RECOMMENDATIONS CONCERNING ACCESSIBILITY
FOR APPLICANTS AND BENEFICIARIES OF THE INTERREG PROGRAMMES[1]

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[1] Document prepared on the basis of Accessibility Standards for the Cohesion Policy 2021-2027.

Contents

1. Why programmes and projects have to be accessible?

- Ensuring the accessibility of activities and outputs of projects is the obligation of programmes financed by the EU funds. It is about ensuring that the people with disabilities have the same level of access as the non-disabled to EU funds in terms of:
    - ✓ participation,
    - ✓ usage,
    - ✓ comprehension,
    - ✓ communication,
    - ✓ making use of their results.

- In the activities being designed, we should take into account the needs of people with different types of disabilities, in particular the needs of:
    - ✓ persons with physical disability,
    - ✓ blind and vision impaired,
    - ✓ deaf and hard of hearing,
    - ✓ persons with intellectual disability,
    - ✓ persons with mental health difficulties or disorders,
    - ✓ people with communication deficits.

- To assume that people with disabilities will not apply to a mainstream project, or that people with only certain disabilities will apply is discriminatory.

- It is unacceptable that a person with a disability is denied access to participate in a project due to barriers, for example: architectural, communication or digital barriers.

The below presented study (it is not an exhaustive catalogue) contains examples of typical barriers that can occur in a project, as well as examples of services that can be rendered for certain individuals due to specified type of disability.

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
Blind, vision impaired and deaf-blind persons	- architectural, - digital, - cognitive, - spatial.	- introducing contrast and tactile elements for blind and vision impaired people, - purchase and installation of enlarging and screen reading software, Braille printers, - preparing project materials in Braille or printed in enlarged sans serif font (for example Helvetica, Arial, Verdana, Tahoma without shadow), - interpreter-guide for a vision impaired and hard of hearing person – ensuring support for reaching the place where project is being implemented and in using the services offered under the project, provided by a person familiar with the manners of establishing contact, moving techniques, alternative methods of communication (for example: Lorm, a tactile signing method adjusted to the needs of vision impaired person) for a customer having problems both in seeing and in hearing. The support of interpreter-guide allows for safe movement and efficient communication with the environment,

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		• guide dog/assistance dog – a dog is not only a companion for vision impaired people, but also for those with physical disability, Guide dogs support their owners in performing every day's tasks (each dog is trained to match the needs of its owner's best). Just like guide dogs, assistance dogs can go anywhere and enter any space. Assistance dog can be recognized thanks to a special vest. Usually, the information on the vest says: "service dog – do not pet". In case of any doubts, you can always ask the person with disability to provide a document stating that their dog is an assistance dog.
Deaf and hard of hearing	• digital, • acoustic, • communication, • cognitive.	• purchase and installation of cameras thanks to which one can contact the person using sign language, purchase of fast Internet connection (symmetrical connection) allowing the use of interpretation into Polish Sign Language online, • purchase (rental) and assembly of hearing assistive systems, such as induction loops, FM systems, etc., • ensuring sign language interpretation (including in online version),

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		• recording selected forms of support in video format – the material allows to go back to the provided content, to replay and re-analyse the content provided during support. It is particularly important for people with cognitive difficulties, difficulties in making notes, difficulties in fluent and effortless use of Polish language, • recording a CD with interpretation into Polish Sign Language, materials in alternative versions (for example audio, drawings, symbols),
People with physical disability	• architectural, • transport.	• changing the place where the project is being implemented to a place accessible for people with different types of disabilities, assembly of ramps, platforms, stair lifts/chairlifts, elevators, • transporting to the place where the services are being provided, • supporting the persons in reaching the place where the services are being provided and in using the services offered under the project; support should be provided by a person familiar with the specific difficulties with moving experienced by the person with disability, • guide dog/assistance dog – a dog is not only a companion for vision impaired people, but also for those with physical disability, Guide

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		dogs support their owners in performing every day's tasks (each dog is trained to match the needs of its owner's best). Just like guide dogs, assistance dogs can go anywhere and enter any space. Assistance dog can be recognized thanks to a special vest. Usually, the information on the vest says: "service dog – do not pet". In case of any doubts, you can always ask the person with disability to provide a document stating that their dog is an assistance dog.
Persons with intellectual disability Persons with mental health difficulties or disorders	• communication, • cognitive.	• ensuring materials in a language that is easy to read or in alternative versions (for example audio, drawings, symbols) – for those who, due to cognitive difficulties, do not communicate fluently in Polish, • extended support time – necessary for those, who, due to their disability, need more time to make full use of the support. The standard time of the service rendered under the project can be extended, for example as a result of the necessity to speak slower or to ensure mental safety, • recording selected forms of support in video format – the material allows to go back to the provided content, to replay and re-analyse

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		the content provided during support. It is particularly important for people with cognitive difficulties, difficulties in making notes, difficulties in fluent and effortless use of Polish language, • participation of supporters – these do not have to be instructors or (psycho)therapists. It is worth to encourage students and volunteers to participate in the project. First, these people support the project leader during works in smaller groups, for example by steering the discussion or by activating the participants. Second, they empower, thanks to their presence, the people with disabilities, who are often unsure of themselves. With their support, they can learn to be more outspoken and can see that can discuss important subjects with others. Third, the participation of supporters in trainings raises their awareness – it allows them to see the people with intellectual disability as a human being worth of respect and human rights. We need to convince persons with intellectual disability that supporters are as much of participants as they are. This means that during classes everyone can learn and work. We cannot allow for the group to be divided into "us" and "them". Of course, supporters have their own additional tasks – they observe the class

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		participants, they pay attention to their behaviour, their reactions, the level of their understanding of the subject and their interest in it. They support the participants in providing answers, if the person with disability needs this. During work in groups, they ask additional questions, making the participants more active. The tutor holding classes should cooperate with the supporters. They should not disrespect their opinions and suggestions, both sides can discretely share their comments. **Please note!** One needs to learn how to support effectively. First it is necessary to train those who could participate in the classes in the role of supporters. It is justified to explain that it is about empowering the initiative of the persons with intellectual disability. The supporters should be familiar with the subject of the classes, but you should not share all of the details with them. If you succeed in establishing a longer and permanent cooperation with them, you should include them in the preparation of the timetable – their comments and suggestions can turn out to be very valuable. • when organizing workshops in which people with mental health disorders or with lower intellectual abilities are to participate, ensure

Types of disabilities	Barriers in the environment	Type of service and exemplary resolution
		the right structure and prepare a plan for the participants. Clear structure and planning of specific activities makes the work easier. It is recommended to present the key terms used during workshops with pictogram or pictures. Some of the participants, for example autistic people, use alternative means of communication that make use of various kinds of visuals placed in specially prepared communication manuals or on specially prepared boards. The users may point to an image or strip with pictures, asking for specific answers.
People with communication deficits	• communication	• participation of supporters – these do not have to be instructors or (psycho)therapists. It is worth to encourage students and volunteers to participate in the project. • preparing materials in alternative versions (for example audio, drawings, symbols, infographics, AAC tables) for those who have problems with fluent communication

2. How to ensure accessibility of information and promotional activities?

2.1. Information on the project – in printed and electronic form

Information materials (such as posters, leaflets, press releases) and recruitment documents (such as applications forms, recruitment forms, questionnaires) should be drawn up in an accessible manner and shared <u>at least in electronic version</u>. For the information to be accessible it has to be, first and foremost, easy to read and understand, meaning drawn up in a simple language. Follow the rules listed below:

- as far as possible, do not use slang, abbreviations and phrasal verbs,

- do not use difficult terms and abbreviations in another language, unless they are common knowledge;

- if you use industry abbreviations (for example ESIFs, ETC and others), when mentioned for the first time, provide their explanation in brackets,

- use active instead of passive voice in sentences,

- provide examples,

- write short sentences, if possible – positive ones instead of negative ones (for example: "Implement an available project" instead of "You should not implement an unavailable project").

An important issue, when ensuring information accessibility, is the structure of the text and the ability to navigate it. When preparing information, use the text editor options that will allow the user to read and comprehend the contents.

A properly structured document can be easily converted into a format preferred by the user, for example, it can be read out using a screen reader or other assistive technologies. Below you will find some tips, how can you prepare content that is accessible.

2.1.1. Font

- use sans serif font[2] (for example Verdana, Arial, Tahoma, Helvetica) of size 12 at minimum;

- use line spacing between lines: 1.15 or 1.5;

- to space out the characters use the "Expanded" function, do not insert spaces between the letters, as then the screen reader treats every letter as a separate word.

2.1.2. Headers

Headers make it easier for the vision impaired people, people with intellectual disabilities and those who have troubles in using mouse or keyboard to navigate the document.

- use embedded styles, such as Header 1, 2 etc., that make it possible for those using keyboard and screen readers to move the cursor directly to the header of their choice.

2.1.3. Paragraphs

Divide the text into paragraph, they make it more clear.

- when you want to move a part of the paragraph or sentence to a new line, insert the line feed using the keys: <Shift+Enter>,

- when you want to move a part of the document to a new page, insert page break using the keys: <Ctrl+Enter>,

- do not use <Enter> key to move the content – blind users will receive a wrong information from the screen reader,

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[2] Examples of **serif fonts** that should not be used are Times New Roman, Century.

- try not to write sentences horizontally – the screen readers read the text as it is read and written in the Polish language meaning from left to right and from top to bottom (vertical content disrupts the order of text read out),

- align text to the left – do not use justifying.

2.1.4. Hyperlinks

Hyperlinks (links) allow for easy navigation within the document. It is important to insert them in an accessible way. Do not use the names of the whole links – assign them a name that will clearly identify their purpose, for example:

Instead of: http://power.parp.gov.pl/harmonogram/harmonogram-naborow-na-2017-rok,
write: Application deadlines.

2.1.5. Numbering and lists

It is a good idea to put any lists in the text in the form of a numbered or bulleted list. The screen reader reading the document recognizes lists and the blind person can jump directly to them in the text. Such lists are also a facilitation for those who have troubles with reading and allow for easier text analysis.

Use lists every time you list in the text linked elements.
The bullet symbol or number denoting a list item should be positioned to the left of the text. As a result, the list elements will be more noticeable.

2.1.6. Contrast

Contrast[3] between the background and the text must allow the vision impaired person to easily read the information. The contrast is right when it is easy to distinguish the object, picture or text on the foreground against the background. The

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[3] Examples of tools that can be used to analyse contrast mainly on websites: Colour Contrast Check, Contrast Checker, Check My Colours, Juicy Studio Accessibility. The above mentioned tools can be found online. Prepared on the basis of Fundacja Instytut Rozwoju Społecznego, *Narzędzia do badania dostępności i tworzenia dostępnych treści* [*Tools for accessibility research and accessible content creation*], Warsaw, June 2014.

examples of right contrast are, among others, black text against white background, blue text against yellow background, black text against yellow background, white text against blue background:

Text Text   **Text Text**   **Text Text**   **Text Text**

2.1.7. Tables

For a table to be legible for screen readers, follow the below rules:

- define header lines for tables – this allows to understand the meaning of the table cells being read out,

- use the "Repeat header row" function – when a table will occupy more than one page of the document, the header row will automatically be repeated on subsequent pages,

- grid lines are visible to visually identify rows and columns; align text in columns to the left,

- numerical data is aligned to the right or to the decimal point.

2.1.8. Available PDF document

- Ensuring the availability of documents uploaded to websites is possible after appropriate preparation of a PDF file for the assistive technologies to correctly read out their contents (for example, correct read out of the document by the screen reader used by the vision impaired people).

- When creating the PDF-type document, for example on the basis of MS Word or MS Excel files, use the command **Save as** then in the field **Save as type**, select the PDF option, and once the button **Options** is clicked, check **Document structure tags for accessibility** and **Document properties** check boxes.

Below you will find an instruction, step by step, how to do it:
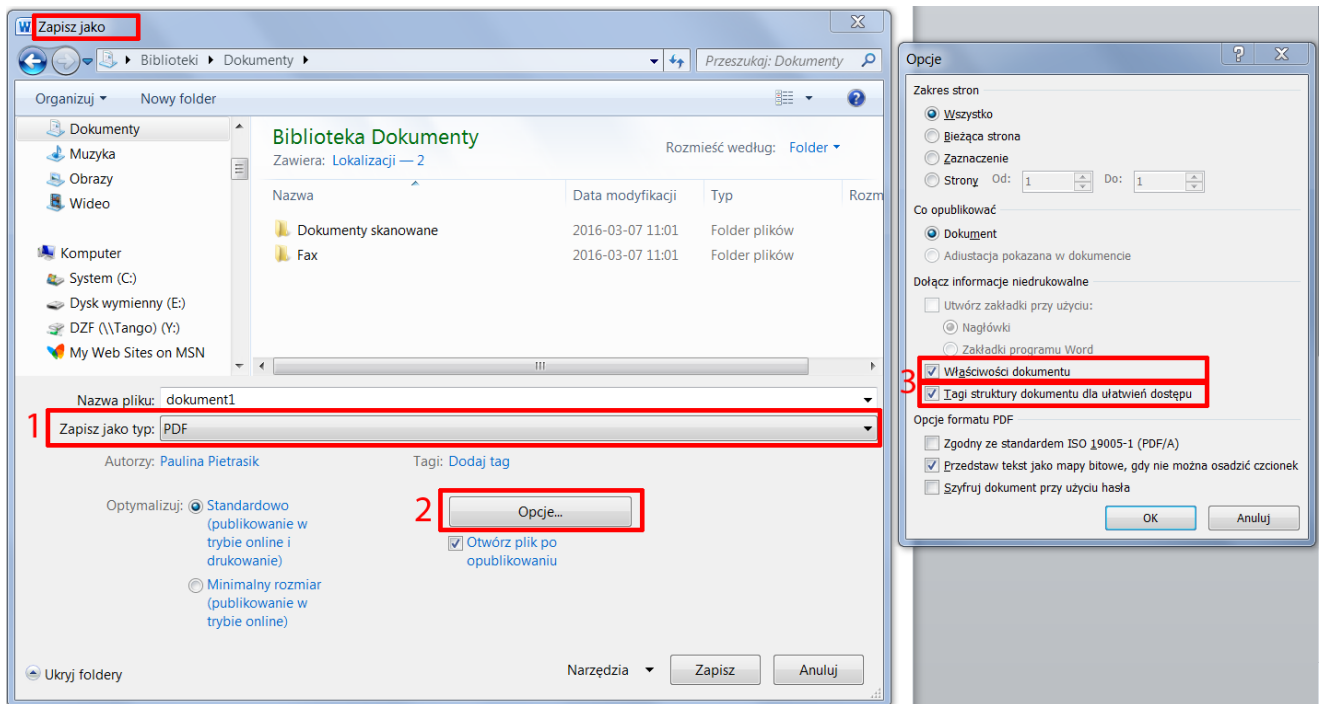
- When scanning a text document to PDF, remember to select the text-searchable scanning option. If your scanner does not have this feature, the PDF file created will be inaccessible to people with disabilities. In this case, use OCR, or print recognition software, and (after proofreading) save it to a text file.

- When sending a scanned document (for example, if a traditional document needs to be reproduced electronically), also include the document in a format that allows access to the text layer, for example RTF, ODT, DOCX, DOC.

If you wish to ensure that your information and recruitment material is more accessible, you may additionally provide it, for example:

- o in enlarged print,
- o in an easy-to-read language,
- o in Braille,
- o as recorded sign language interpretation on an electronic medium.

This is particularly important when you know that among the recipients of the information there are people for whom such forms of information reception are a significant facilitation (e.g. your project is addressed to people with disabilities or the information and promotion activities are an important element of the project you are implementing).

2.2. Outreach events

When organising events (e.g. conferences, information meetings) ensure that:

a) they take place in locations / buildings where:

- the entrance to the building is at ground level around the building and, if there are stairs in the building, there is a lift, ramp, ramp platform or manual stair lift and staff trained in its use,

- there are accessible toilets on the floors accessible to persons with disabilities,

- as far as possible, there are no protruding display cases, advertisements or decorations in the corridors which could be an obstacle to people with disabilities,

- an induction loop and the service of a Polish Sign Language interpreter (or alternatively the service of a video interpreter) is provided,

- it is possible to enter and participate with an assistance dog,

- the support of an assistant is provided.

Practical information

- If a sign language interpreter services are provided – the place designated for the sign language interpreter should be prepared in advance and well lit (spot lighting) so that he/she is clearly visible and can hear well himself/herself.

- If the event is multilingual, the language interpreter will speak the foreign language or simultaneous interpretation will be provided via headphones.

- An induction loop should be installed at service points, information points and in meeting rooms. If a room is not permanently equipped with such a solution, it is possible to equip it with an induction loop for the duration of the event. Induction loops must comply with EN 60118-4.
- Ensure that the most important information is available in Braille or as an audio recording and in easy-to-read text.

b) materials providing information about the event (e.g. invitations, posters, flyers, press announcements):

  - are available in an electronic version,

  - include contact details of the organiser (at least 2 channels of contact),

  - include a map and directions on how to get to the venue by public transport and from different directions by car,

  - include information on the accessibility of the building (venue) where the event is to take place,

  - are prepared in accordance with the guidelines under point 1.
    Information about the project

c) communication with potential participants took place through at least two means of communication (e.g. telephone, email; social media information),

d) multimedia presentations presented at the event were accessible, i.e.:

  - contained unique titles for each slide,

  - contained limited amount of text per slide – maximum 4-6 lines,

  - contained short sentences / sentence equivalents,

  - contained large, sans-serif font – minimum 18-20 point (e.g. Helvetica, Arial, Verdana, Tahoma without shadows),

  - maintained contrast between font and background,

  - had high quality graphics, large images with mandatory alternative text.

e) films and multimedia included audio description (wherever the information carried by the image is important for the recipient and has cognitive significance), and in the case of simple film material, where the image is only a "background" for the statements of people, it is enough to provide good soundtrack to the material – introduce the speakers, read out the web pages, project titles, logos on the final board,

f) the material from the event is also available to participants in the form of an accessible file (sent by email or made available on a disc),

g) if the event is pre-registered (the possibility to participate is provided for participants who have pre-registered), there is the possibility to declare a special need of participants, which means that at least one of the questions on the registration form (application form) concerns individual special needs of participants. The declaration of a special need obliges the event organiser to meet this need to the greatest extent possible.

Practical information
The special needs question could look as follows:

What could we do to make you feel comfortable with us? Please tick the service you require:
- Polish Sign Language interpreter ☐
- Sign Language System interpreter ☐
- induction loop, ☐
- enlarged text, ☐
- the support of an assistant, for example: a blind person, a deaf-blind person, a person with physical disability, ☐
- special catering needs, ☐
- other …………………………………………………..
- preferred form of contact: phone ☐   email ☐   SMS ☐

2.3. Media campaigns (films, video blogs)

A media campaign targeting people with disabilities or addressing disability issues involves people with disabilities (for example, celebrity endorsement – not only with physical disabilities but also intellectual disabilities). It is forbidden to involve actors/extras playing a disability. To make your media campaign accessible, apply the following principles:

- promote the rights and dignity of people with disabilities, their ability to work and to function fully in society, combat stereotypes in the form of presenting a person with disabilities in need of support (only as poor, sick, clumsy, in need of help and support),

- try to use language that is understandable to the average citizen (as little specialised vocabulary as possible, avoid complicated syntax, use natural sentence formation),

- run it on the basis of a diversified message (use at least two sensory channels such as sight, hearing) and appropriate information channels (depending on the form of the campaign, for example professional services, dedicated to deaf people, autistic people, etc.),

- provide audio description for each recording,

- provide live captions for any online broadcast of the event.

Good practices

A helpful breakdown of sensory channels is:
- Deaf and hard of hearing people – social media, captioned material, spot in sign language rather than interpreted into sign language,
- Blind and vision impaired people – radio, text-based material on the internet,
- Deaf-blind people – Internet.

NOTE! In case of auto description, the recipient can switch it on and off as needed at any moment. The recording should have an information on how to do this.

3. How do we ensure accessibility of training?

3.1. Information about the training

To prepare accessible training information, apply the principles described in item 2.1. *Information on the project – in printed and electronic form* and 2.2. b-c) *Outreach events*

Good practices

- Information materials are also aimed at family members, relatives, carers of people with disabilities, for example:
  If you know a person with a disability, tell them about the project. More information about the project available to .... can be found at ....
- Recording of an announcement with an invitation to participate in the project in the form of a video with captions or audio – for people who cannot attend an information meeting; recording with captions in plain language – understandable for most people; recording with a Polish Sign Language interpreter – for deaf people.
- Placing information about the project on websites/portals used by people with disabilities.

3.2. Recruitment for the training

To prepare accessible recruitment documents and the recruitment process, apply the principles described in item 2.1. *Information on the project – in printed and electronic form* and 2.2. *b-c) Outreach events*

Remember to include at least one question about the specific needs of the project participants in the recruitment form.

Good practices

- In the recruitment process, the beneficiary informs local organisations/institutions working for the benefit of people with disabilities about the project.
- Questions in the recruitment forms/materials about special needs are formulated in such a way that people with special needs do not feel that their presence is a "problem" or a "hassle", for example:

What can we do to make you feel comfortable with us? Please tick the appropriate option:

- architectural accessibility, for example: entrance at ground level around the building, ramp, lift,
- preparation of information/training materials printed in a larger font than standard one,
- materials in Braille,
- Polish Sign Language (PJM) interpreter
- Sign Language System (SJM) interpreter
- induction loop,
- the support of an assistant, for example: a blind person, a deaf-blind person, a person with physical disability assistant,
- the presence of a companion/assistant for the person with a disability,
- special dietary needs,
- provision of facilities for an assistance dog,
- other, for example: extended support time due to the need for slower sign language interpretation, slower speech, lip reading.

- In the case of a person with a disability that makes it impossible or difficult to read the form independently, an employee of the entity to which the person has applied reads out the form, recruitment materials or other necessary documents.

3.3. Training materials

To prepare accessible training materials, apply the principles described in item I.1. *Information on the project – in printed and electronic form* and 2.2. d-f) *Outreach events*

3.4. Organisation of the training

If persons with disabilities participate in the project, adjust the way support is organised to their needs, taking into consideration the type and degree of disability of participants.

1. If there are participants with disabilities:

- take into account support for equal opportunities (for example: assistant of a person with disabilities, guide interpreter, assistive technologies),

- provide flexibility in forms of support (for example: extended duration of training – need for sign language interpretation, slower speaking, shorter training sessions, more frequent and longer breaks),

- provide psychological safety (for example: provide adequate space, increase the number of hours, provide a slower pace of the meeting or individual meeting for people with lower intellectual abilities),

- provide information on potential emergency situations, for example by indicating an emergency exit – in the case of people with cognitive or communication difficulties, ensure that the message is accessible.

2. All activities provided under the projects, take place in buildings (venues) as described in item 2.2. a) *Outreach events.* If you are unable to find a venue that meets these conditions, then choose a venue that comes closest to meeting the accessibility criteria, or where there is the possibility of using temporary platforms,

providing an assistance service to enable people with disabilities to participate freely in the training.

3. For online training, it is also necessary to take into account the specific needs of participants:

- if you organise a closed training (for a specific group of participants), when at least one of the participants reports such a need, provide interpretation of the training into Polish Sign Language,

- if you are organising open training (e.g. published on publicly accessible websites), provide both Polish Sign Language interpreters and captions.

Good practices

- It is good practice to prepare a guide, brochure or multimedia recording explaining how to use the facility. The material includes instructions on how to get around the building, where to find the entrance, the toilet, how to use the cloakroom. It is also a good idea to show what the signage system looks like. If an establishment has a "quiet corner", the guide should definitely include information about where it is located. The guide is also the best place to include a warning about sensory-challenging spaces, for example, where it can be extremely noisy, where you might encounter crowds. A map with a simplified building plan can be added as a supplement to the guide.

When preparing the guide, you can follow the following principles:

- the simpler the better,
- the guide contains photos of the outside and inside of the building,
- the photos are accompanied by a short description explaining what is shown in the photograph (text alternative). It is worth using the principles of creating "easy-to-read text" for this purpose,
- the photos are kept as simple as possible and framed so that there are no unnecessary elements,

- it is important to bear in mind the "literalness" of the information for people with autism, for example. When depicting what a cloakroom looks like, care should be taken to ensure that it is just a cloakroom and not a shop, a section of an exhibition and a waiting room,
- the guide is prepared to be available in both electronic and printed versions,
- in the electronic version, the guide can be in the form of a video, audio or virtual walk-through application (provided these are available).

4. How to ensure accessible project management?

4.1. Public procurement

1. Take accessibility issues into account already at the stage of the tender documentation (if applicable) – for example: social clauses (inclusion of a person with a disability in the execution of the contract), universal design (materials in electronic form with an audio-video "overlay"), etc.

Practical information

Examples of provisions in the Detailed Description of the Subject of the Contract.

- Due to the participation of persons with disabilities in the event, the entire event must be fully adapted to their needs, in particular the venue, conference materials, individual agenda items.
- When preparing all graphic materials, the Contractor shall comply with the rules of accessibility, i.e. to include in multimedia and printed materials enlarged fonts and the possibility to adjust their size, to use contrasts making it easier to read information for visually impaired persons.
- If possible, people with intellectual disabilities should be involved in the process of drafting information, text, messages addressed to them. The text should be supported by illustrations (photos, drawings, symbols) that best explain the text – a key word or idea.

- All the above-mentioned materials are to be prepared in a way that is accessible to people with various disabilities – primarily in terms of graphics, font size and colour, in electronic version, graphics in .jpg or other format, with alternative text embedded in.

  In addition, the Contractor's responsibilities shall include:

  o developing the event programme in Braille,
  o recording a short information about the event and inviting people to take part in it, as well as the programme of the event in Polish Sign Language in the form of a video lasting up to a maximum of 5 minutes, which will be able to be posted and played on the Contractor's website or a website dedicated to the event.

5. How to provide accessible websites, mobile apps and electronic documents?

Websites and mobile apps are digitally accessible when they meet the WCAG or Web Content Accessibility Guidelines. Currently, the version 2.1 of these guidelines is in force. They explain how to create websites and apps to make them accessible to people with disabilities, e.g. vision, hearing, movement disabilities, but also intellectual disabilities or cognitive impairments.

Below you will find sample descriptions of the requirements for websites, mobile apps and electronic documents to be digitally accessible. Some of the examples are written in specialised language and you may feel that they are difficult to follow. However, they are fully understood by professionals who develop websites, web services and mobile applications. If you are developing a mobile app, website or web service make sure that the developers/contractors hired for the execution of these

tasks are familiar with and apply the WCAG 2.1 guidelines in full. Full version of the guidelines can be found on the websites:

1. English version: https://www.w3.org/TR/WCAG21/
2. Polish version (authorised translation into Polish language): https://www.w3.org/Translations/WCAG21-pl/

Below we present the basic definitions that can be helpful for the understanding of WCAG guidelines.

Text alternative

Text equivalent of content in the form of a graphic file, audio file or audio-video file. For a picture it is most often an alternative text. For audio file it is transcription. For audio-video file it is transcription, textual description of the content presented in the film or audio description.

Audio description

Narration describing the visuals (visual layer of the graphic or video file) in the form of audio dialogue (audio file). In the video clips, audio description comprises part of the audio path of the video file (voice-over describes what can we see in the screen when there are no dialogues). For graphic files, audio description can be an audio file uploaded to a website or audio guide. During events (matches, concerts) audio description can be in the form of live broadcast on the radio, on the internet or provided directly by the person providing the description.

Transcription

Written recording of the audio path (audio or audio-video material) containing all dialogues and the description of the sounds important to understand the content of the audio content. Each statement has an author assigned.

Captions

Subtitles for a video file with dialogues and information on sounds that influence the understanding of the content included in the audio path. Captions include also information on the author of a given statement, if this information cannot be concluded from the visual.

Open/closed captions

Closed captions – ones that the user can turn on and off. Usually in the form of a file in appropriate format attached to a video file.

Open captions – embedded in the video. Cannot be turned off. Constitute a part of the visual layer of the video.

Textual description of the content presented in the video

Something more than transcription Contains transcription (description of the sound) and the description of the visual layer of the video.

Supporting software

Computer software eliminating the barriers in computer, tablet, phone use by blind users, visually impaired people, those with limited mobility and with other traits that influence the interactions between humans and the environment.

Reflow

Mechanism available in some computer devices (software) (also on tablets, smartphones, readers, etc.) allowing for re-alignment of text and non-text elements on the computer/tablet/phone/reader screen after zooming, in such a way for the reading of the content to require scrolling (moving the screen content) only along one axis (usually only up and down).

Focus

Refers to that element of the software/website/document that will be activated once a certain key on the keyboard is pressed. Examples of focus are form fields, selection

fields, buttons, links. Well-designed digital products have the focus frame visible, for it to be explicitly known which element "has" a focus.

Single pointer

Interaction with the device via single point of contact with the screen (one finger/pointer). The contact can be about single tap, double tap, longer pressing or path-based gesture.
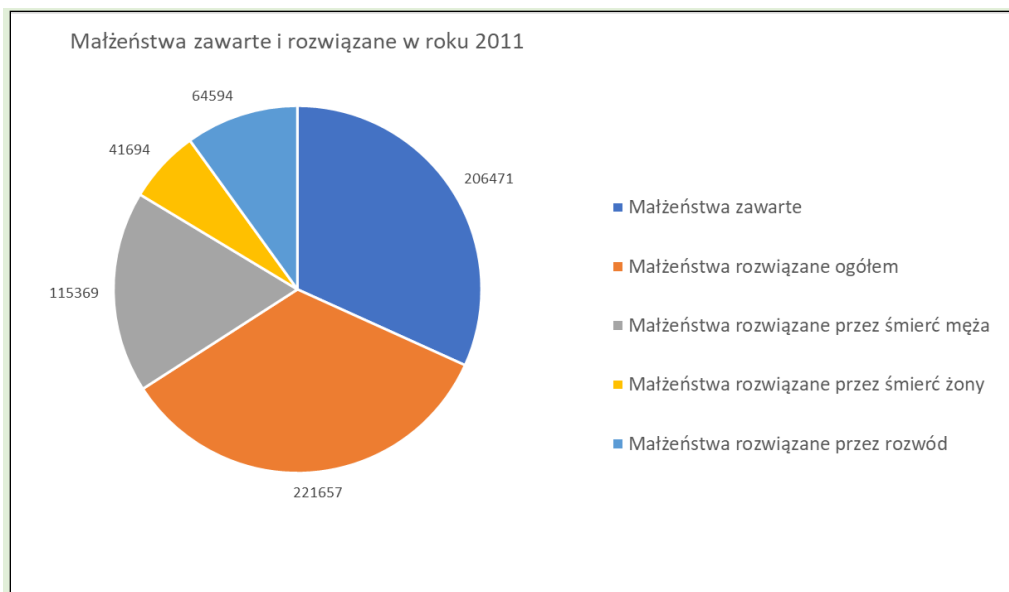
5.1. Websites

5.1.1. Text alternative

1. Non-text content such as pictures, drawings, schemes, graphs should have text alternative. It means that you should ensure all information that can be important for the user, such as description of the area that can be seen in the picture, the list of people in the picture, data presented in the graphs.

Good practices – examples of text alternatives

Example 1:

Pie chart – marriages contracted and dissolved in 2011: marriages contracted 206,471, total marriages dissolved 221,657, marriages dissolved by death of husband 115,369, marriages dissolved by death of wife 41,694, marriages dissolved by divorce 64,594

Małżeństwa zawarte i rozwiązane w roku 2011

64594
41694
206471
115369
221657

■ Małżeństwa zawarte
■ Małżeństwa rozwiązane ogółem
■ Małżeństwa rozwiązane przez śmierć męża
■ Małżeństwa rozwiązane przez śmierć żony
■ Małżeństwa rozwiązane przez rozwód

Example 2:

Alt="picture in which we can see high-celling room with huge windows during training on digital skills. An elderly pair (grey-haired man with a beard and glasses in white t-shirt and a woman in glasses in white shirt) sits in front of a screen at the desk. They are smiling, they look at a young smiling man in blue shirt. He hovers over the pair and shows something on the screen of the tablet he holds".

Source: http://funduszeeuropejskie.gosc.pl/doc/4241795.Szansa-dla-dojrzalych

2. Avoid CAPTCHA mechanisms.

   If this is not possible, the CAPTCHA mechanism should provide at least two solutions and have text alternative describing their purpose.

Good practices

- verification on the basis of behaviour analysis.

- verification on the basis of data provided by the user,

- verification being about re-entering the code that was sent to the mobile phone of the user,

- in case of traditional CAPTCHA, a text-based solution is recommended.

5.1.2. Audio and video files

1. Audio recordings containing statements (speeches, lectures, interviews) should be complemented with a text file containing the same information. Such a document should be a complete transcription of the recording and contain information on important sounds (claps, laughter, background noises).

2. To video recording with changing images but without sound (animation, virtual tour, promotional clip), add audio description or textual description of the content presented in the video.

Note

You do not have to add audio description / textual description to films with interpretation into sign language. You should, however, make sure that the user knows that the film in the sign language is an interpretation of a given text. A good practice is to upload a film in sign language and interpreted text to the same page.

Source: https://www.gov.pl/web/cyfryzacja/dzialania

3. In case all multimedia types (image and sound simultaneously) containing a voice-over or statements made by actors/figures, add captions. Remember to add audio description to all multimedia types (image and sound simultaneously).

Note

If a film is an interpretation of a text into sign language, you do not have to add captions and audio description. It is important for the use to know that the film is an interpretation into sign language.

The requirement to add captions does not apply to multimedia broadcast live. This means that you are not obliged to provide captions during the broadcast of the

Borough Council meeting. But if you publish the recording online after the Council session, you must provide captions for that recording.
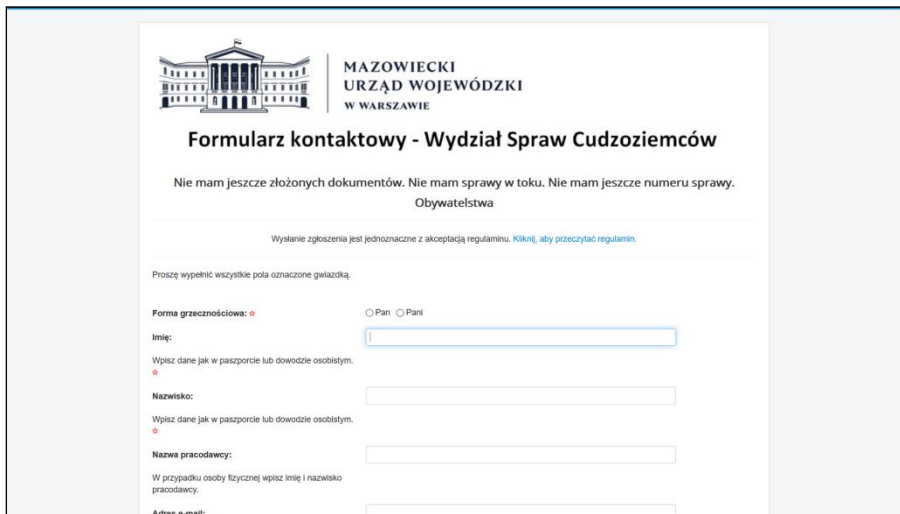
5.1.3. Adaptability

1. Label structural elements such as areas (landmarks), paragraphs, headings, lists, tables, links, groups of controls, forms and semantic elements such as highlights, quotes, superscripts or subscripts with the appropriate HTML tags designed for this purpose. Pay particular attention to the labels of form elements so that each form field/control is understandable to the user.

Note

The criterion described in WCAG as "info and relationships" requires that what is visible to one group of users (e.g. non-disabled users) should also be visible to other groups, including those who use assistive software, i.e. among others, blind people. This is a very important requirement. All users must receive equivalent content, although the methods of presentation may vary according to the characteristics of the users.

2. Wherever the order in which information is presented affects comprehension, this order must be readable by a computer program (e.g. assistive software).

3. Instructions given to the user should not be based solely on visual or auditory stimuli such as shape, size, visual location, spatial orientation or sound. For example, instead of: "press the large, round button" write: "press the large, round button that says Next".

4. Remember that content should not limit its view and action to one display orientation, such as portrait or landscape, unless a specific display orientation is necessary. The main purpose of this requirement is to allow the user to choose their preferred way of using the content.

5. Wherever the user enters data, provide a noticeable indication of the purpose (intended use) of the data entered. The requirement applies to forms. Web developers must provide accessible and understandable information so that

the user knows what data is to be entered into each form field. Pay particular attention to the programmatic linking of form fields to their labels/descriptions. This linkage must be unambiguous and readable by assistive software.

Graphic source: https://kontaktwsc.mazowieckie.pl/index.php/start/nie-mam-sprawy/nie-mam-sprawy-obywatelstwa/view/form.html

5.1.4. Distinguishability

1. Colour should not be used as the only visual means of:

- conveying information,
- indicating an action to be performed,
- signalling that a user response is required,
- highlighting visual elements.

In addition, the information conveyed by colour should also be made available in other ways, e.g. in the text content, in text alternative or programmatically. For example, incorrectly filled form fields must not only be marked with a colour (e.g. red), in addition a textual error message should be placed next to each such field.

2. Provide an easy way to stop or mute audio that automatically turns on and plays for more than 3 seconds. This also applies to commercials and other videos.

Good practices

No video or sound should play automatically on a website. This only happens at the request of the user, for example by using the play button

On the website, the sound can always be stopped by pressing the "Esc" button on the keyboard.

3. The contrast ratio between text and background should be at least 4.5:1 and for large text (font size at least 18 point) at least 3:1. This requirement does not apply to decorative text, which is an insubstantial part of an image or part of a logo or product (brand) name.

4. Use appropriate software to calculate the contrast ratio. There are tools available on the web with which you can check that the colours used on a website comply with the relevant accessibility levels. Free software is available at https://developer.paciellogroup.com/resources/contrastanalyser/.

5. Text size can be enlarged up to 200% without the use of assistive technologies and without loss of content or functionality. The requirement does not apply to captions or graphic text.

6. Use text instead of a graphical representation of the text, or from an image of the text, to convey information on the websites. This requirement does not apply where a graphical presentation of the text is essential for the understanding of the information being conveyed (e.g. when, the text is part of a diagram or chart). The requirement also does not apply to text that is part of a logo or product's own name.

Note

A graph published as a graphic must have text alternative to understand the data presented.

A photograph of Frédéric Chopin's letter to George Sand is an image of the text that can be published on the website. If the purpose of the publication is to present the content of the letter, the text alternative must contain the entire content of the letter presented in text form so that the user can read it. If the purpose of the publication is to present the appearance of the letter, the text alternative will be a brief description of the appearance of the letter.

7. Text wrapping (reflow) – the content can be presented without loss of information and functionality without moving in two dimensions.

   The requirement does not apply to graphics, maps, charts, video files, games, presentations, tables – these are elements that require two-dimensional presentation for content validity. The requirement also does not apply to interfaces for which it is necessary to retain toolbars during operation.

8. Contrast for non-text content – ensure the visibility of user interface elements that are not text. Such elements include buttons, form fields, toggles, social media icons, like icons, print icons, etc. All these elements allow the user to interact with the website and, therefore, they need to be visible.

9. The contrast ratio for such elements is a minimum of 3:1 (contrast between the colour of the element and the colour directly in contact with the element).

10. Text spacing – try to create web pages in such a way that changing the way text is displayed does not result in loss of content.

Some users use special software that allows them to change the way text is displayed on pages. Changing the way text is displayed makes it easier to read. Web developers must ensure that changing the following text properties does not cause content loss:

- line height (line spacing) at least 1.5 times the font size;

- paragraph spacing at least 2 times the font size;

- letter spacing at least 0.12 times font size;

- word spacing at least 0.16 times the font size.

11. If any content appears on the screen when the user hovers over another element with the mouse or keyboard focus, provide three features:

- the user can close (dismiss) the display of that element (e.g. with the Esc key),

- if the mouse pointer has caused additional content to be displayed, the user must be able to hover the mouse over this new content;

- the content that appeared after the mouse hover (keyboard focus) remains visible until the user closes it by themselves or when it is no longer valid.

Note

Make sure that on your website the elements displayed automatically when hovering the mouse also show up automatically when selected with the keyboard (Tab key). The illustration shows an example of a drop-down menu automatically displayed when hovering with the mouse and keyboard.

Source: https://www.kozieglowy.pl/
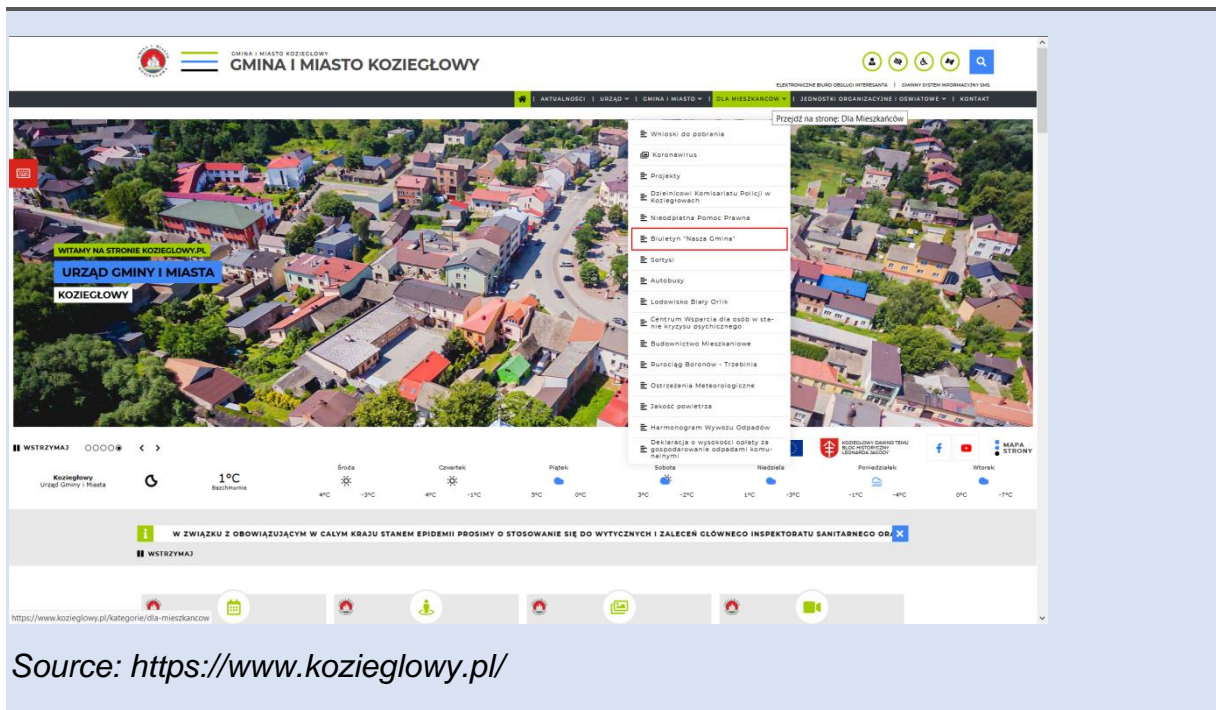
5.1.5. Functionality

1. Keyboard accessibility.

   The entire website and all its functions should be operable via the keyboard or keyboard interface. If a function can be performed using a mouse or some other pointing device, ensure that it can also be performed using a keyboard. Check document navigation, support for form interfaces, controls for media playback and the browser interface in which content is displayed. If keyboard focus can be moved to a page component via the keyboard interface, it must also be possible to move it outside of that component (so-called no keyboard trap).

This should be possible by using only the same interface, and if it requires more than the usual arrow keys, tab or other standard output methods, the user is informed of this way of moving the focus.

2. Single-character keyboard shortcuts – if there are single-character keyboard shortcuts on the website, ensure that at least one of the following conditions is met:

- provide a mechanism to disable the shortcut,

- provide a mechanism to change the mapping of a shortcut – this means that a single-key shortcut can be changed to a shortcut using a combination of a character key and a non-printing key (ctrl + x, alt + t),

- the shortcut is only active when the focus is received.

3. Sufficient time.

    If any function must be performed within a certain time (timeout), provide one of the following options:

- the user can disable the time limit before the time expires,

- the user freely adjusts the timeout (by at least 10 times the default value) before the time expires,

- the user is warned before the timeout expires and has at least 20 seconds to extend the timeout with a simple action (e.g. pressing the spacebar) and can extend the timeout at least 10 times.

Za 0:51 wylogujemy Cię z serwisu. Żeby tu zostać, kliknij dowolne miejsce.

Source: bank transaction service

Note

Exceptions to this requirement are:

- a situation where the time limit is a required component of some real-time activity (e.g. an auction) and there is no possibility to change the limit,

- a situation where the time limit is relevant and extending it would cancel or disrupt the activity,

- a situation where the time limit exceeds 20 hours.

Good practices

The online application system at the municipal office has a time limit for security reasons. A session expires 15 minutes after the last operation performed by the user. 30 seconds before the expiry of the session, a warning window appears with a button "Extend time". When it is clicked, the validity of the session is extended by another 15 minutes.

There is a checkbox "do not log me out automatically". When this is ticked, the system does not count down the time until the session expires.

4. If there is content on the site that moves, blinks, pans or is automatically refreshed, ensure that all of the following conditions are met:

- **moving, blinking, panning (scrolling)**
  For any moving, blinking, or scrolling information that (1) is triggered automatically, (2) lasts longer than 5 seconds, and (3) is presented in parallel with other content, provide a mechanism that allows the user to pause, stop, or hide the changing content except when moving, blinking, and panning is necessary.

- **Automatic refresh**
  For any auto-refresh content that (1) runs automatically and (2) is displayed in parallel with other content, provide a mechanism to allow the user to pause,

stop or hide, or control the refresh rate except where auto-refresh is a
necessary part of the activity.

5.1.6. Epileptic seizures

1. Frequent flashes or messages with a large number of flashes and a lot of red
   in general can cause, for example, epileptic seizures. Check for such flashes
   in projected films, multimedia presentations, etc. If they are more frequent than
   3 flashes per second, reduce their frequency.

Good practices

Avoid presenting content with a lot of high-frequency flashes.

Use software to check the frequency of flashes (including red flashes).

5.1.7. Navigability

1. In web applications and on websites, provide a mechanism to skip blocks of
   content that are repeated on these pages.

2. For each sub-page on a website or each new screen of a web application,
   provide titles that describe their purpose or present their subject matter.

3. If the order in which a page is navigated (the sequence in which a page is
   navigated) affects the comprehension of the information, provide an order of
   elements that take focus so that the user can understand the information.

Note

The requirement refers to elements that receive focus. Although almost any element
on a page can be made to receive focus, this should be avoided. Only elements with
which the user interacts and whose invocation (click, keyboard key, manipulator
activation) causes some event on the page should receive focus.

The order of focus has a significant impact on the use and understanding of the page. Therefore, the order of the focus should be modified with special care and consideration. Experience shows that a good solution is the order of focus, which is derived from the order in which the elements are arranged in the page code.

4. Every link leads to somewhere. If possible, provide a text link that unambiguously indicates where the link leads, without having to guess its purpose from the context:

- the description of the link must clearly indicate where the redirect will take place,

- a warning to the user that the page has been opened in a new window or tab is mandatory.

5. Provide more than one way to locate a page on a website, except when a page is the result of a procedure or one of its stages.

6. Headings and labels

   Headings can be one of the basic structural elements of a website. This is because they allow information to be structured and organised. Software used by blind people uses headings to navigate a page. Therefore, if headings are used on a page, they should describe the subject or content of a section of the website.

7. Ensure that the keyboard focus is visible so that a user using the keyboard knows what element of the web application or website is active.

5.1.8. Handling methods

1. If multipoint or path-based gestures are used to handle content, also provide the ability to handle with a non-path-based single-point touch gesture.

   A multipoint gesture is, for example, pinching to zoom the content out, swiping/tapping with two/three fingers, split tapping (one finger continuously touches the screen, the other finger makes a tap).

A path-based gesture is a movement that has a minimum of three points – a start, an intermediate point and an end, e.g. a 9-point based phone lock.
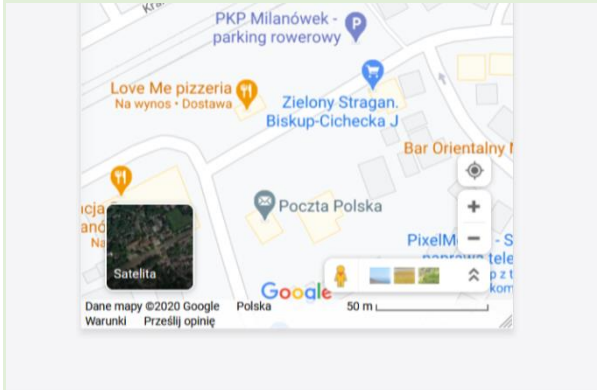
2. For functionality that is triggered by single-point touch, ensure that at least one of the following statements is true:

- no event: a press does not trigger any program/web response,

- interrupt or undo: the reaction of the program/web page is dependent on the release of the pressure and there is a mechanism by which the reaction can be interrupted or undone when the pressure is released,

- reversing the event: releasing the pressure reverses the reaction of the program/web page and restores the state from before the event,

- press is necessary: pressing is necessary to trigger the program/web response.

Note 1: Functions that emulate keyboard or numeric keypad presses are considered essential.

Note 2: This requirement applies to web content that interprets touch actions (i.e. it does not apply to actions required to support a user programme or assistive technology).

Note

In WCAG, this requirement is called "Pointer Cancellation". Its main purpose is to allow users to cancel a choice they have made with a single-point touch (mouse, manipulator, finger). It happens to every digital user to select/click/opt for an element by mistake. Web developers, in line with this requirement, must avoid solutions in which the accidental activation of a feature will be irreversible.

3. If there are elements on the page that have labels, make sure that the content displayed in these labels is the same or contained in the available names linked to these elements programmatically.

4. If a digital product has functionality that can be operated by device movement or user movement, ensure that it can be operated by user interface elements, and that motion responsiveness can be disabled to prevent accidental activation.

Note

Exceptions to this requirement are when:

the movement is used to operate the functionality through an interface supporting accessibility,

the movement is [necessary](#) for the functionality and this would invalidate the action.

5.1.9. Readability

1. When building a website, make sure that the developer takes care to define the language for the whole as one and the same language (for pages in Polish – Polish, in English – English, in German – German, etc.).

   If parts of the content are published in a different language (e.g. German quotes on a Polish page), appropriate tags should be used to mark foreign-language passages.

5.1.10. Predictability

1. Ensure that moving the focus to any user interface element does not change the content of the page in a way that may mislead or confuse the user.
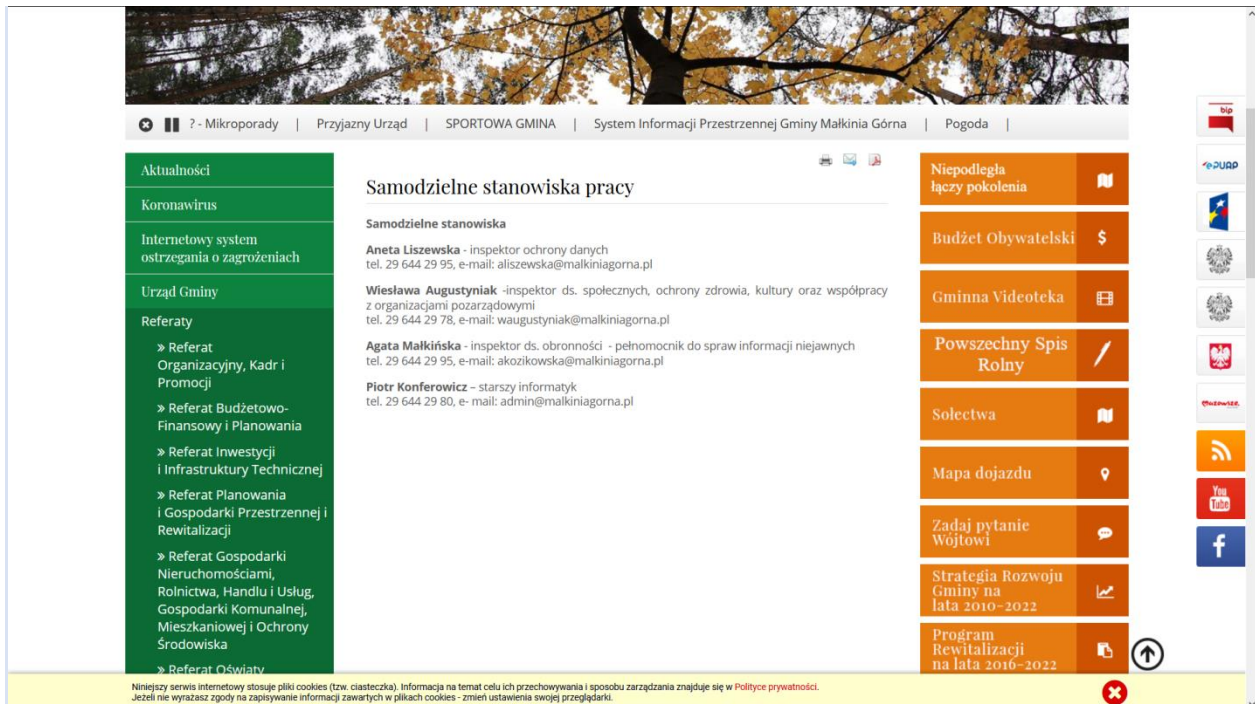
2. The navigation elements of a page/application must be placed in the same place on the page (visually and in the page code) throughout the website.

3. Ensure that components that perform the same function on a given website and appear on many of its sub-pages or appear in web applications are consistently and repetitively named and presented in all places where they appear.

Example

Icons – print, contrast versions etc. are identically labelled on every sub-page of the website.
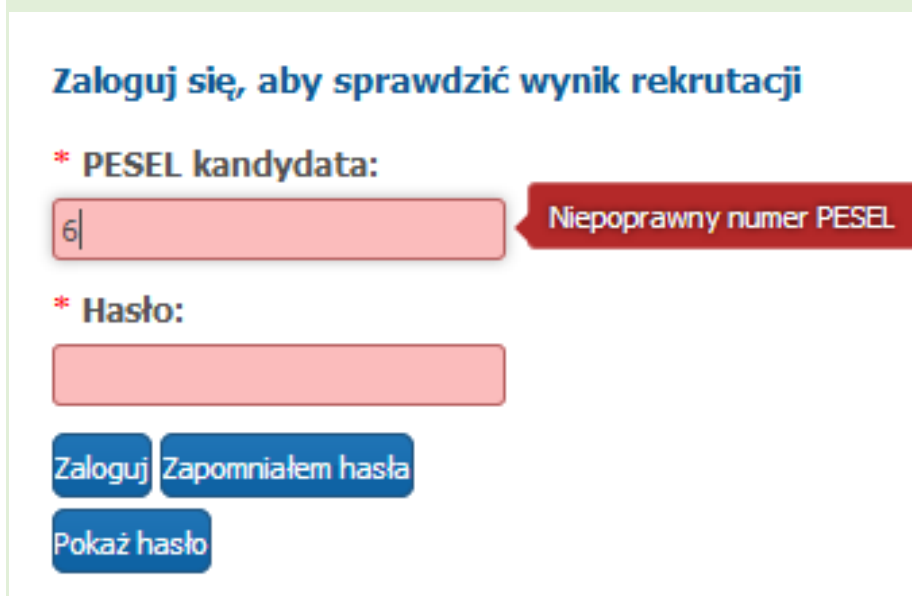
5.1.11.   Help with entering information

1. If there is a user-fillable form on the website or web application, ensure that any input error that is detected automatically is indicated. Indicate the erroneous element (e.g. by highlighting it in a different colour) and provide a description of this error in a text form.

Good practices

A user fills in an application form for a child to be admitted to kindergarten, but forgets to enter the child's PESEL number. After clicking on the submit form button, an alert window is displayed with the message "PESEL number missing. Enter it as a string of 11 digits." and the OK button. When it is clicked, the keyboard focus is moved to the rubric labelled "Child's PESEL number" and the user can now enter it. The box is marked in red so that it can be easily found by eye.

Remember – the error message on the form should be structured in such a way that it is also noticeable to blind users. If the message is displayed in a new window or modal window, it is important that it contains at least one element that can receive focus and that the focus is automatically set at the beginning of the error message. If the error information is displayed as status information (without changing the context), then WAI-ARIA techniques should be used, e.g. role=ariadialog.

Source: https://warszawa-przedszkola.pzo.edu.pl/formico-parents/main.action

2. If, on web pages, the user:

- makes legal commitments,

- carries out financial transactions,

- modifies or deletes data contained in data storage systems,

- enters test responses,

ensure that at least one of the following mechanisms is available:

- the data entered can be withdrawn,

- the data entered by the user is checked and the user can correct any errors; the user can check, correct and validate the data before sending them.

5.1.12.   Robustness

1. Any content created using a markup language (CSS, HTML, XHTML, XML, MathML, MusicXML) must be syntactically correct, that is it has to:

- have complete start and end tags,

- use tags and attributes according to their specifications,

- ensure that attributes are be duplicated,

- ensure that each element must have a unique ID.

These conditions do not have to be met if the language specification allows it. Verification of this requirement is best done automatically using a validator. Modern editors have, among other things, built-in validators.

Good practices

If standard HTML tags and attributes are insufficient to ensure an adequate level of accessibility, WAI-ARIA technology should be used.

2. User interface components (e.g. form elements, links, script-generated components) are created so that their name, role, state, properties and values are accessible to assistive technologies. This requirement applies to web developers who create their own user interface components or use off-the-

shelf solutions from other developers instead of standard controls. Standard HTML elements meet this criterion.

Note

It is necessary to ensure that all components from which an application or service is built are available. There is a group of web services that includes other, often external services with their own interfaces. The primary service uses such solutions, for example, to process payments for purchases. It must not happen that the primary service is completely accessible, while the additional service has a lack of accessibility. Then, despite the accessibility of the primary service, the whole will be inaccessible.

5.2. Good practices in mobile app design

- Limit the number of elements displayed on each screen/view of the app.

- Ensure a reasonable font size – approx. 16px for plain text.

- Ensure controls are reasonably sized – minimum size of about 9 mm x 9 mm. Also provide inactive space around controls of minimum size.

- Adjust links to fit within the available width of the screen.

- Place form fields under, not next to, their labels.

- Ensure that the ability to zoom in on content with a "pinch" gesture is not disabled.

- Ensure that the application supports system font size settings (if the user has selected a font size of 200% in the system settings, the application must also display magnified fonts).

- Provide on-screen controls for increasing and decreasing font sizes.

- Provide higher contrast values than those specified in WCAG 2.1. Mobile devices, by virtue of their main feature – mobility – are used in a variety of settings, including unfavourable lighting conditions (e.g. in harsh sunlight).

- Ensure that all application functions can be operated using an external keyboard or alternative on-screen keyboard and pointing devices (mouse, etc.).

- Ensure that the gestures used to operate the application are as simple as possible. Optimally, all gestures should be one-touch.

- Ensure that all application functions are only activated when you release touch (the so-called touchend/mouseup event).

- If an application requires special gestures to trigger a function (e.g., a panel with function buttons, slide-out with a finger from the edge of the screen to the centre of the screen), provide information and instructions for the user to be aware of such a functionality.

- If the application uses movement of the device to operate (e.g. shaking), at the same time it must provide keyboard or touch support for these functions.

- Convenient button locations – ensure that the interface can be adapted to the needs of different users (right/left-handed, small hands, fat fingers, etc.).

- Ensure applications work correctly in both orientations of the device. Some users only work in one orientation.

- Take care to place app controls consistently across all screens/views of the app.

- Position the app controls so that you do not have to scroll the screen to use them. At the same time, ensure that the controls do not take up too much space (i.e. do not obstruct the screen).

- Avoid displaying anything that is not the main content at the same time as the main content. If the app displays a message, it may be better to display it across the screen so that the user has to close that message (screen) before continuing to use the app.

- Make sure that if there is a message on the screen, the button to close the message is visible and accessible at high screen magnification.

- Group active items together if they lead to the same place. Instead of creating two separate buttons (header as a link and "read more" as a second link, leading to the same place), create one clickable object.

- Take care of the visibility of clickable elements – if an element is active, use different methods to make the activity of the element visible and unambiguous (shape, text, colour, label, infographics, etc.).

- Provide a virtual keyboard to match the data input (if the user has to enter a phone number, display only the numeric keypad).

- Reduce the need to type wherever possible (use pick lists, check boxes, automatically retrieve and insert data – time, date, location).

5.3. Electronic documents

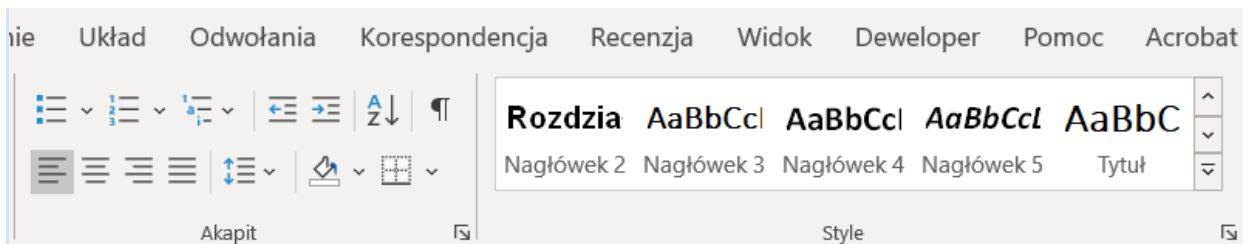### 5.3.1. Documents prepared in word processors

1. Use structural elements in documents as intended and make use of technologies available in word processors – headings, paragraphs, bulleted and numbered lists, links, footnotes, tables of contents, tables.

Note

Use the features available in the software – styles for headings, automatic lists, insert table, insert caption, spacing, etc.

Rozdzia   AaBbCc   AaBbCc   *AaBbCc*   AaBbC

Nagłówek 2   Nagłówek 3   Nagłówek 4   Nagłówek 5   Tytuł

Akapit   Style

Source: Fado Social Cooperative's own resources

Separate paragraphs with the "paragraph spacing" function instead of using Enter key.

In short documents where it is pointless to mark sections with headings, you can abstain from this (e.g. single-page documents).

2. Use colours in accordance with WCAG minimum requirements – for text a minimum of 18 point or a minimum of 14 point bold 3:1, for others 4.5:1.

Use contrast requirements also for all non-text content-bearing elements – charts, infographics, diagrams, controls, buttons, form fields, etc.

Note

You can use special software to verify the contrast ratio. You can find free software for non-commercial use and paid software for commercial use on the Internet. The safest colour combination is black fonts and a white background.

3. Use descriptive links whenever possible and when the link is not a proper name.

Good practices

Link https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:32019L0882&from=PL

change to "European Accessibility Act".

Do not change the link www.allegro.pl, as such a link is a proper name.

4. Use sans-serif fonts, minimum size 11 point for plain text. For highlights, headings, quotations use fonts of the same typeface, but larger, in bold.

5. Provide text alternative for all non-text elements:

- photos, graphics – provide text alternative succinctly describing what the photo depicts (you add the alternative text in the photo/graphic properties, newer editors have a direct link to the alternative text in the right-click menu).

- charts, diagrams – you must provide a text alternative to make the chart/diagram completely understandable. The text alternative can be placed in the properties of the graph/diagram or in plain text under/above the graph.
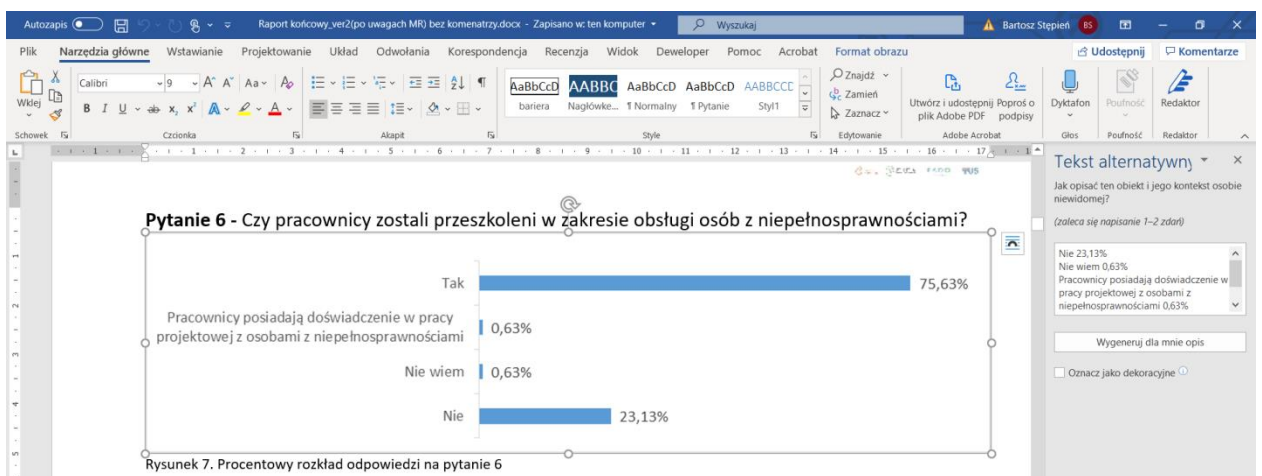
Source: Fado Social Cooperative's own resources

- decorative elements – the latest versions of text editors allow you to mark graphics that do not contain any content as decorative. Use this feature to "hide" decorative graphics from assistive technologies.

6. Tables – use only simple tables, without merged cells. Give each table a header row (check the "repeat header rows" option). It is good practice not to split rows between pages.

Source: Fado Social Cooperative's own resources

7. Multimedia – if you include multimedia in your document, give them a short text alternative to inform about their content. When doing so, remember that multimedia must also meet other alternative text requirements. These requirements are described in the "Multimedia" section.

Source: Fado Social Cooperative's own resources

8. Language – create documents that comply with the principles of simple communication.
9. Export to PDF – make sure the option to export tags and properties is checked when exporting (this option is checked by default).
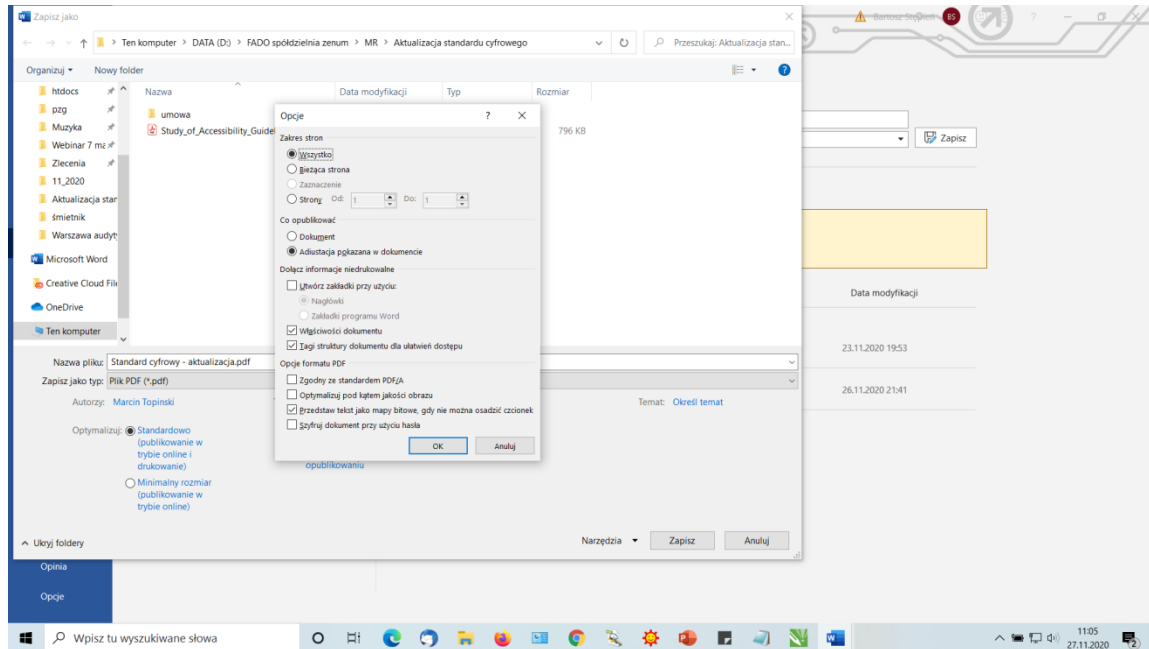
Source: Fado Social Cooperative's own resources

5.3.2. Spreadsheet

1. Provide alternative descriptions for anything that is not text. Rather, the alt of the chart should be its name, something that makes it easy to understand what the chart represents. The chart itself in Excel is readable. When you transfer the chart to another program, transfer it as a bitmap (graphic) and add alternative text.
2. Provide understandable links (rules as in Word).
3. Ensure sufficient contrast between text and non-text elements.
4. Give all sheets comprehensible names.
5. Use tables – keep them simple. Give tables headings and add alternative texts.
6. Avoid merging cells. Avoid blank cells.

7. PDF – exporting charts to pdf format basically makes them impossible to understand when reading out the PDF. Export as bitmaps with text alternative.

5.3.3. Presentations

1. When creating presentations, add slides using built-in styles – this ensures proper structure and order.
2. Provide unique names for individual slides.
3. Provide alternative descriptions for everything that is not text (same rules as in word processing programmes).
4. Provide understandable links (rules as in word processing programmes).
5. Provide sufficient contrast for text and background, graphic elements and background, etc.
6. Keep the structure of tables simple. Give tables headings.
7. Avoid merging cells. Avoid blank cells.
8. Check the read-out order.

Note

In PowerPoint, the read-out order is shown in reverse.
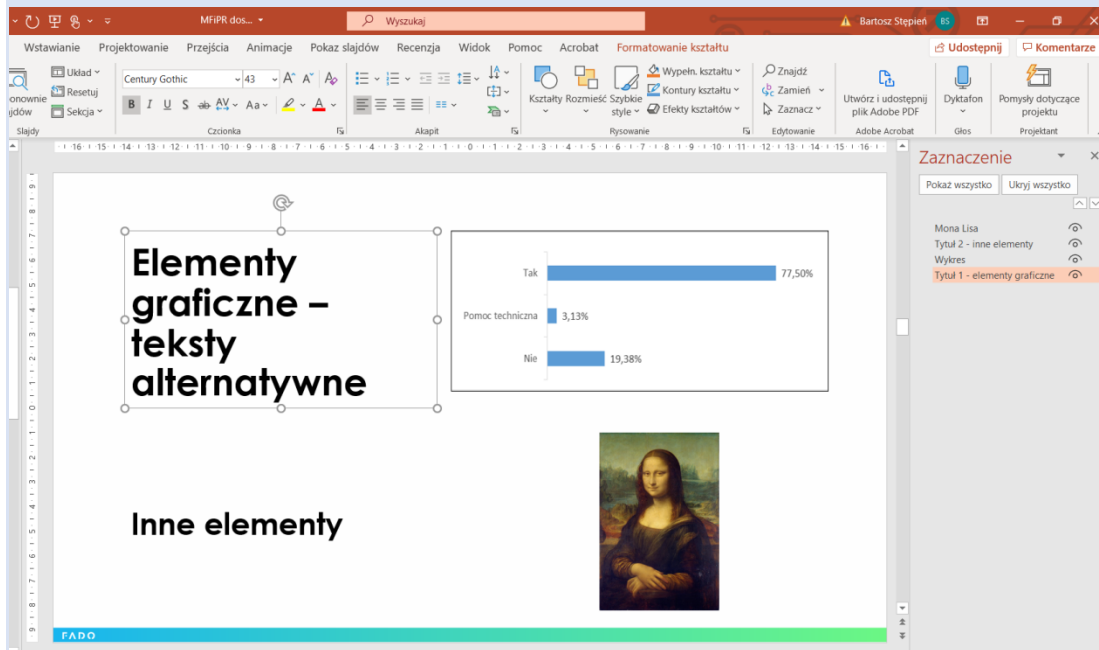
Source: Fado Social Cooperative's own resources

9. Specify the name and author of the presentation.
10. PDF – export with tags and structure.

5.3.4. PDF

PDF is a technology that allows textual, graphic and multimedia data to be presented in the same way on many different platforms. Although it is possible to create documents in Adobe Acrobat, this is rather rare. Acrobat Reader is primarily a PDF document reader.

Create PDF documents in editors designed for this while maintaining accessibility rules. Usually, when such a document is saved/exported to PDF format, the accessibility elements are correctly configured.

Note

Remember that PDF can be a difficult format when it comes to ensuring accessibility, especially when it is a complex publication, rich in graphic elements, interactive elements, decorative elements, etc. Creating documents with a simple structure, devoid of visual embellishments, while maintaining the natural layout of the content (top to bottom, left to right) supports accessibility. **PDF documents should comply with the PDF/UA (universal accessibility) specification.**

1. Fonts – use sans-serif fonts, minimum size 11 point for plain text. For highlights, headings, quotations use fonts of the same typeface, but larger, in bold.

2. Forms – make sure form fields have proper labels and instructions if necessary. Also make sure properties are correctly labelled (e.g. required fields, input validation). Ensure that the user is informed in the event of a data entry error. Ensure that the form can be fully handled using only the keyboard.

3. Language – correctly specify the language of the document and the language of the text passage if the document is multilingual.

4. Colours and contrast – use colours in accordance with WCAG minimum requirements – for text a minimum of 18 point or a minimum of 14 point bold 3:1, for others 4.5:1.

5. Contrast of non-text elements – use contrast requirements also for all non-text content-bearing elements – charts, infographics, diagrams, controls, buttons, form fields, etc.

6. Links – use descriptive links whenever possible and when the link is not a proper name. If you must publish links in their original form, use alternative descriptions for links.

7. Multimedia – if you include multimedia in your document, give them a short text alternative to inform about their content. When doing so, remember that

multimedia must also meet other alternative content requirements. These requirements are described in the Multimedia section.

8. Orientation and zooming – ensure that the PDF document behaves correctly when changing the display orientation and during the reflowing of content.

9. Check the document with free validators available on the internet.

10. Structure – use structural elements as they are intended – headings, paragraphs, bulleted and numbered lists, links, footnotes, tables of contents, tables.

11. Tables – ensure that tables have labelled header cells and correctly configured relationships between header cells and content cells.

12. Alternative texts – provide text alternative for all non-text elements:

    a. photos, graphics – text alternative succinctly describing what the photo represents.

    b. charts, diagrams – you must provide a text alternative to make the chart/diagram completely understandable. The text alternative can be placed in the properties of the graph/diagram or in plain text under/above the graph.

    c. decorative elements – mark as artefacts (decorations).

13. Test PDF documents with assistive technologies – at least screen readers on desktop computers and mobile devices.

14. Title – define the title of the document in its properties.

15. Bookmarks – create bookmarks in documents.

16. Comprehensibility – create documents that comply with the principles of simple communication.

17. Tags – make sure all elements in the document have been given the correct tags, that the order in which the tags are arranged (read) is correct. Remove empty tags.

Note

A PDF document created from a scanned document does not meet any of the above requirements.

5.3.5. Multimedia

Multimedia are digital resources that contain moving (time-varying) video or audio or both media simultaneously. These include animations, podcasts, films, broadcasts of events.

1. Audio only (a recording of people speaking)

If you publish recordings as audio files, add a transcription of the recording.

Source: Fado Social Cooperative's own resources

2. Audio only in a video file (a recording of people speaking)

If you publish audio recordings in video file format (audio only, still image), add captions or a transcription of the recording.

3. **Audio only (recording that does not contain human speech, e.g. sounds of a forest)**

Provide textual information indicating that there are no spoken words in the recording.

4. **Video only (there may be sound in the video, e.g. background music, but no people speaking, sound does not carry information)**

Provide audio description or textual description of the content conveyed by the video.

Good practices

Animation showing the workings of gears – the film has background music but otherwise no content is conveyed through sound. An audio description or text description should be added to the video to allow the understanding of the video.

Source: https://www.youtube.com/watch?v=tjNsUzxRjfw&t=22s
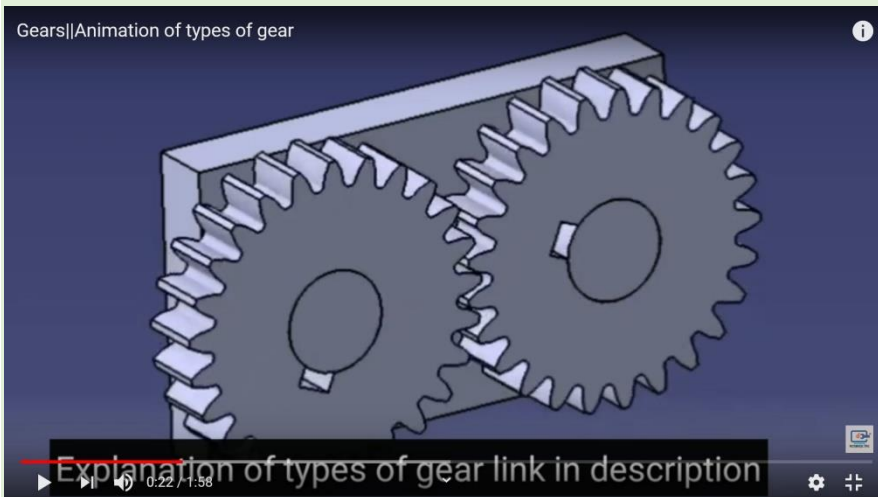
5. **Multimedia (films, animations, video presentations, etc., image and sound are synchronised and there are spoken statements).**

Add captions to each video (subtitles for deaf people).

Add audio description to each recording.

Note

You do not need to add captions and audio description to live broadcasts, although it is good practice.

For recordings containing music, add information about the song, the author, the mood of the music, the lyrics.

If you publish a recording in sign language that is an interpretation of a text, do not add captions or a transcription to such a recording. Provide only textual information that the video is in sign language and is an interpretation of the text.

If the sign language recording is a statement made by a deaf person, then add captions or a text alternative in the form of transcription of the speech

Source: https://www.youtube.com/watch?v=tkBQSYp4a-g&t=441s
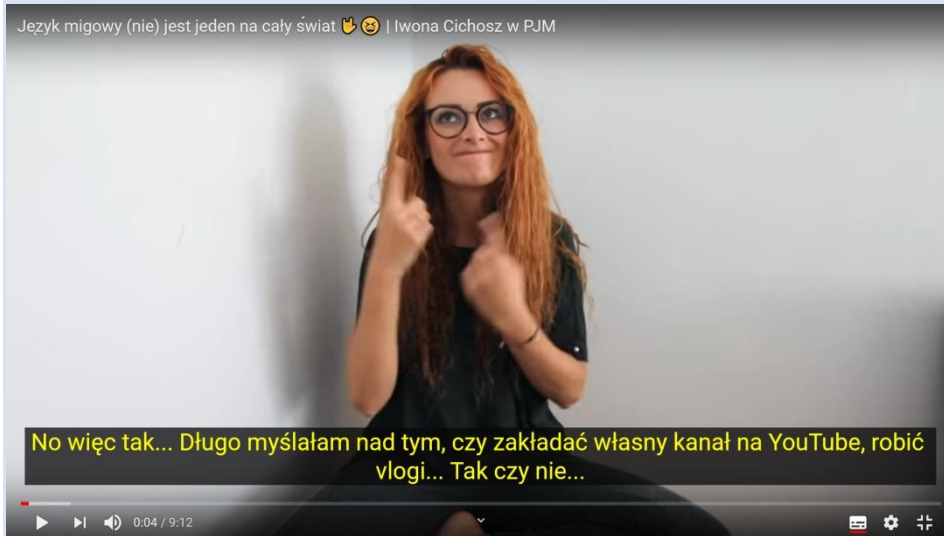
6. Captions

As far as possible, closed captions should be used, i.e. captions that can be switched on and off by the user. Captions shall meet at least the following requirements:

- the captions shall be placed at the bottom of the screen,

- the font used for the captions shall be legible, preferably sans-serif, in white on a black background or with a black outline,

- a line of subtitles should not contain more than 40 characters. 2 lines of text may be displayed at the same time, and if the main message is contained in the statement, it may contain 3 lines,

- a single caption shall be displayed for no less than 1 second and no more than 7 seconds. The display time should be matched to the length of the text and allow for comfortable reading. Do not exceed 180 words per minute (20 characters per second). Try not to use more than 160 words per minute (18 characters per second)

- captions include all oral statements and information on sounds relevant to understanding the content,

Source: https://www.youtube.com/watch?v=wUIqlNbrTok

- dialogues are preceded by a hyphen. If it is not possible to deduce from the image who is speaking, the person is marked with the corresponding colour or identified in some other way (name, nickname, character).

Source: https://www.youtube.com/watch?v=wUIqlNbrTok

7. Audio description

- the voice-over describes what can be seen, without interpretation, unless this is necessary to understand the content,

- the voice-over is included the audio track in such a way that it does not interfere with the main track,

- the voice-over should not be significantly louder or quieter than the main audio track,

- if there are subtitles in the recording (title sequence, end credits, etc.), they should be read out by the voice-over,

- if all the content required to understand the visual content is included in the audio track, an audio description is not necessary.

Good practices

When preparing the script for a film, allow time for audio description – arrange the scenes, statements, sound of the film so that there is space for additional verbal description. For example, an animation in which the voice-over speaks throughout the film is not suitable for audio description.

8. Sign language

Good practices

In key recordings and live broadcasts containing verbal information, sign language interpretation is provided. Key recordings and live broadcasts are those that are the main product of the project or allow the main objective of the project to be met. The sign language interpretation should meet at least the following requirements:

- the interpretation is into sign language – Polish or another language, if necessary. Do not present information in Sign Language System,

- the interpreter shall be visible at least from the waist upwards,

- the interpreter is positioned in the bottom right-hand corner of the screen. If this is not possible, for example in live broadcasts, he or she may also be

visible elsewhere. This rule does not apply when the interpreter is the only element of the picture;

- the size of the interpreter must allow a clear view of his/her hands and face:

    o the figure of the interpreter reaches at least halfway across the screen in the horizontal axis,

Source:
https://www.youtube.com/watch?v=nItWanvoPoQ&feature=youtu.be&fbclid=IwAR3yL AMve507IexzVMzo6XaMh8fWeirprEAW-YFb9ixIPHK6srV9ay6fXHY

   o if there is no relevant information in the visual content of the film (e.g. a film with the so-called "talking heads"), the interpreter may take up most of the screen,
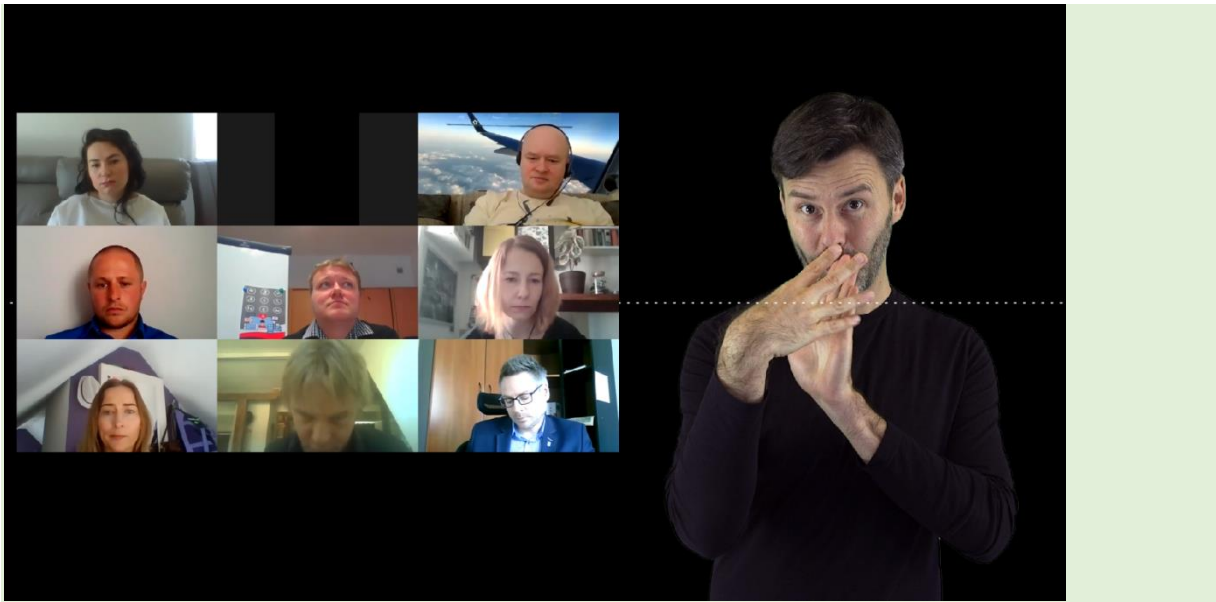
Source: Fado Social Cooperative's own resources

- o the interpreter's outfit supports the visibility of his/her hands – dark colours, close-fitting clothes, no distracting/obstructive elements (long cuffs, etc.),
- o where possible, the background behind the figure of the interpreter is uniform and dark (avoid keying, design so that after keying the interpreter is still on a uniform background),
- o as far as possible, use technology that allows selection between the source material and the interpreter.

5.3.6. Special-purpose IT equipment

Special-purpose IT equipment is equipment specialised to perform a specific function, usually self-service and available to the public. These include information kiosks, queuing machines, ticket machines, ATMs, among others. They are also devices used privately, but with a closed design and limited interface, such as printers, routers, players, speakers.

1. All functional elements of the device (e.g. buttons, levers, feeders, ticket drawers) must be labelled visually (contrasting sign, lettering) and tactilely

(using a convex graphic symbol or Braille). The label shall be placed above or to the left of the item being described.

2. If the device has been equipped with assistive technology, the assistive technology activation buttons should be labelled (convex Braille and convex symbol and visually, taking into account contrast and size).

Source: MPK Łódź

3. The contrast ratio between the text and the background on the housing or on the buttons shall be at least 4.5:1 and for large text (font at least 18 point) at least 3:1. This requirement does not apply to decorative text, which is an insubstantial part of an image or part of a logo or product (brand) name.

    Use appropriate software to calculate the contrast ratio.

Good practices

You can use free software for this purpose, available at:
https://developer.paciellogroup.com/resources/contrastanalyser/

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4. Functions are operated using the keyboard or keyboard interface

    If using a physical keyboard in QWERTY layout, at least the "F" and "J" keys must be marked.

If using a physical keyboard in a T9 layout, at least the key with the number "5" must be marked.

5. Functions performed with a mouse or pointing device are alternatively also operated with the keyboard.

6. All functions of the device shall be operable with one hand (the device shall not require two hands to operate simultaneously). This requirement does not apply to devices where two-handed operation is necessary (e.g. gaming machines), but devices should be designed so that their manipulators do not require gripping/holding.

7. The device is equipped with assistive technologies, including at least a voice guide or screen reader. The manner in which one can enable assistive technology should be obvious to the user.

8. All buttons/keys/manipulators should be placed within reach of the user's hands in such a way that they can be operated by all concerned, including short people and wheelchair users (at a level between 1,120 mm and 380 mm above the floor).
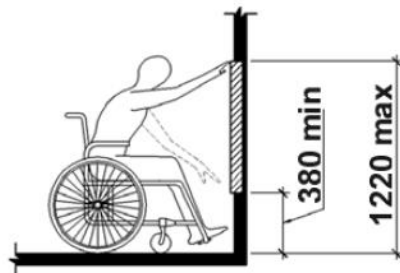
Source: EN 301 549 V1.1.2 (2015-04) norm.

Good practices

If the device is operated via a touchscreen, a screen positioned vertically so that the lower edge of the screen is at a height of 80-110 cm and the upper edge is at a height of 160-180 cm can be used. The device's software should allow for the inclusion of a wheelchair users/child/short person mode. This mode moves the content to the bottom of the screen.

Source: Fado Social Cooperative's own resources

9. If the device can communicate with the user by speech, it should be equipped with a 3.5 mm headphone connector for connecting headphones. The connector should be marked with Braille or a convex symbol.

10. The device shall not produce sounds that overlap with the voice messages emitted by the device.

11. The accessibility of digital interfaces and documents on these devices shall be checked in accordance with the requirements as for <u>services and applications.</u>

12. The device shall acknowledge user actions through at least two different sensory channels (e.g. hearing, vision, touch).

13. A help function shall be provided, which can be activated at the request of the user and will audibly describe the function of the controls being pressed by the user. In this help mode, the user only hears the names of the elements and their purpose, without activating their functions.

14. At a minimum, the user manual of the device shall be provided electronically in the form of a document or a WCAG-compliant website.

15. Devices equipped with a touch interface allow the user to activate assistive technology and explore the screen (search for the desired function) before activating the function.

Good practices

A standard touch interface should work as follows: a user with a visual impairment first finds the field they are looking for (via assistive technology, e.g. a screen reader), makes sure that this is what they want to activate and only then activates it.

16. It is important to ensure good audibility/visibility/reception of notifications and information of devices placed in public. This is also related to the appropriate positioning of these devices in such a way that any person, including one in a wheelchair, can use such a device. The visibility of the elements on the screen in full sunlight etc. should also be taken into account.

Good practices

Devices such as queuing machines, once a user is registered, determine their order by printing a ticket with the number of the stand to which the user has been directed. Such devices need to inform in other ways than just printing on the ticket or displaying the number on the device's screen, e.g. through a voice message.

6. How do we ensure accessible infrastructure?

6.1. Parking bays for cars of persons with disabilities

1. The surface of parking bays should be paved (even and smooth with a longitudinal and transverse gradient), made of asphalt concrete (bituminous surface) or cement concrete.

2. In the case of car parks with a grasscrete surface, parking spaces for persons with disabilities shall have a solid surface (without openings) or solid surfaced strips shall be provided on both sides of the parking bay. These strips should be 1.0 m wide.

3. The parking bay for people with disability shall, where possible, have a connection to the nearest pavement and access to the pavement from the parking bay shall be even and shall provide unobstructed access.

4. In the case of car parks adjacent to public buildings, parking bays for people with disabilities shall be located at the edge of the other parking spaces, as close as possible to the accessible entrance of the building.

5. Parking spaces located along the roadway shall have at least the following dimensions: 360 cm (width) x 600 cm (length).

6. Other parking spaces should have dimensions of at least: 360 cm (width) x 500 cm (length) [4].

7. In case of public car parks, there should be a minimum number of parking bays for cars used by persons with disabilities:

   o 1 parking bay – if the number of parking bays is between 6-15,

   o 2 parking bays – if the number of parking bays is between 16-40,

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[4] § 21 (1) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Journal of Laws of 2015, item 1422 as amended).

o   3 parking bays – if the number of parking bays is between 41-100,

o   4% of the total number of parking bays, if the total number of parking bays is more than 100.

6.2. Building

6.2.1. Entrance area

- entrances to buildings are signalled by a warning strip 50 cm wide placed 50 cm in front of and behind the door,

- freedom of movement for people with disabilities is ensured around the main entrance, i.e. the space for manoeuvring in front of and behind the entrance is at least 150 cm x 150 cm,

- the surface in front of the main entrance is paved and flattened with a longitudinal slope of no more than 5%,

- if it is not possible to access the building from ground level, a ramp should be used – if this is not possible, other alternatives, secondarily passenger lift, if this is not possible, vertical or diagonal platforms as a last resort.

Note:
- The use of automatic doors is recommended – such a solution facilitates access to the building for people with mobility impairments, carers with children, elderly people, people with bulky luggage – such doors are particularly reasonable in public buildings, including those related to health care.
- The use of revolving or swinging doors is only possible if accompanied by a swinging or sliding[5] door with a handle on both the inside and the outside.

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[5] *Ibid.* – § 62 item 2.

6.2.2. Vestibule, entrance door

- the entrance door to the vestibule in single-family, individual recreation and utility buildings should have a minimum door frame width of 90 cm, and in the case of other buildings at least 120 cm with the possibility of using a double door with a movable leaf of 90 cm[6] (100 cm recommended),
- a threshold with a maximum height of up to 2 cm[7], with a chamfered wedge and contrast distinction with a minimum LRV of 30[8],
- the door opening is located in the wall in such a way that at least 9 cm of free space is left at the hinge side,
- manoeuvring space in the vestibule: 150 x 150 cm, outside the opening field of the door leaf,
- the top edge of the handle on the entrance door, the lock and the bell must not be more than 120 cm above floor level[9],
- glass doors (external and internal) must be marked with a contrasting element – at least in the form of a yellow stripe about 20 cm wide, attached to the whole width of the door leaf at a height of about 160 cm.

Good practices
- Handles should be "L" or "C" shaped. Handles that require wrist movement, a firm grip or squeeze should be avoided.
- Handles must not be too small and too close to the door surface.

6.2.3. Intercom

The intercom (if used) should meet the following requirements:

- have audible and visual confirmation of the selected button,

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[6] § 239 (4) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

[7] *Ibid.* – § 62 item 2.

[8] Colour contrast is measured by comparing the light reflectance value (LRV). The light reflectance value is the total amount of light reflected from a surface (for example: floor, wall, stair tread finish, etc.) at each wavelength and in all directions when illuminated by a light source – cf. chapter on so-called textured surface markings.

[9] Kowalski K., *Projektowanie bez barier - Wytyczne* [*Designing without barriers – guidelines*], published by: Stowarzyszenie Przyjaciół Integracji [Friends of Integration's Association].

- have visual and audible confirmation of the opening of the lock,
- be visibly located on the side of the door handle (but not directly beside it), close to the entrance,
- be in contrasting colours as compared with the background against which it is placed,
- the intercom screen should be no higher than 120 cm above floor level, with its buttons at a height of 80 cm-110 cm[10] and a minimum distance of 60 cm from the inside corner,
- doorbell buttons should be of sufficient size and give a visual and audible signal,
- have visual and audible confirmation of the opening of the lock,
- the buttons should be in contrasting colours to the panel to which they belong and have tactile markings,
- keys shall be used instead of a tactile (sensory) system, with the keys clearly marked in raised numerals or with the use of an international keypad with tactile distinction of the numeral "5";
- the microphone should be at such a height that it picks up the voice of people of different heights.

6.3. Elements of equipment facilitating orientation in the building and the transfer of information

6.3.1. Wayfinding system

In the case of the design and development of spaces that can be navigated by people with disabilities, it is necessary to introduce elements facilitating self-orientation (wayfinding elements), movement and finding one's way to a destination, which should at least include:

- design of a visual identification system (signs, pictograms), taking into account the possible limitations of users,

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[10] ISO 21542:2011, *Building construction - Accessibility of the built environment.*

- information signs placed on or next to doors to rooms and in separate areas using large and contrasting signs
- information banners located at distinctive spots and points of the building, at entrances, circulation hubs,
- general plan of the building (visual and tactile) – at the reception desk or in the area of the passageway, indicating the point "you are here",
- information boards showing how to move around the building (showing the direction of movement), information on the function of the room.

6.3.2. Typhlographic plans[11]

The typhlographic plans are placed inside the building as soon as you enter it and should reflect the space of a given floor (or a selected part of it) and its most important elements[12].

The typhlographic plan of the facility includes:

- a colour functional-spatial scheme (marking the main user spaces),
- the course of tactile routes,
- Braille descriptions and tactile markings of the tactile routes,
- a legend describing all symbols used and colour coding,
- the so-called "you are here" points should be marked in a way that is very clear to both visually impaired and non-disabled people, for example a red convex field.

The colour scheme used on the plans must clearly show the closed spaces of the facilities and distinguish open spaces. Spaces that are not relevant for the movement of people, such as technical areas that are inaccessible to members of the public using the facility, should not be marked. Only public spaces and vertical and horizontal passageways need to be shown.

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[11] A typhlographic plan is a graphic representation and representation of reality using scale and proportion in a tactile accessible way. Typhlography allows a blind person to understand and map reality and to familiarize themselves with it.
[12] Polish Association of Blind People, Typhlographic Institute, *Projektowanie i adaptacja przestrzeni publicznej do potrzeb osób niewidomych i słabowidzących – zalecenia i przepisy* [*Design and adaptation of public space to the needs of the blind and visually impaired people – recommendations and regulations*], Warsaw 2016.

6.3.3. Induction loops

According to the guidelines of the European Federation of Hard of Hearing People, "induction loops are the most user-friendly, effective and versatile systems that enable a person with a hearing aid or cochlear implant to hear properly in public spaces".

Induction loops transmit a signal through a modulated magnetic field, which is picked up by the induction coil of the hearing aid. This solution eliminates any acoustic interference – the hard of hearing person only hears the desired signal.

- All public and community buildings must be equipped with induction loops that transmit the signal directly to the hearing aid or cochlear implant.
- An induction loop system consists of a sound source (for example, a microphone or the line output of a public broadcast system), a loop amplifier, a wire which is a transmitting antenna and signage.
- The area covered by the induction loop is not less than 25 m^2 ; the optimum size is 50-100 m^2. Calibration and installation of the system shall be in accordance with EN 60118-4:2015- 6 "Electroacoustics - Hearing aids - Part 4: Induction loop systems for hearing aid purposes - Magnetic field strength".
- Areas with inductive loop systems shall be marked with a pictogram according to ETSI EN 301 4622 (2000-03). The marking is to be placed, depending on the possibilities, on the floor (with the limits of the system's operation defined) or using vertical marking.

6.3.4. Surface markings

- The safe (obstacle-free) edge for pedestrian traffic is delineated by means of contrasting elements, both in texture and colour.
- So-called natural directional lines that blind and partially sighted people use include:
  - contrasting textural differences in flooring,
  - kerbs and building frontages,
  - plinths of vertical partitions,
  - horizontal elements of railings and handrails,
  - linear lighting in the floor and on the ceiling (a large proportion of blind people have a so-called "sense of light" and can recognise directions determined by lighting and colour contrast).
- The surfaces of the pedestrian routes ensure free movement, i.e. they are hard, even and have an anti-slip surface that also fulfils its purpose in difficult weather conditions.
- The texture and colouring of the routes must not give the impression of differences in height – the use of patterns transverse to the direction of movement should be limited.
- Wall and floor surfaces:
  - glossy surfaces causing flashes are prohibited,

○ walls and floors are contrasted; if this is not possible, skirting boards or plinths in a contrasting colour are required.

6.3.5. Tactile Walking Surface Indicators

Tactile Walking Surface Indicators (TWSIs) system is a type of identification of places and walking corridors, consisting of combinations of textures that are detectable by people with visual impairments. The purpose of texture information is to increase spatial orientation and to direct a person with visual perception limitations to safe places by avoiding obstacles. The texture system should be designed so that the message is unambiguous and allows people with visual impairments to navigate independently in public spaces[13].

1. The TWSIs system should be used on obstacle-free routes:

- in areas of pedestrian traffic transfer zones,
- in areas that are potentially dangerous for visually impaired people (for example, when climbing up stairs),
- in areas with limited orientation (for example, pedestrian routes over 4 metres wide, station squares, etc.).

6.4. Horizontal building communication

6.4.1. Pedestrian routes

The width of pedestrian routes (corridors) is dependent on the volume of passenger traffic and is respectively:

- 180 cm – in the case of constant two-way traffic,
- 150 cm – in the case of frequent two-way traffic,

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[13] Centre for Universal Design, Gdansk University of Technology, *Standardy dostępności dla miasta Gdyni*, [*Accessibility standards for the city of Gdynia*], 2016.

- 120 cm – in the case of infrequent two-way traffic[14], and with the proviso that such a corridor width is only acceptable if it is an escape route, intended for the evacuation of no more than 20 people[15].

6.4.2. Rest area

Rest area:

- should be equipped with a seat (bench) with armrests to make it easier to sit down and stand up, and a place to park a wheelchair,

- there should be a minimum clear space of 40 cm at the front of the bench so that the legs of people using the bench do not interfere with people using the pedestrian routes,

- the parking space for a wheelchair user shall be a minimum of 140 cm deep (180 cm recommended) and 90 cm wide so that a wheelchair user can park the wheelchair next to the bench without disturbing other users of the space[16].

Good practices

In spaces requiring significant distances to be covered, seating should be provided at least every 30 m (50 m in outdoor areas); these should be close to, but not directly on, pedestrian routes. If there is no space to place a bench, so-called standing seats may be used.

6.5. Vertical building communication

6.5.1. Steps

Steps height[17]

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[14] ISO 21542:2011, *Building construction - Accessibility of the built environment* and *American with Disability Act Standards for Accessible Design.*

[15] § 242 (2) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

[16] Centre for Universal Design, Gdansk University of Technology, *Standardy dostępności dla miasta Gdyni*, [*Accessibility standards for the city of Gdynia*], 2016.

[17] Ibid. – § 68 item 1.

- the maximum step height of external steps is 15 cm, of an internal staircase 17.5 cm,
- a flight of stairs shall comprise a minimum of 3 steps, with a maximum of 10 steps outside the premises and 17 steps inside the premises,
  - stair treads shall not be of the openwork type,
  - the overhang of the nosing[18] should not exceed 2.5 cm, nevertheless it is recommended not to use nosings,
  - stair treads should be shaped to prevent tripping when ascending and to prevent the back of the shoe catching on the tread when descending.

6.5.2. Balustrades and handrails

- External and internal staircases used to overcome heights exceeding 50 cm shall be provided with balustrades or other protection on the side of the open space, with a height of 110 cm.
- External and internal stairs in a public building shall be provided with balustrades or wall handrails to enable left and right-hand use.
- Where the width of a flight of stairs exceeds 4 m, an additional intermediate balustrade shall be provided.
- The maximum clearance or opening dimension between the balustrade infill elements must not be greater than 12 cm.
- Stair railings must be extended at least 30 cm horizontally in front of and behind the stair tread and must end in such a way as to ensure safe use.
- Handrails on stairs shall be at least 5 cm away from the walls to which they are attached[19].
- The grip part of the handrail has a diameter in the range of 3.5 - 4.5 cm[20].
- The ends of the handrail are curled down or mounted to the wall so that fragments of clothing cannot catch.

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[18] The nosing is the part of the step which extends above the stair riser and thus increases its plane.

[19] § 298 (6) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

[20] Kowalski K., *Projektowanie bez barier - Wytyczne* [Designing without barriers – guidelines], published by: Stowarzyszenie Przyjaciół Integracji [Friends of Integration's Association].

- Continuity of handrail on multi-flight stairs must be ensured. It is permissible to break the continuity of the handrail for landings of more than 3 m in length.
- Handrails shall be of a contrasting colour to the wall background and shall run uninterrupted through the entire flight of stairs.
- The line of the handrail shall faithfully reflect the flight of the stairs[21].

6.5.3. Signage

In public buildings, stairs are marked in two ways:

- visually – contrastingly marked edges of the first and last step in a stair flight,
- by changing the texture, shade or colour.

Good practices
- The use of tactile signage in Braille and/or convex writing at the ends of handrails is recommended.
- Where tactile paths have been provided in a building, they should lead to the stairs and not to lifts, provided that the stairs are the primary vertical communication route of the building.

6.5.4. Ramps

- Ramps intended for people with disabilities shall have a minimum width of the plane of movement of 120 cm[22].
- Ramps of more than 9 m in length shall be divided into shorter sections, with a minimum of 140 cm long landings[23].
- The width of the landing is not less than the width of the ramp.
- If there is a change of direction on the landing, a manoeuvring surface with a minimum size of 150x150 cm shall be provided on the ramp[24].

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[21] Polish Association of Blind People, Typhlographic Institute, *Projektowanie i adaptacja przestrzeni publicznej do potrzeb osób niewidomych i słabowidzących – zalecenia i przepisy* [*Design and adaptation of public space to the needs of the blind and visually impaired people – recommendations and regulations*], Warsaw, 2016.
[22] § 71 (1) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.
[23] *Ibid.* § 70.
[24] Kowalski K., *Projektowanie bez barier - Wytyczne* [Designing without barriers – guidelines], published by: Stowarzyszenie Przyjaciół Integracji [Friends of Integration's Association].

- The length of the horizontal plane at the beginning and at the end of the ramp should be at least 150 cm, outside the door opening area[25].

- The ramp should include kerbs or other alternative solutions to prevent the uncontrolled descent of the wheelchair. There is no need to design a kerb if the ramp edge runs along a wall.

- If a ramp with a slope of less than 5% is constructed, a handrail may be omitted.

6.5.5. Passenger lifts

Manoeuvring space in front of the passenger lift:

- the distance between the landing door of the lift and the opposite wall or other partition should be at least:

    - for passenger lifts – 1.6 m,
    - for hospital and goods lifts – 3 m[26].

- Passenger lift doors and their surroundings should be marked in a contrasting manner. A system of textured surface markings leading to the lift panel should be used on the lift access route[27].

Good practices

- Next to the passenger lift door (preferably on both sides) **there should be** a clearly legible notice with the floor number. This number should also be legible by touch by means of convex numbers at least 4 cm high and/or described in Braille at an easy location for blind people to locate, preferably on both sides of the lift frame[28].

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[25] § 71 (3) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

[26] *Ibid.* – § 195.

[27] Wysocki M., Załuski D., *Ekspertyza w zakresie dostępności kolejowych obiektów obsługi podróżnych z niepełnosprawnościami oraz ograniczoną możliwością poruszania*, [*Expert opinion on the accessibility of railway facilities serving travellers with disabilities and limited mobility*] – expert opinion prepared for Office of Rail Transport, Warsaw, 2017.

[28] *Ibid.*

- Where possible, the technology used should enable a person with a disability to operate the passenger lift independently. Where this is not possible, access to the service should be simple and not require prior notification.

Car dimensions and equipment

1. At least one of the lifts for general circulation in a building with rooms intended for the occupation of persons, as well as in any vertically separate part (segment) of such a building, should be capable of carrying furniture, patients on stretchers and persons with disabilities.
2. Access to the lift should be provided from each usable floor. This does not apply to a storey that has been extended upward or that has been created as a result of the adaptation of a loft for residential or other usable purposes.
3. The difference in level between the floor of the lift car stopping at the usable storey and the floor of that storey at the lift exit should not be more than 2 cm.
4. The passenger lift car accessible to persons with disabilities shall be at least 110 cm wide and 140 cm long.
5. There are continuous handrails on both sides of the car and the top of the handrail is at a height of 90 cm[29].
6. The doors to the car are 90 cm wide (recommended 100 cm due to people with trolleys for twins).
7. The lift doors open and close automatically.
8. The system is based on sensors (for example, infrared) that stop the door closing even before physical contact with an object or person.
9. A mirror should be placed on the wall opposite the entrance door, allowing the wheelchair user to check that there is no obstacle behind them and that they can safely exit the car.

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[29] § 193 (2a) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

10. The use of a mirror is not necessary if the car dimensions are greater than 150x150 cm[30].

Good practices
- It is recommended to equip a passenger lift with a folding seat at a height of 50 cm from floor level, 40-50 cm wide and 30-40 cm long.
- Cars with larger dimensions than the minimum should be used, for example 150 x 180 (220) to allow the carriage of persons on stretchers, bicycles or trolleys for twins.

External control panel

1. Signal announcing the arrival of the passenger lift:

   - a light and sound signal should be placed at each lift door to indicate which passenger lift has arrived and which way it is heading,
   - a single beep should indicate upward travel, a double beep downward travel,
   - the provision of verbal information "up" and "down" is also recommended.

2. Touch panels should not be used.

Internal control panel

1. The control panel in the car is mounted 80-120 cm above the floor and 50 cm from the corner of the car[31].
2. The control panel in the car is located on the right-hand side for doors that open centrally, and in the case of doors that open to the side, on the side towards which the door closes.
3. For the numeric panel, the stop selection buttons are located above the emergency button.

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[30] Kowalski K., *Projektowanie bez barier - Wytyczne* [Designing without barriers – guidelines], published by: Stowarzyszenie Przyjaciół Integracji [Friends of Integration's Association].
[31] *Ibid.* – § 193 item 2a.

4. The individual buttons are arranged in a single row, either vertically or horizontally (recommended), respectively: from bottom to top in a vertical arrangement and from left to right in a horizontal arrangement.

5. If there is more than one pushbutton, their arrangement should be staggered for better recognition of the floor sequence (EN 81-70: 2005 *Safety rules for the construction and installation of lifts - Particular applications for passenger and goods passenger lifts - Part 70: Accessibility to lifts for persons including persons with disability*)[32].

6. The internal control panel is equipped with additional signage for blind and visually impaired people (convex descriptions, numbers or symbols and signs in Braille) and voice information.

7. The floor button with the emergency exit (usually "zero") is additionally emphasised.

6.5.6. Vertical and diagonal platforms

Platforms can only be used instead of ramps or lifts in exceptional situations, e.g.:

- in rooms that are rarely used or inaccessible to all users,
- due to lack of space,
- due to conservator's recommendations,
- taking into account other practical/technical considerations that do not allow for the design of a ramp or a lift.

The minimum dimensions of the platform should be for:

- a vertical lift – minimum 90x120 cm,
- a stair lift – minimum 80x100 cm,

The lifting capacity of the lift should not be less than 250 kg.

If a platform has been installed at the entrance, it must allow a person with a disability to enter, operate and descend independently. At the same time, it must be possible

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[32] Wysocki M., Załuski D., *Ekspertyza w zakresie dostępności kolejowych obiektów obsługi podróżnych z niepełnosprawnościami oraz ograniczoną możliwością poruszania*, [*Expert opinion on the accessibility of railway facilities serving travellers with disabilities and limited mobility*] – expert opinion prepared for Office of Rail Transport, Warsaw, 2017.

to call a member of the facility's staff, if the user does not know how to operate the device.

6.6. Fire safety and people with disabilities

1. People with various disabilities require additional information and incentives in order to safely evacuate a building at risk. To this end, you should provide the following fire safety solutions during the construction, renovation/adaptation of a building:

   - use of a voice evacuation system (VES) on escape routes and in rooms in the building intended for people with disabilities, which emits voice signals informing about the direction of evacuation or the location of the nearest emergency exits,
   - equipping the lift hall with a fire intercom with redirection to the security room,
   - use of safety signs concerning evacuation, illuminated internally,
   - use of emergency lighting on escape routes,
   - use of light and voice signals in the fire alarm systems,
   - use of yellow, the colour of the greatest contrast to the environment, to mark the escape door,
   - use of additional lighting fixture above escape doors that operates all the time.

2. People with visual impairment should have access to information on the direction of the evacuation; in case of hard of hearing people, they should be provided with information on the event and evacuation, for example, by displaying it on large format display screens.

3. The tactile information on the direction of evacuation in the form of tactile pictograms should be installed in easily accessible places (on rails or wall corners)[33].

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[33] *Wysocki M., Projektowanie otoczenia dla osób niewidomych. Pozawzrokowa percepcja przestrzeni,* [*Designing the environment for the blind people. Non-visual perception of the space*], Wydawnictwo Politechniki Gdańskiej, 2010.

4. The escape route should be free from obstacles and allow the person with mobility and perception limitations to evacuate themselves independently. It this is not technically feasible, these people should have the possibility to hide in special rooms or in waiting rooms located within the emergency exit staircases for the time needed for the arrival of emergency response teams.

5. The rooms where one can wait for the evacuation should be properly secured, with greater fire prevention ensured and adequately equipped with fire protection measures and tools for communication with the emergency response team.

6. When the facility does not have special passenger lifts for evacuation in case of fire, it is necessary to design rooms where people can hide in case of fire.

7. These rooms should be located near the escape routes as a separate part of emergency fire staircases or as independent rooms with greater fire protection ensured close to the escape route.

6.7. Sanitary rooms and equipment

1. Toilet bowl:

- the area around the toilet bowl is designed in such a way as to take into account different manners (depending on the habit or disability) of moving from the wheelchair to the toilet bowl,
- next to the toilet bowl there should be space free from obstacles of the width of at least 90 cm (recommended on both sides),
- the top edge of the seat is at a height of 42-48 cm.
- The axis of the toilet bowl is no closer than 45 cm from the wall,[34]
- the toilet seat is uniform, without cut-outs, stable.

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[34] Wysocki M., Załuski D., *Ekspertyza w zakresie dostępności kolejowych obiektów obsługi podróżnych z niepełnosprawnościami oraz ograniczoną możliwością poruszania*, [*Expert opinion on the accessibility of railway facilities serving travellers with disabilities and limited mobility*] – expert opinion prepared for Office of Rail Transport, Warsaw, 2017.

2. Rails:

- mounted at a distance of approx. 40 cm from the axis of the toilet bowl (to the axis of the handrail) and at a height of 70-85 cm (top edge of the handrail), projecting a minimum of 10-15 cm in front of the bowl,

- 75-90 cm long (raised on both sides of the toilet bowl),

- where only one-sided movement from the wheelchair to the toilet bowl is possible, it is permissible to mount one lowered handrail and one fixed one – on the opposite side to the place of movement, at a height of 70-85 cm from the floor, minimum length 80 cm, fixed 20-30 cm[35] from the wall behind the toilet bowl.

3. Flush:

- activation of the toilet flush is automatic or manual, it must not be a leg-operated cistern,

- the toilet paper dispenser is located at a height of 60-70 cm from the floor, near the front edge of the toilet bowl.

4. Washbasin:

- Washbasin height:

  o top edge at a height of 75-85 cm from the floor,

  o lower edge no lower than 60-70 cm from the floor[36],

  o manoeuvring space in front of the wash basin of 90x150 cm, of which no more than 40 cm of this space may be under the washbasin[37].

- Basin taps:
  o are lever-operated (preferably with an extended handle) or automatic,

  o taps that need to be turned on and off should not be used.

- The mirror is installed so that its lower edge is no more than 100 cm above floor level.

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[35] Kowalski K., *Projektowanie bez barier – Wytyczne* [*Designing without barriers – guidelines*], published by: Stowarzyszenie Przyjaciół Integracji [Friends of Integration's Association].
[36] *Ibid.*
[37] *Ibid.*

- The soap dispenser and dryer/towels are located as close as possible to the washbasin at a height of 80-110 cm from floor level.

- Handrails are installed on both sides of the washbasin at a height of 90-100 cm, with a distance of no less than 5 cm between the edge of the handrail and the washbasin.

5. Toilets

For toilets, the requirements of the sections on *Toilet Bowl* and *Washbasin* shall be met.

- Manoeuvring space:
  - a manoeuvring area with minimum dimensions of 150x150 cm[38],
  - all floor drains and floor gratings are outside the manoeuvring space of the wheelchair.

- Wall and floor surfaces:
  - glossy surfaces causing flashes are prohibited,
  - walls and floors are contrasted, if this is not possible, skirting boards or plinths in a contrasting colour are required.

- The floors and flooring in the toilets are made of non-slip materials.

- Light switches shall be located at a height of 80-110 cm from floor level.

- It is forbidden to restrict free access to the wheelchair-accessible toilets, for example by locking them or using them for other purposes (for example, as a storage room for sanitary tools).

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[38] § 86 (1) of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location.

6. Windows

One-handed opening by means of a lever handle, at a height of 85-120 cm above floor level.

Window sills in dwellings placed no higher than 85 cm above floor level.

7. Sockets, contacts and other control mechanisms

Light switches, access card readers and essential sockets are located in places that can be reached by a person in a wheelchair.

Contacts, switches and other control mechanisms should be placed at a height of 80-110 cm, and sockets at a height of 40-100 cm[39]. This rule does not apply to special equipment, which is required by law to be at other heights, and to electrical installation components and communication systems used solely for technical purposes.

Sockets and contacts are operated with one hand and do not require wrist movement, firm grasping and squeezing.

6.8.   How do we make historic buildings accessible?

Historic buildings are buildings with a special character. Each historic space is a unique structure and requires the development of individual architectural and infrastructural solutions adapting it to the needs of people with disabilities. The possibility of applying particular solutions should be each time consulted with appropriate authorities in the country[40].

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[39] *Ibid.*

[40] *In Poland, the assessment of the possibility of applying particular solutions belongs each time to the voivodeship conservator of monuments. The works carried out in historic buildings must result from the provisions of the law: the decision of the Voivodeship Conservators of Monuments, which follows directly from the provisions of the Act of 7 July 1994 – Construction Law (Journal of Laws of 2017, item 1332 as amended), the Act of 23 July 2003 on the protection and care of historical monuments (Journal of laws of 2017, item 2187 as amended), the regulation of the Minister of Culture and National Heritage of 22 June 2017 on conducting conservation works, restoration works and conservation research at a monument entered in the*

Accessibility in a historic building must be based on combining architectural changes with the use of modern technological solutions and appropriate operating procedures. Only in this way can an adequate level of accessibility be ensured in this type of building while preserving its value. This may require deviating from standard solutions or developing solutions that provide accessibility only to the main spaces of the building.

Thus, each historic space requires the development of individual architectural and infrastructural solutions adapting it to the needs of people with disabilities.

In the case of actions aimed at improving the accessibility of cultural institutions, the preservation of monuments should be done with balancing both social interests and economic efficiency. Indeed, the essence of the problem boils down to ensuring a balance between the social good of preserving the existing historic values of a building and the need to eliminate architectural barriers for people with disabilities. The two social interests are legally equal and it will be the responsibility of the authority conducting the proceedings to balance this issue each time – depending on the preserved historic values of the building in question and on the proposed design solutions. Not every proposed measure will be able to be applied to the same extent and on the same principles as for non-historic buildings. This is because it must be borne in mind that historic buildings generally deviate from current architectural standards appropriate to newly designed buildings. At the same time, it must be ensured that the solution chosen for the historic building in question is economically efficient, taking into account all the necessary costs for its implementation and operation over its lifetime.

Sometimes, due to the use of historic architectural solutions, if they represent the value of the historic building in question, it may be that accessibility can only be provided to the main spaces of the building. Nevertheless, each applicant should strive to ensure

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register of monuments or in the Heritage Treasures List, as well as construction works, architectural research and other activities at a monument entered in the register of monuments, as well as archaeological research and search for monuments (Journal of Laws of 2017, item 1265).

full accessibility to the entire space of the facility where cultural activities are taking place. However, it is advisable that the implementation of works in historic buildings is based on cooperation with the community of people with disabilities.