities that are then determined. A number of factors are important when the assignments are planned. This may for example involve analysis of the surrounding world, budget, operational changes and staffing. Here accessibility aspects in the wider sense must be integrated into the entire process.

Operational planning should provide workers with knowledge and understanding regarding what is prioritised – and accessibility issues placed in a context. Clients and citizens that make use of the authority's results and production see that accessibility issues have been integrated into the operation

to accelerate development towards a society where everyone can participate on equal terms, regardless of functional capacity.

## In-house training

Issues regarding accessibility can be worked into pre-existing courses such as introduction training. New training programmes may need to be produced, considering the requirements that become apparent when the action plan is to be implemented, for example a more general course for all staff regarding accessibility issues.

Targeted continuing education for key people and staff that have extensive contact with the public are other examples of initiatives that may be relevant for enhancing skills. Organisations of people with disability represent an important resource with planning and implementation of such training. Training should always be scheduled in accessible premises and arranged so that everyone can participate.

## Policy document

To ensure that the disability perspective has an impact within the operation, it should be worked into policy documents such as for example equality plans, diversity plans, competence resources plans and personnel policies. In a corresponding way, equality issues should be included in the action plan for accessibility.

## Buying and procurement

With procurement, making calls under framework contracts and engaging consultants – or buying everything from consumables to furniture and office equipment – requirements for accessibility must be imposed. These requirements can apply to accessibility to products and services, for example to knowledge on the part of those engaged. It is also important that demands on accessibility are imposed in conjunction with new building or renting new premises. Handisam's Guidelines can be used in various ways as a starting point for specifying requirements in procurement. Requirements can also be imposed through referring to a standard.

Large and coordinated procurements facilitate the production of products and services that are usable for all. One example is the framework contracts that the Swedish Administrative Development Agency (Verket för förvaltningsutveckling – Verva), implements within the IT/ICT area (information and communication technologies) where requirements on accessibility and usability have been gradually introduced.

Verva also supports how authorities can assess the usability of the products and services that are called on under framework contract. This is done through the guidance “Call on usability!”. New EU Directives on procurement stipulate, among other things, that the procuring department should determine technical specifications that take into account accessibility for people with disability.

## **PROHIBITION AGAINST DISCRIMINATION**

The Prohibition of Discrimination in Working Life of People with Disability Act (1999:132) applies to the entire labour market. The Act prohibits discrimination of both jobseekers and employees. The prohibition applies when the employer

- recruits
- decides on promotion or training for promotion
- decides on other training
- decides on occupational work experience
- applies pay or other employment conditions
- supervises or distributes work
- gives notice of termination, summarily dismisses, lays-off or implements other significant measure against an employee.

The prohibition also applies even when the employer does not intend to discriminate.

On appointment, promotion or in conjunction with education/training for promotion, an employer must implement reasonable support and adaptation measures to ensure that people with disability will be able to perform their work on equal terms. An employer who does not implement support and adaptation measures in these situations may be guilty of discrimination.

As of 1 December 2006 the Act also covers reasonable support and adaptation measures for people with disability under ongoing employment.

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## **Authorities as employers**

In order to create a labour market where people with disability can work at their workplace on the same conditions as other employees, it is necessary to have clear demands regarding the employer’s personnel and efforts relating to work environment. Through eliminating obstacles and thereby preventing discriminatory structures and procedures, long-term positive effects are created for all.

The authority as a workplace shall as far as possible correspond to the accessibility requirements that are in required generally for the operation. See

the section with Guidelines on accessible information (page 25) and Guidelines for accessible premises (page 37).

In addition to the general accessibility that applies for the operation's work premises, other individual employees may need special adaptation for their individual workplaces. According to the Work Environment Act, the employer should adapt the work conditions to the employee's individual capability. This may sometimes mean that the employer needs to acquire aids such as an enlargement program for the computer or a text telephone.

Flexible working hours and the opportunity to be able to work partly from home are other examples of adaptation measures. The underlying aim is not to create unnecessary obstacles to the work.

## **Personnel policy**

Public authorities should be places of work where employees with disability can work on equal terms. Personnel and the efforts relating to work environment determine whether this is possible. The issue involves how recruitment, promotion and in-house training are carried out and how the work environment is designed. It also relates to the authority's rehabilitation responsibility. The disability perspective must therefore be brought to the fore in the authority's various policy documents – such as in its personnel policy, diversity plan and work environment policy.

In addition to an overall assessment and continuous control of the work environment that an employer is obliged to carry out (under the Regulations for Systematic Environment Work, AFS 2001:1), there are also requirements for procedures for workplace adaptation and rehabilitation (AFS 1994:1, Section 10).

In order to prevent discrimination and create opportunities for people with disability in recruitment context, accessibility aspects should be taken into consideration in the competence resources management of the authority's provision of skills.



### **People with disability should be recruited on equal terms as others.**

This means that:

- Recruiters are skilled in non-discriminatory recruitment and selection methods.
- The composition of recruitment teams is as multi-faceted as possible.

- Advertisements and application procedures are formulated in such a way that all applicants regardless of functional capacity feel welcome to apply for the post.
- The applicants' merits are valued against the selection criteria.
- The interview situation should satisfy the requirement for accessibility.
- Possible support and adaptation measures are considered.

▶ **People with disability should be promoted on equal terms as others.**

This means that:

- Opportunities for promotion should be openly publicised.
- Informal routes for promotion should be avoided.
- The promotion procedure should be conducted fairly and consistently.
- Personnel with supervisory responsibility should be trained in how discrimination in connection with promotion is avoided.

▶ **It should be possible for people with disability to be able to participate in in-house training on equal terms with others**

This means for example that the courses are organised so that all participants can gain access to the content and that the course is held in accessible premises.

# Guidelines for making information accessible

**It should be possible for all people to be able to communicate with the authority and gain access to its information. This section describes what requirements are imposed within six areas: written information, website and e-services, film and TV/video, telephone calls, correspondence and messages and also meetings and conferences.**

## **Information in various ways**

The basis for information being accessible is that it is comprehensible. In order to make it comprehensible, clear and simple language must be used and the layout formulated so that it is easy for all readers.

When information is available in various forms (alternative formats), it reaches everyone who may be interested. This might for instance be a person with impaired vision, who needs larger print to be able to read. A person with reading and writing difficulties may prefer to have the text recorded on a cassette. If the text is translated into easy-to-read Swedish, a person with mental development disability can gain access to it.

The public's contact with the authority often takes place through meetings or via telephone. In order for as many people as possible to be able to communicate with the authority it is important to go through routines and enhance the knowledge of staff about the needs of various people. There are for example communications services that facilitate calls between people who use text telephones or videophones and people who use an ordinary telephone.

## **1. Written information**

Clear language and an easily comprehended layout make things easier for all readers. It is also important that the text is logically structured with summaries and explanations for words. It should be possible to get information material alternative formats.

### Accessible language

 **Language and structure should make it easier for the reader.**

This means that the authority should

- write in a clear and easily understood way
  - structure the text well and always start long documents with a short summary.
- 

## THE ADMINISTRATIVE PROCEDURE ACT AND THE LANGUAGE COUNCIL OF SWEDEN

The Administrative Procedure Act (Fvl) (1986:223) urges public employees to endeavour to express themselves in an easily understood manner. The Plain Swedish Group in within the Language Council of Sweden has among other things produced various models and tests to improve official language. For more information see the Language Council's website, [www.sprakradet.se](http://www.sprakradet.se).

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### Accessible layout

#### **Form design should provide the best possible readability.**

The layout significantly aids reading and understanding. When the authority prepares a new graphic profile, it is important to ensure that the profile contributes to the layout being accessible. A pretty and original layout does not need to conflict at all with good readability. Graphics advice and tips are available on the next page.

- Text flow: There should be a logical starting point for the reader, which is for example marked with a heading and/or a cut-in letter. Thereafter, it should be easy to follow the flow of the text through the entire printed material. It is also important to break up the text into smaller paragraphs with intervening headings.
- Typeface: The choice between a Roman style (typeface with serifs, heels) and a linear style depends on, among other things, the situation in which the text occurs and the quality of the printout. In lengthy text, Roman style is often easier to read. It is important that the typeface is simple and clear and that the contrast is good. **Bold type** is better for marking text than *italics* or CAPITALS.
- Font size: Choose a sufficiently large font size, but not too large. For running text, for example, 11 or 12 point is often appropriate – depending on what typeface is used.

- Line spacing: Line spacing is usually generally 2 points larger than the font size up to 18 point, for example 12 point font size to 14 point line spacing.
- Line length: Short lines are easier to comprehend than long lines, but they should not be too short. Line lengths between 6 to 13 cm are pleasant to read.
- Contrast and colour: When colour is used, the choice of colour should enhance readability. ‘Tint blocks’ should not be used since many people with weak vision find that it makes it more difficult or impossible to read. The same applies to patterned backgrounds.
- Images: If images are used they should have good definition and contrast and also not be too detailed. Text on images should be avoided and above all else there should never have running text on an image.
- Paper quality: Use matt paper since glossy paper can dazzle the reader. Also make sure to choose a paper with high opacity (density), so that the print on one page cannot be seen on the reverse side.

Most of the items above represent summaries based on the publication *Text som fler kan läsa* (Text that more can read) from The Swedish Association of the Visually Impaired (SRF). This entire document is available on [www.srfriks.org](http://www.srfriks.org), under the menu ‘Informationsmaterial’.

## Alternative formats

### **It should be possible to obtain printed information in different formats and versions, ‘alternative formats’.**

This requirement means that the authority

- when requested produces the desired material in an easy-to-read version, recorded on a cassette, in Daisy format, in Braille and large print and that it should be possible to order the material electronically, in Word or accessible PDF
- has routines and a clear distribution of responsibility for dealing with the orders and also that the orders are dealt with within a reasonable time
- offers basic information material about the authority and information of central social interest in an easy-to-read version, recorded on a cassette and/or in Daisy format, recorded in sign language and electronically in Word or accessible PDF.

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## **ALTERNATIVE FORMATS**

### **Easy-to-read Swedish**

Text translated into easy-to-read Swedish is simple and has ordinary and concrete words. The sentences are often short and the layout spacious. The Centre for Easy-to-Read is a foundation that among other things translates text into easy-to-read Swedish. More information: [www.lattlast.se](http://www.lattlast.se).

### **Braille**

The text is translated into Braille. This format is also called Braille, after its French originator.

### **Daisy**

The text is read onto CD-ROM disks with good search capacity. It is necessary to have a computer with a special program or special Daisy player (audiobook player) in order to gain access to the information. Daisy (Digital Accessible Information SYstem) is a standard and the system can be used for audiobooks, talking newspapers and other recorded text.

The greatest advantage with the Daisy format is that the talking book is provided with a structure in which it is easy to search and find for the reader even if the material is substantial. Daisy is also available in versions where the information can be presented in several different ways with both audio and text. More information: <http://se.daisy.org>.

### **Audio cassette**

The text is recorded on a cassette.

### **Sign language**

The text is translated to sign language and filmed. The information can be recorded on video cassette, DVD or shown on a website. Many sign language users need to obtain information in sign language as it is often their first language. People who are deaf since birth or with very severely reduced hearing are called 'deaf since infancy' and may have Swedish sign language as a first language (native language). In school they learn to write Swedish, but this is a second language for them.

### **Large print**

When information is presented in large print, the font size is greater than it usually is, approximately 14 point.


### **Word or accessible PDF**

A visually impaired or blind person may sometimes prefer to have a document electronically in order to, with their own aid, be able to read it on the computer. An 'accessible PDF file' or a Word file can in such cases replace an audio cassette or a document in Braille. PDF files may be accessible to everybody, provided they are set up in the right way. In an accessible PDF file, for instance headings, running text and

images are stated. The reading order, that is to say the sequence in which the text should be read, is also defined.

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Information about alternative formats.

 **The authority should provide information about the availability of the alternative formats and that these can be ordered.**


This requirement means that the authority should

- provide information about which information material is available in alternative formats, and also that the formats that are not being produced are possible to obtain on order
- specify in all printed material that it is possible to order it in an alternative format. Basic information material in alternative formats, for example in easy-to-read Swedish and in sign language, can be used in parallel with the website. The same applies to the electronic formats.

## **2. Website and e-services**

If a website is accessible, each user can adapt the presentation of the content according to their individual needs. The content and the structure are not changed.

Technology, structure and language

 **It should be possible for people with disability to be able to use the authority's website, Intranet and e-services.**

One way of ensuring accessibility is that the authority's website complies with Vägledningen för 24-timmarswebben (Guidance for the 24-hour Web) (2.0 or later version). The website should be technically properly built up, the structure clear and easy to comprehend, and the language plain and clear. Every section of the website should start with a brief summary in simple language. Basic information about the authority should also be available in alternative formats.

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## ACCESSIBLE WEBSITES

There are already international guidelines for how a website should be structured. WAI's Guidelines have been produced so that the Internet should be accessible to all people regardless of functional capacity. These relate to both how a website should be build and how the content should be designed as regards language, layout and structure.

The EU's Member States have also agreed that public websites should comply with WAI's Guidelines, both as regards content and tools.

WAI's Guidelines have been worked into the *Vägledningen for 24-timmarswebben* (Guidance for the 24-hour Web), which has been produced by the Swedish Agency for Public Management and approved by Nämnden för elektronisk förvaltning (Government Electronic Administration Board). This means that the Government services should build their websites according to these Guidelines. As of 2006, Verva is responsible for this guidance and its development. More information is available on [www.verva.se](http://www.verva.se).

*Vägledningen for 24-timmarswebben* (Guidance for the 24-hour Web) also deals with the requirements that can be imposed on publication tools for them to be able to support a website production in accordance with the concept Design for All. This guidance thereby complies with WAI's applicable Guidelines for publication tools. Verva measures quarterly the extent to which public websites comply with the technical recommendations of the Guidance for the 24-hour Web.

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## 3. Film, television and video

If the authority for example produces an information film, it is also important that people who are visually impaired, hearing impaired and deaf can gain access to the film. The same requirements apply if the authority, for example, makes use of television broadcasts.

Text, audio and images



**It should be possible for people with disability to be able to gain access to the authority's information on film, multimedia, television or video.**

Conditions for this requirement are, among other things

- that all speech is subtitled
  - that sounds other than speech are reproduced in text in another colour or an equivalent solution is offered
  - that a subtitling technology which includes the subtitle is used if the user records/copies the film
  - that a version with Swedish sign language is produced, which can be broadcast at a different time from the original version or on a different channel, or that corresponding information is offered in another way
  - that an audio description version is produced or that corresponding information is offered in another way.
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## **AUDIO DESCRIPTION**

Audio description means that information communicated by the film exclusively by means of images is put into words or explained. This may, for example, be a diagram, which in the audio description version is described verbally for those who find it difficult to see, or a film sequence where the environment or course of events is described.

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Some of the requirements are easier to satisfy with digital technology than with the older analogue technology. Digital technology also provides the user with more opportunities to acquaint themselves with the content of targeted information. This should be taken into consideration when an authority decides to produce a video film.

## **4. Telephone calls**

The public's contact with the authorities often takes place by telephone. To enable this to function for everyone, it should be possible to call in different ways, for example, by text telephone. If an authority uses a 'voice response system', this must also satisfy certain criteria.

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## **TECHNOLOGIES AND SERVICES**

### **Taltjänst (Speech service)**

The interpreter service is a service provided by the county council. This facilitates

contact between people with impaired speech, voice or linguistic capacity and others. Taltjänst offers various forms of speech, reading and writing support both on-site and via telephone. Taltjänst interpreters can accompany a person in connection with various kinds of contacts, for example visits to authorities. With telephone calls via Taltjänst, the switchboard operator assists by, among other things, introducing a call and, if necessary, clarifying what the person means. Taltjänst is reached at the county council in during office hours.

### **TeleTal (Speech interpretation service)**

This telephone service is offered by the National Post and Telecom Agency (PTS) and provides speech support during telephone calls. TeleTal is intended for people with impaired speech, voice and linguistic capacity and for those who wish to contact someone who uses the service. A characteristic feature of TeleTal calls is that three parties participate in the call. The third the party is an interpreter who interprets the call for a person with impaired linguistic capacity. TeleTal also assists people with reading and writing difficulties to write and read notes in connection with telephone calls. TeleTal can also provide memory support through giving reminders of what is important to say during a call. TeleTal is without charge and can be reached on 020-22 1144. More information: [www.teletal.se](http://www.teletal.se).

### **Text telephony**

With a text telephone the user writes instead of speaking. Text is shown to the recipient at the same time as the caller writes. It is primarily people who are deaf, hearing impaired and people with speech impediments who use text telephones. It is possible to contact each other through special telephones that have keyboards. For people who communicate via a text telephone to be able to contact businesses, authorities and private individuals with an ordinary telephone, there is the Text telephony service. The Relay Service for Text Telephony relays word by word calls between users of ordinary telephones and text telephones. The switchboard operator reformulates speech into text and vice versa. The Relay Service for Text Telephony can be reached on telephone number 90 160 (from text telephone) or 90 165 (from voice telephone). It is also possible to reach the Service via [www.texttelefoni.se](http://www.texttelefoni.se). More information: [www.eniro118118.se](http://www.eniro118118.se), under the menu 'Tjänster'.

### **Video telephony**

A videophone facilitates communication with sign language instead of speech. The signing is shown to the recipient at the same time as the caller writes or signs. The recipient can intervene at any time whatsoever in the course of the call. 3G telephones have made it simpler to communicate via telephone with sign language, as it is possible to talk through moving images via these mobile telephones. The national Relay Service for Video Telephony is a service that facilitates communication between people who are deaf/hearing impaired and those who are able to hear. It offers two services, relay and distance interpretation. The Relay Service relays telephone calls between users of ordinary telephones and users of videophones/3G telephones. The switchboard operator reformulates sign language into spoken Swedish and vice versa. Distance interpretation can be used when a person who speaks sign language needs an interpreter. This may for example be in conjunction with some business, a visit to a bank or a visit to an authority. The person who signs can then call the video telephony

service via a videophone/3G telephone and ask the interpreter to translate for the recipient. The Relay Service for Text Telephony can be reached on 020-28 00 20 (via voice telephone). The Relay Service can be reached from a videophone via ISDN:020 28 00 10 or SIP:tolk@tolk.sip.nu. More information: [www.bildtelefoni.net](http://www.bildtelefoni.net).

### **Total Conversation**

With Total Conversation it is possible to use speech, written text and sign language simultaneously. This means that it is possible for someone to choose a means of communication that the recipient understands. For example, a spoken answer through the telephone handset can be lip-read at the same moment on a video display terminal and additions can be made by text. With Total Conversation, communication between people who are deaf and those who are able to hear is significantly improved. With Total Conversation equipment in a computer it is possible to conduct calls with all fixed voice, text and videophones, but of course subject to the limitations that these means of communication have. Equipment for Total Conversation that complies with applicable standards can replace fixed voice, text and videophones and result in increased quality. There is software and supplementary equipment that enables computers to be used as a text telephone, alternatively as equipment for Total Conversation.

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## Technologies and services

### **It should be possible for people with disability to communicate with the authorities via telephone.**

With modern technical systems and services this means

- that the staff know how the communications services Taltjänst and TeleTal function and also how they can be contacted
- that the staff know how the Relay Service for Text Telephony and Video Telephony function, how they can be contacted and how distance interpretation functions
- that the staff are informed about how a text telephone or equipment for Total Conversation functions if the authority has it. It is also important that key people – switchboard operators, receptionists and others who receive many external telephone calls – receive training in using text telephones, and equipment for Total Conversation.

There is no requirement that authorities should have their own text telephone or videophone. However, authorities with many calls to citizens should in time

improve communication through Total Conversation solutions. Read more about technology and services in the fact box on the preceding page.

## Voice response system

**If a voice response system is used, it should function for people with disability.**


It is therefore important

- that the menu is limited to a small number of choices, maximum four
- that personal contact with a switchboard operator is made one of the choices in the menu
- that there is call diversion to a switchboard operator if no choice is made within a certain period, approximately 15 seconds
- that text telephone users are offered the same service as people who use ordinary telephones.

## 5. Correspondence and communications

In order to ensure that as many people as possible can engage in written correspondence with the authority, it is important that it is possible to communicate in several different ways.

### Contact details and alternative formats

 **It should be possible for people with disability to communicate with the authorities via letter, fax and e-mail.**

Conditions for accessible correspondence are

- that the authority, if necessary, produces written communications and replies in alternative formats
- that the postal address, telephone number, text telephone number, fax number, and e-mail address are stated when address and contact details distributed in, for example outgoing communications, letters and information material
- that the e-mail address for every particular type of matter is stated when necessary.

### Standard forms

 **It should be possible for standard forms to be used by people with disability.**

People with disability should as far as possible be able to deal with standard forms independently, for example applications and tax returns via the Internet. The preconditions for this are

- that standard forms are logically structured and have simple and comprehensible language
- that standard forms are pre-completed as far as this is possible (in those cases where the details are already known)
- that support is offered to those who need assistance with completing the authority's standard forms
- that the layout in printed standard forms is clear and the contrast good
- that standard forms are available in alternative formats
- that electronic standard forms comply with the Guidelines contained in the section about Websites on page 29.

## 6. Meetings and conferences

Conferences and meetings should be held in premises that are accessible to all. All participants, both speakers and the audience, should have the opportunity to participate on equal terms. This applies both to small meetings between a few people and in connection with major conferences.

Invitations, premises, food and documentation

 **Conferences and meetings should be arranged so that people with disability can attend and participate.**

Preconditions for accessible meetings and conferences are

- that the invitation inquires whether there is a need for sign language interpretation, audio description, induction loop (or other facilities with corresponding function), special dietary requirements and documentation from the conference in alternative formats
- that sign language interpretation, audio description, induction loop and also special dietary requirements are provided if necessary and if desired
- that the conference invitation contains information that participants should avoid perfume and other scented hygiene products
- that the conference premises, including group rooms and break rooms, should be accessible according to the Guidelines applicable to premises (see Assembly halls and Meeting rooms, pages 54 to 56).
- that in the case of overnight stays there are accessible hotel rooms

- that the programme is organised so that breaks are scheduled at appropriate times – a guide may be a break every 45 minutes
- that speakers/lecturers are informed that it is important that times are adhered to, to speak directly into the microphone and to speak clearly and that it is important that pictures are described and that text on overhead projections or in PowerPoint presentations is read
- that if refreshments are served, information is provided about exactly what the refreshments contain
- that documentation and information in alternative formats is provided at the same time as other documentation, if this is requested in the application.

# Guidelines for making the premises accessible

**To make premises accessible means that people with disability should be able to visit an authority – and both gain access to and participate in the operations there. The premises should also function as a workplace for people with disability. In order for this to be possible, the building, design of the rooms, and fittings and equipment should be accessible and usable. This section describes requirements and guidelines for achieving this. Comparisons are also provided with the building legislation.**

## **Requirements of the building legislation**

Government authorities should function as examples. No one should be excluded from the authority's activities. This justifies greater demands being imposed on public authority premises – public premises and work premises – than the minimum requirements under the building legislation. For existing premises, this involves more extensive requirements than those that can be imposed according law regarding simply rectified obstacles.

Greater demands are also imposed regarding a number of items for new building under the Guidelines than as prescribed by the National Board of Housing, Building and Planning's Building Regulations (BBR), for example as regards the gradient of ramps, lift dimensions and the distance between a parking place and the entrance. Requirements are also imposed in the case of new buildings on all entrances to a building being made accessible .

The fact boxes – on the following pages – contain brief extracts from the National Board of Housing, Building and Planning's Regulations and General Advice (BBR, BFS 1993:57 with amendments up to and including 2006:12, HIN 1 and ALM 1) and in some cases from the Swedish Work Environment Authority's General Advice. On many points the requirements according to the Guidelines correspond with those referred to in the National Board of Housing, Building and Planning's Regulations and General Advice. Therefore, only the items that are considered most interesting have been presented.

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## **LAWS AND RULES**

### **New buildings and modification**

The building legislation imposes requirements on accessibility in the case of new

building and in the case of alterations to buildings. See the Ordinance on Technical Requirements for Construction Works, etc. (SFS 1994:1215), Section 12, Section 14 and Section 15. The Implementation Regulations and General Advice are contained in BBR<sup>1</sup>, BÄR<sup>2</sup> and ALM 1<sup>3</sup>.

### **Existing environments**

As regards existing environments, PBL<sup>4</sup>, Chapter 17, Section 21a imposes retroactive requirements. However, these requirements only refer to simply rectified obstacles in existing public premises and at public places. The Implementation Regulations and General Advice are contained in HIN 1.<sup>5</sup>

In existing work premises, requirements for measures can also be imposed under the Work Environment Act<sup>6</sup>, that is to say regardless of whether or not new or rebuilding work is involved. The Implementation Regulations and General Advice are contained in the Swedish Work Environment Authority's Regulations AFS.<sup>7</sup> The Swedish Work Environment Authority can issue prohibitions and impose orders. A prohibition means that certain items of work may not be performed before the work environment has been changed in accordance with instructions issued by the Authority. An employer may be compelled to make certain changes or rebuild something to improve the work environment, such as improving the ventilation.

Requirements for individual adaptation in existing buildings can also be imposed under two statutes regarding the prohibition of discrimination.

According to the Prohibition of Discrimination in Working Life of People with Disability Act<sup>8</sup>, an employer is obliged to provide a person with disability with

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<sup>1</sup> BBR – The National Board of Housing, Building and Planning's Building Regulations (1993:57).

<sup>2</sup> BÄR – The National Board of Housing, Building and Planning's General Advice on Alterations to Buildings (1996:4 amended 2004:1).

<sup>3</sup> ALM 1 – The National Board of Housing, Building and Planning's Regulations and General Advice concerning accessibility and serviceability to persons with mobility or orientation impairment in public places and in areas for structures other than buildings (BFS 2004:15).

<sup>4</sup> PBL – The Planning and Building Act (1987:10).

<sup>5</sup> HIN 1 – The National Board of Housing, Building and Planning's Regulations and General Advice on the elimination of simply rectified impediments to and in premises to which the public has access and in public places (BFS 2003:19).

<sup>6</sup> The Work Environment Act (1977:1160) and the Work Environment Ordinance (1977:1166).

<sup>7</sup> See for example Design of Workplaces (AFS 2000:42).

<sup>8</sup> The Prohibition of Discrimination in Working Life of People with Disability Act (1999:132).

conditions similar to those that others have. This may involve certain measures to adapt the physical environment having to be carried out, provided that this would be reasonable.

For universities/colleges, requirements for measures in existing buildings can be imposed under the Equal Treatment of Students at Universities Act.<sup>9</sup> Premises should be made accessible and usable to provide a situation for people with disability, who are accepted on or already attending courses, that is similar to what is available for people without disability, provided that this would be reasonable.

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## **Accessibility in existing buildings**

Premises located in older buildings often have great deficiencies from the accessibility perspective, yet at the same time may be of significant architectural and cultural historic value. Opportunities for extensive reconstruction are especially restricted for buildings that have been declared cultural heritage properties. Special conservation rules specify how the building may not be modified (See the Heritage Conservation Act (1988:950) and the Cultural Heritage Public Buildings, etc. Ordinance (1988:1229)). A special permit procedure is required for modifications that are restricted by these regulations.

However, this does not mean that an authority can refrain from making a building accessible. There are many examples showing that it is possible to conserve cultural historic and architectural values in an existing building while at the same time making it accessible. The aim should always be to satisfy the requirements prescribed by the Guidelines, even if certain deviations may be acceptable in existing buildings. Regard must be taken in the individual case to cultural historic, environmental and architectural values and similarly to building structural preconditions and safety aspects. Measures must be implemented carefully so as to conserve the character and value of the building.

If an authority has inaccessible premises, certain activities, such as meetings, may temporarily be arranged outside the authority's own premises. The premises can also be arranged so that the most accessible parts can be used for those activities where accessible premises are considered to be most important. However, this should only be a short-term alternative such as pending a current lease expiring.

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<sup>9</sup> The Equal Treatment of Students at Universities Act (2001:1286).

The main principle is consequently that, in the first instance, the premises where the operation is conducted should be made accessible. If this is not possible, the authority should deliberate on moving the operation when the current lease expires. At the same time, there may be some value in certain government operations being located in properties with a high cultural historic value, even if it is not possible to make the entire building accessible. Exceptionally, it may for instance be acceptable for a small proportion of the office rooms to remain inaccessible in the long term. However, the authority always has a responsibility for people with disability not being excluded, but have the possibility of both visiting and working at the authority.

When the authority changes premises, the opportunity should be taken to live up to the Guidelines. The authority should select premises with good accessibility or ensure that the premises are rectified before it moves in, so that good accessibility is achieved.

## **Practical application of the Guidelines for premises**

These Guidelines apply in the first instance to those premises that are used for the authority's own operation, but should also be applied to any buildings that the authority manages or supervises.

The Guidelines must be complied with in order to satisfy the requirements of the Ordinance. However, when applying the requirements, a balance may need to be drawn in relation to other interests, such as for example safety interests and work environment issues. Which kind of operation is conducted in the premises can also affect how the Guidelines should be applied.

In existing buildings, regard should also be taken to cultural historic, environmental and architectural values and similarly to building structural preconditions. As an example, mention may be made that existing colouring, existing surface coverings/finishes, existing door handles and locks may be acceptable if this is part of the cultural historic value and any alteration would involve marring it. An assessment must always be made in the individual case.

In some cases it is specified that a lower requirement can be acceptable for an existing design (for example measurements). This lower requirement corresponds with the minimum requirement imposed according to the National Board of Housing, Building and Planning's Building Regulations (BBR). This means that an existing design that satisfies BBR's minimum requirement may be acceptable without rectification. But if the building is rebuilt, or measures that affect the relevant part of the building are implemented, the requirements of the Guidelines should be applied as far as possible considering the cultural historic, environment and architectural values – and considering the building's structural preconditions and safety aspects. For example, an existing ramp with

a gradient of 1:12 may be acceptable (satisfies BBR's minimum requirements). But if the ramp is rebuilt or a new ramp is arranged, the gradient shall not exceed 1:20 if this is technically possible.

By implementing accessibility measures in conjunction with other modification work, investment costs can often be substantially reduced. For example, the accessibility issues can be coordinated with safety issues and evacuation issues. The consistent use of the 'while we're at it principle' is another efficient way of reducing costs. In conjunction with rearrangement of the premises and in the case of maintenance and renovation, the opportunity should always be taken to improve accessibility. If an inventory has not already been conducted, the spaces involved should always be inspected from the accessibility perspective before the renovation commences.

The fact that individual adaptation measures are implemented when the need arises, for example if a person with disability is employed or accepted on a course, should only be viewed as a supplement. A plan for how the general accessibility should be improved and which measures need to be implemented is always required. Such a plan for measures is also a precondition for the 'while we're at it principle' to function.


To assist in this, Handisam has prepared an inventory form which can be adapted according to the method used by the person conducting the inventory and the scope of the inventory. More information is available on [www.handisam.se](http://www.handisam.se). On the following pages the requirements and recommendations in within three areas are described:

- Building, pages 41 to 69.
- Fittings and equipment, pages 70 to 79.
- Maintenance and routines, pages 79 to 81.

## 1. Building

It should be possible for people with disability to get to, into and move around within the building and to use it. This chapter also deals with supplementary information for the design of certain rooms and certain details in buildings or in the immediately surrounding outdoor environment.

General: TO THE ENTRANCE

 **It should be possible for people with disability to get to the entrance.**

Preconditions for this requirement include

- that there is an accessible walkway between the entrances of the building and the arrival point, parking place, public walkway and stop
- that there is an arrival point and also a sufficient number of reserved parking places for visitors with disability (preferably within 10 m and at most 25 m walking distance from the entrance)
- that, if necessary, designated parking spaces are arranged for employees with disability (preferably within 10 m and at most 25 m walking distance from the entrance)
- that the spaces are designed so that they function for people with disability, that is to say that they are wide enough (at least 3.6 m, at least some space at least 5.0 m). They should also have a fixed, even and non-slip surface covering with a gradient of at most 1:50 both laterally and lengthwise
- that it is possible to sit within visible distance of a taxi, municipal transport service, etc. while also being protected from the wind and weather
- that the arrival point and parking spaces designated for people with disability are clearly signposted.

The arrival point and parking places cannot always be arranged on the site. The authority should then work to ensure that the municipality arranges an arrival point and designated parking places for people with disability on municipal land and that walkways from these to the entrance are made accessible.

## General: THROUGH THE ENTRANCE

 **It should be possible for all entrances to be used by people with disability.**

Preconditions for this requirement include

- that it is possible to get in through the entrance without any stairs or steps (in the case of new buildings, the entrance should be without changes in level)
- that any stairs, ramp or lift is designed so that it functions as well as possible for people with disability (see also Lifts, Stairs and Ramps, pages 63 to 67)
- that the surface in front of the entrance door is flat, non-slip and firm, with a maximum gradient of 1:50 and large enough so that a wheelchair can be manoeuvred without getting too close to a downward flight of stairs (approximately 40 to 50 cm between the manoeuvring surface and the downward flight of stairs)
- that a place designated for smokers (if there is such a place) is located at least 15 m from the entrance, can be reached by a person using a wheelchair

and is placed where it is not necessary to pass it when approaching the entrance

- that plants that can cause problems for people with allergies or hypersensitivity are not planted close to the entrance
- that the entrance door can be opened, passed through and closed by people with disability (see also Doors, page 68)
- that manoeuvring devices such as for example door-entry phones, doorbells, card readers and door code panels are positioned and designed so that they can be used by people with disability (see also the chapter Fittings and equipment, from page 70)
- that the space inside the entrance door (porch) allows passage for a person using a wheelchair
- that the entrance is designed so that even people with impaired vision can make their way to it and use it in a safe way (see also Daylight and illumination, Route indication systems and Safe mobility, from page 59)
- that there is a clear and well-placed sign that is visible from both the walkway and the vehicular way showing the street number and the authority's name (see also Signs, page 58).

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 3:122, it should be possible for at least one walkway between a building entrance and parking area, an arrival point for vehicles, open spaces and public walkways to be used by a person with impaired mobility or orientation capacity. It should be possible to arrange an arrival point/parking place for vehicles of disabled people within 25 m walking distance of such an (accessible) entrance.

At public places where there are parking places for people with impaired mobility who have a special permit, at least one place should be designed so that it provides enough space for a wheelchair to be loaded in from the side of a vehicle. The width of such a place should be 5.0 m when the place is not located next to a clear area. According to HIN, absence of such a place can be viewed as an obstacle that is simple to rectify.

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► **If the main entrance cannot be used, the entrance that can be used should provide the same conditions.**

A precondition for this requirement is that the alternative entrance

- is clearly signposted, including route direction signs from the main entrance and from arrival points and parking places
- is, if possible, located close to and clearly visible from the main entrance
- leads into the same entrance hall as the main entrance or at least leads there as directly as possible
- satisfies the same requirements for a welcoming and attractive design as the main entrance
- is open at the same times as the main entrance and can be used without staff having to be summoned, alternatively is furnished with a video door-entry phone to a manned reception.

The point of departure should always be that all entrances to the building shall be accessible. However, in existing buildings it may be acceptable that all entrances are not accessible. The most important aspect is that the main entrance is accessible. If the main entrance cannot be made accessible, the possibility of moving the main entrance to another entrance that can be made accessible should be investigated.

An alternative entrance may be acceptable in buildings that are of cultural historic value where it is considered impossible either to make a main entrance accessible for people with impaired mobility or to move the main entrance. A precondition for this is that the requirements specified for such an entrance are satisfied.

Even if the main entrance cannot be used by people using wheelchairs, it should be designed so that it functions well, for example for people with impaired vision.

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**


According to BBR 3:122, at least one entrance door to a building should be accessible for people with impaired mobility or orientation capacity, and should be located and designed so that it can be used by these people. According to BBR 3:123, it should be possible for entrances and communications areas to be used by people with impaired

mobility or orientation capacity, and they should have sufficient manoeuvring space for a wheelchair.

Movement routes should be designed so that people in wheelchairs can get around without assistance. According to HIN, obstacles in the form of small changes in level, heavy doors, improperly placed and designed manoeuvring devices, inadequate contrast marking and warning marks, inadequate signage, inadequate or blinding illumination and absence of or inadequate design of balance support may be obstacles that are simple to rectify. Exterior doors are stated to be strategic points that should be marked with contrasting tones.

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## General: INSIDE THE BUILDING

 **It should be possible for people with impaired mobility capacity to easily reach and use all rooms and parts of rooms.**

Preconditions for this requirement include

- that it is possible to get to all rooms and into all rooms without having to cross or use stairs or steps
- that any stairs, ramp or lift is designed so that it functions as well as possible for people with disability (see also Lifts, Stairs and Ramps, pages 63 to 67)
- that it is possible to turn with a wheelchair in all rooms, if necessary after rearranging the furniture (a 1.5 metre diameter circle is the dimension used to assess accessibility)
- that all corridors and other movement routes allow convenient passage and the ability to turn with a wheelchair, namely, are at least 1.5 m wide (existing width 1.3 m, which corresponds to the minimum requirement of BBR, is acceptable)
- that short passages, for example between pillars and walls, permit convenient passage, namely, are at least 0.9 m (existing width 0.8 m, which corresponds to the minimum requirement of BBR, is acceptable)
- that the floor is firm, without edges and is neither uneven nor slippery
- that doors can be opened, passed through and closed by a person using a wheelchair or walker (see also Doors, page 68)
- that it is possible to move around safely, for example there must be a ‘safety zone’ (approximately 40 to 50 cm wide) between space that is needed for manoeuvring of wheelchairs and downward flights of stairs.


See also the chapter Fittings and equipment, page 70, regarding fittings and equipment and manoeuvring devices.

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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 3:123, it should be possible for communications areas to be used by people with impaired mobility or orientation capacity, and they should have sufficient manoeuvring space for a wheelchair. Movement routes should be designed so that people in wheelchairs can get around without assistance. A 1.5 metre diameter circle is the dimension of an appropriate turning area when assessing accessibility for wheelchairs for limited outdoor use (according to advice contained in BBR 3:121). Corridors and the like should be at least 1.3 m wide. In limited parts, such as beside pillars, this width may be reduced to 0.80 m (according to advice contained in BBR 3:123). According to HIN, small changes in level, heavy doors, improperly placed and designed manoeuvring devices and absence of or inadequate design of balance support may be obstacles that are simple to rectify.

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 **It should be possible for people with impaired orientation capacity to move around independently and safely to all rooms and to parts of rooms and be able to use them.**

The possibility of independent movement to strategic points such as the reception and lifts is most important. The design should also facilitate independent movement in buildings overall for people who often use the building and consequently are somewhat familiar with the premises.

It is very difficult for people with severely impaired vision to move around independently in an unfamiliar building on the first visit. The possibility of a personal escort may therefore be necessary.

Independent movement for people with impaired orientation capacity can be facilitated in different ways. As a rule, it is necessary that several factors interact, for example

- that the layout is comprehensible, simple and logical
- that the parts of the building and fittings that are important to be able to get to are uniformly and consistently positioned
- that the form and limitations of the room as well as its fittings are clearly distinguishable, for example by
  - a contrast between walls, skirting boards or a frieze on the floor
  - a contrast between fittings and the background

- avoiding the following: high gloss/shiny colours and shiny material so as not to create confusing reflections, flooring with striking patterns that do not provide information (such as indicating a route marker) and large mirrors and reflective surfaces that make the shape of the room unclear
- that strategic points are marked, for example that there is a contrast between doors and walls and that there is a contrast between other important strategic points and the background
- that the premises has good lighting conditions (see also Daylight and illumination, page 59)
- that the noise environment is good (to enable assessments of how the environment is designed and make it possible to identify sounds)
- that the route indication system, including signs, is uniform, well thought through, consistent and designed so that it can be understood by people with disability (see also Route indication system, page 60)
- that there are no obstacles that can constitute a hazard or that they are clearly marked with warnings (see also Safe mobility, page 61).

See the chapter Fittings and equipment, page 70, regarding fittings and equipment and manoeuvring devices. Contrast and contrast marking refers here primarily to tone contrast of at least 0.40 according to NCS (Natural Color System). Contrast marking can also be achieved by marking with material that deviates in structure from surrounding material.

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 3:123, it should be possible for communications areas to be used by people with impaired orientation capacity. There are also requirements imposed on safety, for example that large glass surfaces should be clearly demarcated. According to HIN, improperly placed and designed manoeuvring devices, inadequate contrast marking and warning marks, inadequate signage, inadequate or blinding illumination and absence of or inadequate design of balance support may be obstacles that are simple to rectify. HIN states that a tone contrast of at least 0.40 NCS makes it possible for many with weak vision to discern markings.

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**The premises should have good air quality. It should be possible for people with allergies or hypersensitivity to also be able to use them.**

Preconditions for this requirement include

- that the ventilation system has a satisfactory air feed appropriate for the number of people occupying the premises
- that materials that may cause problems for people with allergies are avoided, for example, that upholstery material (furniture and textiles) and the room's surface covering/finish is low emission (that is to say emits low levels of gases and particles)
- that the premises, including the floors, are easily cleaned.

Observe the dimension values for ventilation contained in the National Board of Housing, Building and Planning's Building Regulations and in the Swedish Work Environment Authority's Regulations. In public spaces, avoid using untreated fabric as wall material and fitted carpets that are difficult to keep clean. If carpets are used, a type should be chosen that is easy to keep clean and that is removable. Air quality is to a large extent dependent on routines and instructions for use of the premises, for example, regarding what plants are permitted in premises. Read more in the chapter Maintenance and routines, page 79.

 **The noise environment should be such that people with reduced hearing are not prevented from gaining access to, and participating in the operations.**

This is particularly important in meeting and assembly rooms, as well as in lunchrooms, dining rooms, etc. A good noise environment is also important for other groups – such as people with impaired vision or impaired cognitive capacity. Preconditions for a good noise environment are

- that noise/din and other disruptive sounds, for example from installations, are eliminated or dampened as far as possible
- that dampening material and reflective material are distributed on wall and ceiling areas so that the acoustics of the room are appropriate for the activities conducted in the premises
- that the floor covering and furniture design do not amplify undesirable noise such as noise from steps and scraping sounds when chairs are moved
- that a supplementary induction loop system is available where this is needed (for example in conference rooms, meeting rooms and at the reception).

In the case of new buildings, a minimum of Noise Class B in SS 02 52 68

‘Acoustics – Measurement of Sound Insulation in Buildings – Care premises, teaching premises, day nurseries and after-school leisure homes, offices and hotels’ (2001 edition), should be achieved. The aim should be Noise Class A for reverberation time in premises such as assembly halls, lecture halls, group rooms and similar spaces where it is particularly important to be able to hear well. In existing buildings, a noise environment that satisfies the requirements imposed by the National Board of Housing, Building and Planning’s Building Regulations may be acceptable. However, in conjunction with reconstruction, improvement in the noise environment should always be considered.

Sound-dampening absorbents on ceilings, textiles and absorbents on walls and floor coverings that dampen sound – together with well-insulated office machinery and fan systems – make it easier for people with reduced hearing to understand speech. If textile carpets are used, they should be of a type that is easy to keep clean and can be easily removed.

► **Electrical and magnetic fields should be limited as far as possible.**

Limitation of the fields may mean, for example

- that new electrical installations and new buildings are placed and designed in accordance with the precautionary principle and that attempts should be made to reduce such fields in existing buildings in accordance with the precautionary principle
- that also in new buildings, and in the longer term also in existing buildings, there are at least some rooms or zones where the fields can be further reduced temporarily.

Examples of solutions for limiting magnetic fields are: shielded cables, electrical distribution boxes placed outside the building, five-wire systems, sealed installation spaces concentrated in certain zones, etc. Electrical installations can also be shielded from magnetic tension fields by being fitted with aluminium-sheet walls, ceilings and floors. The fields can be temporarily reduced by using ordinary light bulbs instead of fluorescent tube illumination and low-energy light bulbs, by turning off mobile telephones and also by wireless telephones (DECT telephones) that emit high levels of radiation not being found in the premises. Premises with induction loops should be divided into sections so that it is possible to turn these off in certain parts of the room.

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## **THE PRECAUTIONARY PRINCIPLE REGARDING LOW-FREQUENCY ELECTRICAL AND MAGNETIC FIELDS**

In 1996, the former National Board of Occupational Safety and Health (AFS), the

National Board of Housing, Building and Planning, the National Electrical Safety Board, the National Board of Health and Welfare and the Swedish Radiation Protection Authority (SSI) issued a Guidance for decision-makers. It states there: If measures that generally reduce exposure can be implemented at reasonable costs and other consequences, the aim should be to reduce fields that deviate substantially from that considered to be normal in the environment in question. As regards new electrical installations and buildings, the aim as early as the planning stage should be to design and position them to limit exposure.

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▶ **Premises should convey a calm, welcoming and harmonious impression.**

Preconditions for this are, among other things, that it is possible to have privacy and rest, for example, by having places to sit along long walkways, while waiting when visiting the authority and while waiting to be picked up by a taxi or municipal transport service.

General: MAKING YOUR WAY OUT IN CASE OF EMERGENCY

▶ **It should be possible for people with disability to get themselves to safety in the event of a fire or other emergency.**

To get to safety means to be able to make your way out or move to a secure refuge point independently. One alternative is to provide the possibility for movement to a temporary evacuation place in an adjacent fire cell from which you receive assistance to make your way out.

Preconditions for this include

- that there are access routes for exits, to a secure refuge point or temporary evacuation point that can be used by a person using a wheelchair – that is to say a route without stairs, steps, high thresholds, heavy doors and opening devices that are difficult to reach
- that the refuge point or evacuation point is big enough for a wheelchair without impeding others passing by and also that this place is well protected against smoke and heat
- that the opening devices for doors in all evacuation routes are easy to understand and operate
- that alarm buttons to activate fire alarms and evacuation alarms and also fire extinguishers are located within reach of people using wheelchairs

- that people with disability can understand the evacuation alarm and information in conjunction with the evacuation
- that there is an evacuation plan with work routines that ensure that everyone gets out in the event of an evacuation
- that there are clear signs indicating which evacuation routes people using wheelchairs can use to make their way out to a secure refuge point, fireproof lift or temporary evacuation point

Issues concerning safe evacuation for all should be included in ordinary fire protection work.

See also the book *Accessibility and Cultural Heritage* (the National Property Board – SFV), which includes a presentation of a pilot project concerning evacuation at the Wrangel Palace. More examples are contained in the book *Utrymning för alla: Byggnader med kulturvärden* [Evacuation for all: Buildings with cultural value], Elena Sire (Svensk Byggtjänst).

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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 5:31, buildings should be designed to enable satisfactory evacuation in the event of a fire. According to the advice, satisfactory evacuation means either a complete evacuation of all people in the building or moving those people who are located inside the section of the building directly affected by the fire to a secure refuge point in the building.

The National Board of Housing, Building and Planning's report *Utrymningsdimensionering* [Evacuation design] states, among other things: People with disability may have difficulties making their way out via a building's evacuation routes, especially if these comprise stairs. To facilitate evacuation for these people, various improvements can be made, for example through furnishing stair lobbies with an area with space sufficiently large for a wheelchair. Another alternative may be to provide the building with an area, crush-room or similar within its own fire cell, adjacent to the respective stair. Those who find it difficult to use the stairs can then wait in the fire cell until assistance with moving to another floor arrives.

In this context it is important to be aware that people have different capabilities for getting to safety and this should be taken into consideration in conjunction with planning, including the project planning, of fire protection. Read more in the report.

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## Design of particular rooms: TOILETS

- ▶ **A sufficient number of toilets should be available and they should be easily accessible.**

All toilets should be able to be used by everybody, regardless of functional capacity (with exception of people who need especially spacious toilets, see also below). Preconditions for this include

- that there is a contrast in tone between the door and fittings and the background
- mixer taps and other controls that are easy to understand and easy to use, for example that mixer taps can be operated with a fist or elbow
- that alarm equipment is arranged so that people with reduced hearing and people who are deaf can also be reached by warning signals in the event of a fire or other dangers
- that there are clear signs with easily understood symbols and tactile markings indicating whether the toilet is for men or women
- that there is clear information about whether the toilet is vacant or occupied
- that floor coverings that do not present a slip hazard and floor gradients are of a maximum of 1:50 (if a gradient is required for water drainage)
- that illumination is good and does not glare and that the light functions as long as someone is in the toilet
- that there is no shiny material that gives confusing reflections
- that the room has good ventilation
- that there is a handbasin with hot and cold water within comfortable reach of the toilet and that it is possible to regulate the water flow and temperature
- that at least one cubicle is enclosed, namely, with no gaps under/over the doors or walls (apart from any openings for an air inlet to facilitate good ventilation)
- that there is a dry countertop near the toilet seat
- that there are hooks for clothes/bags, an enclosed waste container sufficiently large to hold aids that are used with incontinence and that it should be possible to use the toilet-paper holder with one hand.

There is no reason to refer people with disability who have no need of especially spacious toilets to the toilet that is dimensioned for people using wheelchairs. On the contrary, for a person with impaired vision a small toilet may be preferred. Toilets with screen walls (for example with an opening between floor and wall) do not function well for instance for people who have

had a colostomy. Where there are such toilets it is therefore necessary to have an additional toilet that is enclosed.

Soap in toilets should always be unscented.

▶ **On each floor where there are toilets, there should be at least one toilet that can be used by people with impaired mobility capacity.**

Preconditions for this include

- that the toilet cubicle can always be reached when operations are in progress in the premises
- that the toilet cubicle can be reached from a neutral space, rather than from a ladies' or gentlemen's toilet section
- that the room is sufficiently large, that is to say at least 2.2 x 2.2 m
- that the toilet pedestal and handbasin are placed in accordance with the Diagram
- that other fittings and equipment are placed and designed to satisfy the requirement that they are reachable, manageable and easily understood
- that cubicle is equipped with a functional emergency alarm
- that the door can be opened, passed through and easily closed from the inside by a person using a wheelchair
- that the handle and the lock are easy to operate and understand.

What these requirements mean in practice is described in detailed information sheets about toilets, see [www.handisam.se](http://www.handisam.se).

In large premises, several toilets per floor may be required for people with impaired mobility capacity. A point of departure can be that people using wheelchairs should not have further to go to the toilet than other people. It may be acceptable in existing buildings that toilets for people with impaired mobility capacity do not completely satisfy the above-mentioned criteria, subject to the precondition that there is at least one toilet in the premises that is at least 2.2 x 2.2 m. The possibility of increasing the measurements of all toilets for people with impaired mobility capacity to 2.2 x 2.2 m should be investigated. If it is considered possible, the rebuilding of the toilets should be planned from the time perspective.

If there is a possibility of taking a shower, there should be at least one shower area that can be used by people with impaired mobility capacity.

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## **WHAT DO THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING AND THE SWEDISH WORK ENVIRONMENT AUTHORITY SAY?**

According to BBR 3:126, it should be possible for at least one toilet, intended for the public, to be used by people sitting in wheelchairs. (BBR 3:121 refers to electrically powered wheelchairs for limited outdoor use). According to HIN (applies to hygiene rooms in public premises that are intended for people with impaired mobility or orientation capacity), improperly placed or poorly designed fittings that make the room difficult to use can be an obstacle that is simple to rectify. There should be contrast marking so that people with impaired vision can orientate themselves. Insufficient alarm equipment should be supplemented so that people with reduced hearing and people who are deaf can also be reached by warning signals in the event of a fire.

According to the Swedish Work Environment Authority's 'General Advice on the application of the regulations for the design of workplaces' (2000:42), the appropriate dimensions of disabled toilets in schools and in large workplaces is 2.2 x 2.2 m.

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### Design of particular rooms: ASSEMBLY HALLS

 **It should be possible for people with disability to comprehend, enjoy and participate in what is happening, both from the stage/podium and from the audience.**

This requirement also applies to, for example, lecture halls and theatre and cinema auditoriums. In addition to the general requirements described previously, preconditions include

- that the stage/podium is easily accessible and can be used by people using wheelchairs
- that in rooms with fixed places to sit, there are places in the audience for people using wheelchairs
  - at such distance from the podium/stage that it can be seen and heard well
  - located so that a person can sit beside the person they came with, and with the same equipment as other places
  - located so that it is possible to choose various distances from the stage/podium
- that signs are clear, for example clear seat numbers and information that there is auditory equipment

- that the room has good acoustics and devices, for example an induction loop, that makes it possible for people with reduced hearing to comprehend, enjoy and participate in the activity, both from the hall and from the podium (see also Induction loop, page 76)
- that lighting is arranged so that the distribution of luminance, the level of illumination and the distribution of light can vary having regard to the activity in the premises (use of projector, video) and also that the light fittings do not cause glare
- that the design of the hall and its lighting facilitate lip-reading and sign-language interpreting, for example, in the case of a darkened room, it is possible to spotlight the speaker and sign-language interpreter
- that any equipment that may be needed as a speaker or audience can be used by people with disability (see Fittings and equipment, from page 70).

The distance from the assembly hall to the toilet and dining room should not be greater for people with disability than for people with full mobility who can use stairs.


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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 3:126, all parts of cinemas, theatres, athletics stadiums and other large assembly rooms do not need to be reached by people sitting in wheelchairs. Assembly rooms must be equipped with induction loops, IR systems or other technical solutions that make it possible for people with reduced hearing to listen.

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### Design of particular rooms: MEETING ROOMS

 **It should be possible for people with disability to be able to participate in the activities in the room.**

This requirement also applies to meeting rooms, group rooms and classrooms. In addition to the general requirements described previously, preconditions include

- that the room has good acoustics and a device is available in the room or to borrow to enable people with reduced hearing to participate in the activity

- that the room can be furnished so that people using wheelchairs can take part in meetings
- that the design, furniture and illumination of the room facilitate lip-reading and sign language interpretation
- that the equipment that might be needed by the chairperson or participants of the meeting can be used by people with disability (see the chapter Fittings and equipment, from page 70).

Which auditory technical device may be appropriate depends, among other things, on the size and function of the room. In meeting rooms, devices should be used where every participant has their own microphone. Cordless microphones should be avoided. In certain kinds of premises, security aspects must be considered to avoid the possibility of illicit surveillance from outside the premises. There should be a toilet that can be used by people using wheelchairs in the vicinity.

## Design of particular rooms: RECEPTION



**It should be possible for people with disability to use the reception.**

Reception also means, for example, reception desk where staff meet visitors over a desk. In addition to the general requirements described previously, preconditions include

- that the reception is clearly visible from the entrance and that it is also possible for people with impaired vision to find their way there
- that part of the reception desk is at a level that is appropriate for people using wheelchairs and people of short stature, that is to say approximately 0.75 m above the floor
- that equipment facilitating communication is available for people using hearing equipment
- that the design and illumination are such that the receptionist is clearly visible, thus facilitating lip-reading (for people who are deaf or have reduced hearing)
- that there are seating areas and places to write nearby. In certain cases, the possibility of arranging a place to sit adjacent to the desk is necessary.

A balance must be struck between the various interests. Besides the requirement that the reception should function well for visitors with disability, it must also function well as a workstation. It should be possible to adapt the reception area without very extensive measures so that, for instance, a person

using a wheelchair can work as a receptionist. There are special security requirements for receptions in certain kinds of premises.

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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

HIN includes the reception desk as a strategic point where there should be contrast marking.

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### Design of particular rooms: PATIOS

 **It should be possible for people with disability to use a patio area.**

This requirement applies when the patio is located adjacent to the authority's premises. Preconditions for this include

- that the patio can be reached without having to use steps or stairs
- that walkways to open surfaces, seating areas, etc. can be used by people with disability (design of walkway, see Walkway, page 62)
- that the door can be opened, passed through and closed by a person using a wheelchair or walker (see also Door, page 68)
- that patio is free of plants that are allergenic or that may cause problems for people with allergies or hypersensitivity
- that the patio is sufficiently large, for example that it is possible to turn and manoeuvre a wheelchair up to a table (a 1.5 metre diameter circle is the dimension for assessment of accessibility)
- that the patio is also designed in other ways so that it can be used by a person using a wheelchair, for example, the upper area of the balcony and terrace fence should be transparent so that they do not prevent people sitting there from looking out
- that the ground surfacing of seating areas is firm, flat and even
- that seating areas and seating benches/seating places can be used by people with disability (see Seating places, tables and work areas, page 75).
- that smoking is only permitted at a specially designated patio.

## Detailed requirements: SIGNS

Preconditions for good signage are

- that signs are located where they are needed so that you can find your way around and that they are placed so that it is easy to find them
- that signs are placed so that it is easy to read them
- that signs are well-illuminated and free of reflections and that the reader does not become dazzled or block the illumination themselves
- that signs are designed so that text is easy to read
- that information is given in such a way that it is easy to understand, such as with the aid of easily understood and well-known pictures/symbols
- that information is as far as possible also given in an audible form (can be heard) and/or in a tactile form (can be felt)
- that electronic signs are also placed and designed so that it is easy to read them.

As a rule, signs with text/symbols are placed within the interval 140 to 160 cm above the floor and so that it is possible to get up close to the sign. Sometimes it is necessary to have a sign positioned higher as a supplement.

The text height should be adapted according to the intended reading distance so that it will be easy to read the text on the sign. The use of only capitals in long words should be avoided, except when the text is in relief. A 'simple' font should be used (no serifs and no italics). There should be good contrast in tone between the text and the sign base and between the sign base and the background.

Tactile information can mean Braille or raised text. Long words in relief can be difficult to read.

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## WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?

According to HIN, inadequate signage can be an obstacle that is simple to rectify.

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## Detailed requirements: DAYLIGHT AND ILLUMINATION

Preconditions for good lighting conditions are

- that light does not dazzle, among other things it should be possible to screen out blinding daylight
- that the level of light is sufficient and that it is easy to arrange intensified general and spot illumination
- that the illumination is relatively uniform (but not so uniform that the room appears formless) and that it is supplemented with additional illumination in areas that it is wished to mark in particular or where it is important to be able to see particularly well
- that it is possible to regulate the light distribution, illumination level and luminance distribution, taking into consideration the need for visual effort and activity
- that the illumination installations and fittings have pleasing light colours, good colour reproduction and do not emit disturbing heat waves, visible or invisible flickering, sound or UV radiation
- that the electric and magnetic fields from the illumination installation are limited.

Read more in *Att se, höra and andas i skolan; En handbok om skolans innemiljö* [To see, hear and breathe at school; A handbook on the school's interior environment.] (The National Board of Housing, Building and Planning and the National Board of Occupational Safety and Health, 1996) and *Ljus och rum, planeringsguide för belysning inomhus* [Illumination and rooms, guide for indoor illumination design] (Ljuskultur, 2003).

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## WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?

According to HIN, inadequate or blinding illumination can be an obstacle that is simple to rectify.

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### Detailed requirements: ROUTE INDICATION SYSTEMS

Route indication systems that make it easier for people with disability can be designed in different ways, for instance they may provide

- orientation points, namely, something that in colour, form or through extra illumination or sound stands out against its surroundings
- sound signals that can help you discern direction, for example, sound signals at crossing points
- visual contrast marking of strategic points with a tone contrast of at least 0.40 NCS
- tactile contrast marking of strategic points with floor/ground surfacing of contrasting structure
- logical colour systems, for example giving different floors different colours that recur on signs, lift panels, orientation maps, etc.
- clear signs (see Signs, page 58)
- logical route indication markers that lead to selected strategic points.

Strategic points are points/parts of buildings that it is important to be able to notice/get to when moving around in the building – for example an entrance, door or ticket dispenser. It should also be possible for a route indication marker to be comprehended in a tactile form/felt by touch. This can, for example, be achieved by having a wall, pavement edge (kerb), wall, grass or a planted border against asphalt or concrete that can be discernible with the help of a technical cane (a white cane used by people with impaired vision). A route indication marker may also consist of concrete slabs with a wavy structure on a flat surface – with tones contrasting with the surroundings. Examples of design of route indication markers are contained in the National Board of Housing, Building and Planning's book *Enklare utan hinder* [Simpler without obstacles], which is available at [www.boverket.se](http://www.boverket.se).

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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to HIN, strategic points should be marked with contrasting tones and logical route indication markers be arranged between chosen and strategic points. Logical colour systems can make it easier. HIN states that a tone contrast of at least 0.40 NCS makes it possible for many with weak vision to discern markings. According to ALM there should be special route indication markers on open walking areas. It should be easy to find important target points.

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### Detailed requirements: SAFE MOBILITY

Preconditions for safe mobility include

- that fittings and building parts that can constitute a hazard or obstacle should be positioned and designed so that involuntary contact is limited
  - that existing obstacles in places where people walk and pause are removed or that the risk of the obstacle is eliminated by, for example, an access way being provided around the obstacle
  - that existing obstacles (that cannot be removed or led around by a walkway) are clearly marked both visually and so that the obstacle can be discernible by a technical cane
  - that unprotected glass surfaces that can be mistaken for openings are marked with contrasting tones so that they can be observed by adults who are standing as well as people using wheelchairs and children
  - that stairs are marked with contrasting tones and have handrails on both sides
  - that the area in front of a downward flight of stairs is so large that the risk that people using wheelchairs and people with impaired vision will fall is minimised
  - that floor coverings and ground surfacings are such that they do not present a trip or slip hazard.
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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR, Chapter 8, buildings should be designed so as to limit the risk of personal injury as a consequence of a collision with doors, stairs, pillars, large glass surfaces, falling objects, projecting building parts or similar obstacles. Building parts that can constitute a hazard or obstacle should be positioned and designed so that involuntary contact is limited. Large glass areas in doors and glass areas that could be confused with doors or doorways should be clearly marked. Areas that are intended to be walked on should be designed in such a way and made of such material so as to limit slip or trip hazards. Surface areas should be designed without any unexpected small variations in level, uneven patches or low obstacles that are difficult to detect. According to HIN, inadequate warning marks and absence of, or inadequate design of, balance support may be obstacles that are simple to rectify.

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### Detailed requirements: WALKWAY

Preconditions for a good walkway include

- that the ground surfacing is firm, even, without edges and is neither slippery nor becomes slippery following rain
- that the lateral gradient is a maximum of 1:50
- stairs are supplemented with a ramp or lift
- that the slope is as little as possible in the direction of travel, that is to say a maximum of 1:20 on short distances (maximum 10 m) and for others a maximum of 1:50 (however, a gradient of 1:12 on a stretch that is not more than 6 m may be acceptable provided the topography or other circumstances make less of a gradient impossible)
- that pavement edges where people may need to pass are chamfered to 0 level on a distance of 90 to 100 cm
- that the pavement edge remains at the side of the chamfering (taking into consideration the safety of people with impaired vision)
- that there is sufficiently wide passage for a person using a wheelchair including for passing oncomers and turning around, that is to say a minimum of 1.50 m at the site (on existing walkways, 1.3 m is acceptable, which corresponds to the minimum requirement contained in BBR), a minimum of 2.00 m at public places or 1.80 m if there are turning zones, a minimum of 0.90 m for gates and the like

- that the walkway is easy and safe to follow for people with impaired vision (see also Signs, Route indication systems and Safe mobility, page 58 and 60 to 61)
- that the walkway is well illuminated (see also Daylight and illumination, page 59)
- that allergenic or heavily scented plants are not planted alongside the walkway and that any place specially designated for smoking is not placed immediately adjacent to the walkway
- that there are well-designed places to sit along long walkways.

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

Requirements for walkways are imposed both by BBR 3:122 (for example a maximum gradient of 1:12 and a minimum width of 1.3 m are recommended) and in ALM 1 (for example a maximum gradient of 1:20 and a minimum width of 1.80 at turning zones are recommended). The requirements contained in ALM are much more detailed than those contained in BBR. For instance, requirements are specified that they shall be firm, even and non-slip. According to HIN, among other things small changes in level, uneven ground surfacing, pronounced gutters and pavement edges that are difficult to cross, inadequate contrast marking and warning marks, inadequate or blinding illumination, and absence of, or inadequate design of, balance support may be obstacles that are simple to rectify.

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### **Detailed requirements: LIFTS AND LIFT CARS**

Preconditions for a lift to function properly for people with disability are

- that the lift is large enough to accommodate a person using particularly long wheelchair and comfortably accommodate an assistant (for existing lifts 1.1 x 1.4 m with a door on the short side, is acceptable, which is the minimum requirement in the standards referred to by the National Board of Housing, Building and Planning)
- that there is sufficient space outside the lift to be able to turn and back into the lift without getting too close to a downward flight of stairs
- that the door is an automatic opening, sliding door with a clear width of 0.90 m (for existing doors 0.80 m, which is the minimum according to BBR, is acceptable)

- that lift door is marked with contrasting tones
- that the lift stops level with the floor
- that the call button, lift panel and emergency alarm are located within reach of people using wheelchairs (existing placement in accordance with the standards referred to by the National Board of Housing, Building and Planning is acceptable)
  - position call buttons 80 to 100 cm above the floor and at least 70 (preferably 100 cm) from any corner or other obstacle
  - position the lift panel within the range 80 to 110 cm (preferable 80 to 100 cm) above the floor, and angled out from the wall a little (to enable people standing to read the information on the panel as well as it being able to be read by touch)
  - position the lift panel in the middle of the lift's long side
- that the call button, lift panel and emergency alarm can be used by people with disability
- that there is an acoustic (audible) and visual (visible) signal outside the lift to indicate when it has arrived
- that there is acoustic and visual information inside the lift car indicating on which floor the lift has stopped
- that the emergency alarm can be both seen and heard to be functioning
- that lifts with a lift car are supplied with a two-way communication system that enables a permanent link with the emergency service
- that there is a clear sign showing the operation conducted on the different floors (see Signs, page 58).

The dimensions of 1.1 x 1.4 m may be too small to hold both an assistant and a person using a particularly long wheelchair. To comfortably accommodate an assistant, the width should be a minimum of 1.5 m or the length a minimum of 1.8 m. To accommodate a person with a particularly long wheelchair, the length should be at least 1.5 m. It is possible for people with walkers to turn with a width dimension of 1.2 m. Lifts with doors at an angle, so that one has to turn 90 degrees, should be avoided or made especially large. To be able to turn and back into the lift without getting too close to a downward flight of stairs, a clear area corresponding to a circle of 1.5 m diameter plus a distance of approximately 40 to 50 cm to the downward flight of stairs is necessary.

For it to be possible for people with disability to be able to use call buttons, lift panels and emergency alarms they should, among other things, be easy to operate and discern, both visually and by touch. Detailed requirements on, for example size and strength to activate are contained in Lift Standard EN 81-70.

It should be possible to differentiate between emergency alarm buttons and stop buttons by touch.

The building developer must clearly specify in the order to the lift supplier that the lift should be accessible for people with impaired mobility or orientation capacity. Otherwise there is a risk that the lift might be delivered with an inaccessible panel. It should also be specified that it is desired that the panel be in accordance with the Appendix to the Standard, that is to say angled out with extra large buttons.

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### **WHAT DO THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING AND THE LIFT STANDARD EN 81-70 SAY?**

A lift with the car dimension 1.1 x 1.4 m and with a door on the short side is acceptable according to the standards referred to by BBR. Detailed information regarding lifts, among other things regarding the size of buttons and power, is contained in the Lift Standard EN 81-70 'Safety rules for the construction and installation of lifts – Part 70: Particular applications for passenger and good passenger lifts'. In the Standard, call buttons located 0.5 m and lift panels 0.4 m from any corner are acceptable. For call buttons a height up to 1.1 m and for lift panels a height up to 1.2 m are acceptable.

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### **Detailed requirements: PLATFORM LIFTS AND STAIRLIFTS**

People with impaired hand function find continuous pressure switches (controls that have to be depressed during travel) difficult or impossible to use.

Therefore, the installation of lifts manoeuvred with continuous pressure switches – that is to say platform lifts and stairlifts – should be avoided in public environments. Platform lifts may possibly be installed in special situations, for example at podiums and in existing buildings where a lift with a lift car is not a feasible alternative. Stairlifts are an even worse solution than platform lifts, and should only be acceptable in public environments in very special situations where neither an ordinary lift nor a platform lift can be installed.

For platform lifts and stairlifts to be acceptable it is necessary that

- that the platform also, if possible, has enough space for an assistant (means at least 1.1 x 1.4 m)

- that the lift should be able to bear the weight of an electrically propelled wheelchair (up to 200 kg) in addition to the user and assistant (if there is space for such)
- that the lift as far as possible should be able to be manoeuvred by people with weak hands.

For an existing platform with a low lift height, if the device can be manoeuvred from the outside it is acceptable that it cannot hold an assistant. The dimension 0.9 x 1.4 m with a door on the short side may then be acceptable for a platform lift. In public premises, the platform on a stairlift should as a minimum hold a wheelchair with the dimensions 0.7 x 1.3 m.

It is particularly important that the controls are easy to reach and easy to operate, for example that the buttons are extra large and do not require considerable strength to depress. The door should open automatically.

### Detailed requirements: STAIRS

The preconditions for stairs to be acceptable from an accessibility perspective are

- that a ramp or lift is available as a supplement
- that stairs are marked with contrasting tones on the lowest riser and on leading edge of the landing of the top riser by a tone contrast of at least 0.40 according to NCS
- that there are handrails on both sides of the stairs at a height of approximately 0.90 m and that run uninterrupted and extend approximately 0.30 m past the topmost and lowest step's leading edge
- that handrails are marked with contrasting tones, grip-friendly and without obstructing brackets
- that there are no single steps (fewer than three steps increase the risk of tripping)
- that the area in front of a downward flight of stairs is so large that there is little risk of falling (see Safe mobility, page 61).

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

It is stated in HIN that stairs should be furnished with contrast markings and that the marking should be conducted in a manner that is consistent within the building. It is also stated that there should be handrails on both sides of stairs. That stated about the

design of handrails complies with the requirements referred to above.

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## Detailed requirements: RAMPS

The preconditions for a ramp to function acceptably for people with disability include

- that the maximum gradient is 1:20 in the direction of travel (a maximum gradient of 1:12 may be acceptable where a less steep gradient is not possible)
- that the maximum lateral gradient is 1:50
- that an individual ramp comprises a maximum difference in levels of 0.5 m, preferably less (a maximum of approximately 5 m between resting points)
- that several consecutive ramps together comprise a difference in level of at most 1 m (if the height difference is greater, lift equipment should be considered)
- that the width is at least 1.30 m, for public areas at least 1.50 m
- that intermediate resting points are at least 2 m long
- that a resting point with a door is large enough so that a person using a wheelchair can remain on the level surface when the door opens
- that there are pathway barriers to prevent running off (if there is a height difference in relation to the surrounding ground) and that the surface is firm, even and non-slip
- that there are grip-friendly handrails marked with contrasting tones on both sides at a height of approximately 0.90 m (at public places also at a height of 0.70 m, according to ALM), that these start/end approximately 0.30 m both before and after the ramp.

Pathway barriers to prevent running off may be, for example a rail/barrier that is designed so that it prevents the wheels of a wheelchair from running off the ramp, or a kerb approximately 10 cm high. For existing ramps a 4 cm kerb, which is the minimum measurement according to ALM, is acceptable. A ramp is not a replacement for, but a supplement to stairs. Some people prefer stairs instead of ramps. In the event of new building, changes in level that result in the need of stairs/ramps should be avoided entirely.

Chamfering of pavement edges should have a width of 0.9 to 1.0 m.

For examples of measurement for resting points with doors, see the detailed information sheets for doors on [www.handisam.se](http://www.handisam.se).

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## **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

The requirements of the National Board of Housing, Building and Planning for ramps vary, depending on whether it is a ramp in a building or at a public area. According to BBR 3:124, ramps in premises or on movement routes should have a maximum gradient of 1:12, while ALM (that is applicable for public places) states a maximum gradient of 1:20. Both BBR and ALM specify that a ramp should have a maximum height difference of 0.5 m between resting points at least 2 m long. ALM specifies that a ramp should have clear width of at least 1.5 m, while no width measurement is specified in BBR. ALM contains detailed requirements on design, among other things regarding pathway barriers to prevent running off and handrails. For pathway barriers to prevent running off, 4 cm is specified as an acceptable height. According to HIN 1, small changes in level should be bridged over, for example by a ramp. Absence of or inadequate design of balance support, for example handrails, should be rectified.

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### Detailed requirements: DOORS

Prerequisites for people using wheelchairs or walkers to be able to open, pass through and close a door include

- that the width of the door allows passage of a wheelchair, that is to say that the clear passage dimension door is opened 90 degrees is at least
  - 0.84 m for entrance doors, doors to patios, corridor doors, doors to assembly halls, lecture halls, meeting rooms, toilet facilities for people using wheelchairs (existing doors with a passage dimension of 0.80 m, which corresponds to the minimum requirement contained in BBR for entrance doors and corridor doors, is acceptable)
  - 0.80 m for doors to small rooms intended for a few people, such as office rooms and small group rooms
- that the door is completely without a threshold or has a low, chamfered threshold (a maximum of 25 mm, preferably a maximum of 20 mm and a minimum gradient) in those cases where a threshold cannot be avoided
- that heavy doors, such as doors with door closers, are furnished with automatic door openers with suitably positioned and designed manoeuvring devices
- that automatically opened doors are furnished with sensors so that the door does not close in on you

- that the space around the door is sufficient for a person using a wheelchair to be able to
  - manoeuvre the wheelchair to be able to turn around to close the door after them
  - have room for the wheelchair outside the swing area of the door (so that it is possible to open the door)
- that it is possible to reach the door handle and other manoeuvring devices at the door (placed at least 70, preferably 100 cm from any corner and not in a niche)
- that the door handle and door lock are easy to manipulate and understand, at a height that makes them easy to reach and that the grip surface is not made of any material containing nickel.

Manoeuvring devices for door openers should be marked with contrasting tones and positioned with their centre 80 cm above the floor, at least 70, preferably 100 cm from any inner corner and at least 100 cm from the leading edge of the door (on the side where you open the door towards you).

Door grips in the form of handles should be placed a maximum of 1.0 m above the floor. Double-handled grips should not be necessary. A vertically positioned handle, for the purpose of pulling open a door, should be placed and designed so that it can be gripped at heights both of approximately 0.8 m above the floor and 1.0 m above the floor.

See also detailed information sheets regarding doors on [www.handisam.se](http://www.handisam.se).

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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to advice contained in BBR 3:125, the clear passage dimension in entrance doors, lift doors and corridor doors should be at least 0.80 m. According to advice contained in BBR 3:123, corridors and the like should be at least 1.3 m wide.

According to HIN, physical obstacles in the form of thresholds and heavy doors may be obstacles that are simple to rectify. HIN also contains detailed advice corresponding to that specified in the Guidelines concerning the location of manoeuvring devices for door openers.

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## 2. Fittings and equipment

Fittings and equipment can, for example, be fixed fittings such as coat shelves and other shelves, door-entry phones, card readers, equipment for identification and electronic signatures, fittings and equipment in pantries for staff – such as, for example ovens, microwave ovens, dishwashers, coffee vending machines and waste disposal equipment – movable fittings such as furniture and technical equipment in offices such as printers, faxes and copiers.

### Procurement of products

The requirements in the Guidelines can be used as a starting point for procurement. Try to ensure that what is procured is usable as far as possible – although there are not always products on the market that satisfy all requirements. The following can be a point of departure:

- that the product can be used with only one hand
- that the product can also be used by a person with weak hands
- that people sitting in wheelchairs and who have difficulty in stretching out their arms can reach what needs to be reached and see what they need to be able to see
- that the product can also be used by people with impaired vision, through there being tactile markings and/or supplementary speech, and by people with reduced hearing through speech being supplemented with text.

### General: FITTINGS AND EQUIPMENT

In addition to detailed requirements on certain equipment, there are a number of general requirements that involve, among other things, accessibility and usability.

 **Fittings and equipment should be placed and designed so that they are easy to find.**

Preconditions are

- that the placement is logical and consistent and/or that it is marked with contrasting tones by at least 0.40 units according to NCS. The importance of this varies according to the type of fittings and equipment. Examples of equipment where this is particularly important are ticket dispensers, door-entry phones and queue-ticket dispensers.

▶ **Fittings and equipment should be placed and designed so that they are accessible for people with impaired mobility capacity.**

This presupposes:

- that there is a place for a wheelchair, and to manoeuvre it, immediately adjacent
- that what is needed to be reached is within easy reach.

For location of manoeuvring devices and controls, see page 72. Shelves that should be comfortably reached should basically be placed within the same height interval and at the same distance from any corner, alternatively with clear space under, so that they can be reached from the front. There can be shelves placed higher as a supplement.

▶ **Fittings and equipment should not constitute an obstacle or impede ease of access.**

This presupposes:

- that it does not protrude into the manoeuvring area that is necessary for wheelchairs, impede ease of access in evacuation routes or prevent getting right up to signs
- protruding parts of fittings are marked with warnings or built in (for example protruding coat shelves).

▶ **Fittings and equipment should be designed so that they can be used by people with disability.**

Preconditions for this include

- that it is easy to understand how it should be used. Therefore the design – as far as practical – should be ‘self-instructional’, that is to say indicate how the product should be used
- that material that may cause problems for people with allergies or hypersensitivity should not be used (such as, for example material that releases substances that can irritate respiratory tracts or that result in contact allergies)
- that material does not give confusing reflections
- that important information is provided in visual form (visible), audible form (can be heard) or in a tactile form (can be felt)

- that the use involves as few grips by hand as possible and that the manoeuvring device is easy to operate and to discern (see also Manoeuvring devices and controls below)
- that fittings and equipment are designed so that they are easy to clean.

▶ **The radiation from the equipment in the form of electrical and magnetic fields should be limited as far as possible.**

Preconditions for this are, among other things, that the equipment is shielded to reduce radiation. Maximum radiation values are specified in the standards for office equipment produced by TCO Development. See also [www.tcodevelopment.com](http://www.tcodevelopment.com).

## General: MANOEUVRING DEVICES AND CONTROLS

Manoeuvring devices and controls can be part of the building or a part of the fittings or equipment. Examples of manoeuvring devices are handles, locks, mixer taps, power and lighting switches and controls for door openers, door-entry phones, card readers and controls on equipment, such as coffee vending machines, ovens and office equipment. The requirements (for example regarding size and strength applied to activate) vary depending upon the function of the manoeuvring device. However, the main requirements are common.

▶ **Manoeuvring devices should be placed so that they are easy to find and can be easily reached and discerned.**

Preconditions for this include logical and consistent placement, and

- that there is a place for a wheelchair, and to manoeuvre it, immediately adjacent to the manoeuvring device
- that manoeuvring devices that it should be possible to reach from the side from a wheelchair are placed at least 70, preferably 100 cm from any corner or other obstacle
- that manoeuvring devices that it should be possible to reach from the front of a wheelchair are placed protruding from the wall and with space for knees underneath, so that the people who use wheelchairs can get close to the manoeuvring device
- that manoeuvring devices on vertical or angled surfaces are placed at a height of 80 to 100 cm above the floor (for panels with two or more rows, such as lift panels, a maximum of 110 cm above the floor)

- that manoeuvring devices on horizontal surfaces are placed at a height of approximately 70 to 80 cm above the floor and close to the edge, so that it is not necessary to reach (higher placement can make it difficult to see the control if it is located on a horizontal surface)
  - that manoeuvring devices with information that is positioned at a low level (lower edge less than approximately 90 cm above the floor) are angled out from the wall. It is difficult for a person who is standing to visually and by touch discern information that is positioned low on a vertical surface.
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### **WHAT DOES THE NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING SAY?**

According to BBR 3:125, handles, manoeuvring devices and locks should be positioned and designed so that they can be used by people with disability. According to HIN 1, physical obstacles in the form of improperly placed or improperly designed manoeuvring devices may be obstacles that are simple to rectify. Note that the requirements from the National Board of Housing, Building and Planning only relate to manoeuvring devices that are fixed or that are part of fixed fittings.

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### **Manoeuvring devices should be designed so that they are easy to operate.**

Preconditions for this are

- that they can be used without the need for fine motor skills, can be manoeuvred by a single finger, by a knuckle of one hand, with the entire hand or an elbow
- that the device can be used by people with severely reduced muscle power
- that manoeuvring can be effected with only one hand.

It is preferable that controls can be manoeuvred with a lever rather than knobs that have to be turned. If knobs that have to be turned are used, types with protruding wings are preferable to cylindrical types.

Buttons should be relatively large (the appropriate size varies depending upon the function) and not lying below the panel surface in a recessed position. The risk of pressing several buttons at the same time is minimised by buttons being spaced at least a half-button width apart.

For card readers, solutions where the card only has to be held up are preferable to card readers where the card has to be slid through the reader.

Which requirements may be acceptable for power/strength required to activate the manoeuvring devices depends upon the type of controls and its function. For lift panels, 2.5 to 5 N is recommended, while for keyboards 0.2 N is recommended.

It should not be necessary to grip a manoeuvring device with more than one hand. A command that requires two or more buttons to be held down simultaneously should also function when the buttons are pressed down one after the other.

**It should be possible manoeuvring devices to be identified and discerned both visually (by sight) and tangibly (by touch) or by hearing.**

Preconditions for this are

- that it has a contrast marking of at least 0.40 units according to NCS
- that text and symbols are clear and easy to read and that preferably there are explanatory symbols
- that controls are marked and/or designed so that they are also easy to identify tangibly (by touch)
- that buttons provide a response so that it can be felt or heard that the button has been activated
- that controls are designed so that they cannot be activated by mistake
- that the status of the controls (that is to say whether or not the control has been activated) can be read either visually and by touch or visually and with sound in those cases where the status of the controls is important for the function.

There should be a clear contrast (differentiation in tone) between text on buttons and controls and the background. Tactile identification becomes possible if the controls have different forms or raised marking on or beside the control. Raised marking can be raised print, Braille or raised symbols. On keypad sets, the fifth should have a tactile marking.

The user should not have to see the difference in colours to be able to use the equipment.

It should be possible to identify a button by touch (without it being activated) so that it is not activated by mistake. Nor may the controls be placed too close to each other.

▶ **Manoeuvring devices should be easily understood.**

It should be easy to understand how the control should be used, that is to say, the design is 'self-instructional'.

▶ **It should also be possible for people with allergies to use the manoeuvring device.**

Grip surfaces should not include material containing nickel or other allergenic substance.

### Detailed requirements: SEATS, TABLES AND WORK AREAS

In addition to the general requirements described previously, the following preconditions for accessibility apply

- that at least some seats have a rather high sitting height (0.45 to 0.50 m), together with back and arm support
- that some of the chairs in areas where a person sits for a long time are soft or can be furnished with cushions
- that it should be possible to easily move chairs at tables out of the way to make room for wheelchairs
- that tables and work areas are designed so that people using wheelchairs, can get their feet and knees in under the table surface.

Recommended dimensions for clear space under a table surface are a height of approximately 0.68 m, width approximately 0.80 m and depth approximately 0.60 m. For outdoor wheelchairs, the width should be 0.90 m and the height 0.75 m. Tables that can be raised and lowered make it possible to vary the height according to individual needs. Also consider that the furniture design may be important for the sound climate, for example if chairs have legs made of metal or wood.

### Detailed requirements: DOOR-ENTRY PHONES

In addition to the general requirements described previously, the following preconditions for accessibility apply

- that the microphone for calls on a door-entry phone is located at a height of 1.1 to 1.2 m above the ground and so that it can also be used by people using wheelchairs

- that a visual acknowledgement is given on the door-entry phone so that it can be seen when someone has answered and that the door can be opened, for example, there may be text providing information about this.

In the case of new installations, the use of video door-entry phones should be considered, bearing in mind the needs of visitors with speech impediments and visitors who are deaf.

## Detailed requirements: INDUCTION LOOPS

Prerequisites for an induction loop to function include

- that it is installed and dimensioned correctly
- that several microphones, some of which are cordless, are linked to the equipment
- that the induction loop is regularly checked and that this is done by skilled technicians
- that the induction loop is clearly signed and that it is clearly indicated if it only functions in part of the premises.

Ensure that installation work is carried out by a skilled fitter. The audiological clinics and the Swedish Association of Hard of Hearing People (HRF) can provide information about which firms have appropriate competence.

The installation of an induction loop is only complete when it has been checked and measured according to IEC 118-4 (the international standard for 'Magnetic field strength in autofrequency induction loops for hearing aid purposes'). Conclude a service contract in conjunction with the installation. There should be written instructions about the operation and care of the loop and details of whom to contact about faults.

A prerequisite for an induction loop to function is that there is a low level of electronic and magnetic interference in the premises. If disturbances are great, another system should be chosen. It should also be observed that an induction loop can be covertly wiretapped outside the premises. Problems may arise for premises with secrecy requirements if induction loops are installed in nearby premises.

## Detailed requirements: NUMBER-BASED QUEUING SYSTEMS

In addition to the general requirements described previously, the following preconditions for accessibility apply

- that numbers on the queue tickets and displays are clear and easy to read and that there is a queue-ticket display at eye level (approximately 1.4 to 1.6 m above the floor), so that it is possible to get right up to it
- that information is provided about the position reached in the queue and how long it will take before the allocated queue number is served
- that it is possible to obtain visual and audible information when the queue number is allocated and about when and where the number in question will be served.

Audible information makes it easier for those with impaired vision. Despite the provision of audible information, it may be difficult for people who are blind to get to the correct counter, particularly if there are many desks and a lot of people. Those who cannot manage queue systems should be afforded the opportunity to be given priority service at one of the counters.

## OFFICE EQUIPMENT

The content of this section supplements the general requirements described previously. This section primarily deals with accessibility aspects regarding computers and telephones. The accessibility aspects below also apply in relevant respects to copiers, telefacimile equipment and scanners. As a general rule for all office equipment, it should also be possible for support services and user instructions to be used by people with disability.

### Office equipment: COMPUTERS

Preconditions for people with disability being able to use computers include

- that it is possible to connect personal aids, such as Braille screens, enlarged keyboards and keyboard substitutes, to the computer, and that it is possible to use computer programs together with readily available software for computer aids – for example aids for screen reading, reading Braille, speech synthesis, enlargement of screen content and voice-control
- that a start and a reboot can be initiated on the keyboard
- that the keyboard complies with established standards
- that the depression time for activation of the keys is adjustable

- that the function for key repetition on a keyboard or a key depression on a pointing device can be adjusted as regards time and also can be switched off
- that there are methods other than using a pointing device to select/input data on the visual display terminal such as via the keyboard or by voice control
- that the visual display terminal of a laptop computer can be folded up with one hand
- that pointing devices on laptop computers can be operated by either the right or the left hand
- that the laptop computer has an integrated wrist support
- that software complies with the Swedish Work Environment Authority's regulations
- that information in programs is not only based on colour
- that programs provide the user with an opportunity to choose the typeface and to enlarge and reduce the font size
- that graphics in the form of images, symbols, icons and buttons have different forms and colours for different functions and are supplied with text that can be read by speech synthesis programs
- that programs for touch screens offer the user a touch area of at least 2.6 square centimetres
- that messages and feedback responses can be seen and obtained by sound (not speech) that can be turned off.

## Office equipment: VISUAL DISPLAY TERMINALS/DISPLAYS

Preconditions for people with disability being able to use visual display terminals/displays include

- that the visual display terminal can be turned in all directions for the best setting in relation to the user, where this is appropriate
- that the frame frequency is such or can be set so that the visual display terminal's/display's content does not flicker
- that it is possible to choose and to enlarge the font size
- that the touch area on touch screens is at least 2.6 square centimetres.


## Office equipment: TELEPHONES

Preconditions for people with disability being able to use telephones include

- that they comply with established standards for the recommended size, positioning, marking and design of the keypad pressure surface
- that the buttons are tactile with an auditory feedback response, that is to say that the user can see, feel and hear when a button is activated and the sound can be turned off
- that the telephone is designed so that it is not easy to activate any of the buttons by mistake
- that the telephone has a display that, for instance, can show the number keyed in
- that the volume in the telephone handset and in the loudspeaker can be varied
- that the telephone has a hands-free function, that is to say both a microphone and loudspeaker
- that telephones that have an inductive coupling to a hearing aid are provided
- that there is an opportunity for direct conductive coupling, which means that it should be possible for a cable to be coupled between the telephone and the hearing aid.

### 3. Maintenance and routines

It is not enough that a building is made accessible and usable when it is erected. Accessibility and usability must be maintained through operational maintenance. Instructions and routines are required to ensure this.


 **There should be instructions on the use of the premises to make it possible for people with allergies or hypersensitivities to be in the premises.**

These instructions may be needed to ensure

- that no one is involuntarily exposed to tobacco smoke at the entrance, inside the premises or on a patio adjacent to the authority's premises (if, for instance, there is a place designated for smokers at the entrance, this should be located at least 15 m from the entrance and placed where it is not necessary to pass it when approaching the entrance)

- that plants that can cause problems for people with asthma, allergies or other hypersensitivity are not planted or placed by the entrance or brought into the premises (do not, for instance, bring in branches of birch and willow)
- that products that can cause problems for people with allergies or other hypersensitivity are not used in the premises (cleaning agents, soap and floorcare agents must not contain perfume or other allergenic substances)
- that staff who come into contact with visitors is encouraged not to use perfume or other scented hygiene products
- that cleaning is kept at such a level that it provides a good environment for everyone in the premises including people with allergies or other hypersensitivity
- that animals, except service dogs and guide dogs, are not allowed in the premises.

Read more at [www.astmaoallergiforbundet.se](http://www.astmaoallergiforbundet.se).

 **Premises should be attended to and maintained so that accessibility does not deteriorate.**

Special mention may be made of the following

- that walkways, including ramps, at entrances should be cleared of snow and sanded
- that, among other things, ground surfacing should be regularly inspected and maintained
- that the illumination is maintained on an ongoing basis.

 **There should be instructions for technical equipment concerning their operation and care, and routines for regular checks.**

For example, auditory technical equipment, induction loop, alarm equipment and lift equipment (especially such equipment that is not used daily, such as platform lifts and stairlifts). Instructions should be directed towards the relevant staff. There should be a special service contract, when warranted.

**Comments and complaints relating to the accessibility of the premises should be dealt with.**

There should be routines for this. The comments should be included as an information-base when a plan for measures is produced. Comments that have arisen in conjunction with the efforts relating to work environment should also be dealt with and form part of the information-base for the plan for measures.

▶ **Accessibility requirements should be considered when furnishing and placing other fixed and movable fittings.**

Special mention may be made of

- ease of access may not be obstructed in access ways or in evacuation routes
- place fittings at least 70, preferably 100 cm, from for example door handles, manoeuvring devices for door openers, lift buttons or door-entry phones (a clear space is necessary next to handles, manoeuvring devices and locks so that people who use wheelchairs are able to reach them)
- do not place fittings in front of signs so that people with visual impairment are prevented from getting sufficiently close
- cleaning should not be made unnecessarily difficult.

▶ **The consequences for accessibility should always be taken into account when changing premises, fittings or equipment and when rearranging the premises.**

For example, routines checks should be made of how the measures affect accessibility, whether the measures could be implemented in another way so accessibility is enhanced, and whether there are measures that could be effected simultaneously and which would enhance accessibility.

▶ **Accessibility aspects should always be included in conjunction with procurement and purchases.**

# Glossary and abbreviations

**AFS** Swedish Work Environment Authority Code of Statutes.

**ALM** The National Board of Housing, Building and Planning's Regulations and General Advice concerning accessibility and serviceability to persons with mobility or orientation impairment in public places and in areas for structures other than buildings (BFS 2004:15).

**Arrival point** Temporary stopping space for dropping off and collection from a transportation service vehicle, taxi or private car.

**Audible** In a way that can be heard.

**Aural** Audible, aloud. Reading a talking book is an example of aural reading.

**BÄR** The National Board of Housing, Building and Planning's Handbook on General Advice on Alterations to Buildings.

**BBR** The National Board of Housing, Building and Planning's Building Regulations.

**BVF** Ordinance on Technical Requirements for Construction Works, etc. (1994:1215).

**BVL** Act on Technical Requirements for Construction Works, etc. (1994:847).

**Daisy** Digital Accessible Information System.

**Direct conductive coupling** This means that the signals are transferred electrically via a cord that is linked between a telephone and a hearing aid.

**Distribution of luminance** Division of surfaces according to different levels of luminance. Luminance is a measurement of how much light a surface emits per surface unit and indicates how light we perceive a surface to be.

**ETSI** European Telecommunications Standards Institute.

**HIN 1** The National Board of Housing, Building and Planning's Regulations and General Advice on the elimination of simply rectified impediments to and in premises to which the public has access and in public places (BFS 2003:19).

**Induction loop** The induction loop sends out the microphone sound as electromagnetic oscillations. These are caught up by the hearing aid's telespool,

which transforms the oscillations into sound again. The advantage of listening via a loop system is that no disruptive sound is amplified in the hearing aid.

**Inductive coupling** This means here that the telephone shall function together with the hearing aid by the signals received (the transformed sound) being transmitted via a magnetic field to the hearing aid's telespool (cf. induction loop).

**Initial letter** Introductory letter of the first word on the first line, that is larger than the following text.

**ISDN** Integrated Services Digital Network.

**ISO** International Organization for Standardization, the international standardisation organisation.

**Linear typeface** Characters without serifs (heels).

**NCS** Natural Color System.

**PBL** The Planning and Building Act (1987:10).

**Pictogram** A system of graphic symbols drawn in white against a black background.

**Roman style** Typeface which has serifs (heels).

**Street gutter** Depression in pavement to drain water away from downpipes.

**Swing area at doors** The area that the door sweeps over when it is opened. May also be called 'opening area'. There must be space for a wheelchair outside this area so it is possible to open the door.

**Tactile** In a way that is (physically) tangible, can be felt.

**Tint block** A colour block as a background for the text, for example in a fact box.

**Visual** In a way that can be seen.

**WAI** Web Accessibility Initiative, a consortium that has published, among other things, Web Content Accessibility Guidelines (WCAG) and Authoring Tool Accessibility Guidelines (ATAG).

**Wavy structure** Waved-formed surface that can be perceived with a technical cane and where technical cane does not get stuck.

**Work Environment Act** (SFS 1977:1160).

**Work Environment Ordinance** (SFS 1977:1166).

**WWW** World Wide Web, the Internet.

Handisam's information brochures are primarily aimed towards central government authorities, but may also be used by municipalities, organisations and private businesses. Target groups for printed matter include management groups, personnel officers, officers responsible for communication, information and property services.

At [www.handisam.se](http://www.handisam.se) there is more information and support in the form of detailed information sheets, inventory forms and checklists.



**HANDISAM**  
Swedish Agency for  
Disability Policy Coordination