# Implementation guide for an accessible Excel

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It should be noted that the corresponding instructions were created using the Office 365 Education package and may differ for other Excel versions.

If you want to use Excel to create form creation, please take a look at our extended checklist in accordance with EN 301 549.

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# General notes on Excel

This checklist focuses on the use of Excel files for tabular and numerical data and their visualisation using diagrams. Other uses for which Excel was not originally intended are difficult or impossible to implement without accessibility (e.g. large tables with structured text, site maps).

Other special features of Excel:

* The last position (cell) is saved so that all users in this table start at this position.
* Settings for grid lines are saved.
* "Fix window" (window sections, rows, columns) is also saved for other users.
* For freely positionable elements, Excel distinguishes between illustrations, diagrams, text fields and embedded objects. Illustrations are: Images, shapes, pictograms, 3D models, SmartArt, screenshots. Embedded objects are all types of external files (including videos).
* There is only one main language in Excel. Individual worksheets or cells cannot be labelled as a different foreign language.
* Templates in Excel (e.g. table templates, chart formatting) are not automatically accessible. They often do not fulfil the contrast requirements.
* There are special keyboard shortcuts to operate Excel with the keyboard. These can be found on the [Microsoft support page.](https://support.microsoft.com/de-de/office/tastenkombinationen-in-excel-1798d9d5-842a-42b8-9c99-9b7213f0040f)

## General

### 1.1 A reference to internal or external textual or graphic objects is made by explicit naming, not solely by means of a description via visual or auditory features.

#### What is meant by this?

Reference must be made to the objects used by explicitly naming and describing them in the existing text. Internal textual objects refer to texts, headings, footnotes, endnotes and text fields. External textual objects are, for example, hyperlinks. Graphical objects, on the other hand, include images, shapes, diagrams, tables, SmartArt and WordArt. All these objects may not only be referenced by their visual and auditory characteristics such as colour, size, shape, position, volume or pitch, but also require a clear designation in text form. It is advisable to give the object a meaningful name directly in the text, link to it and refer to it in the description.

#### Why is it important?

For the accessibility of documents, it is important that textual or graphic objects are understandable regardless of a particular sensory characteristic, such as sight or hearing. Recipients who primarily use one sensory channel (visual or auditory) may otherwise not be able to perceive this information. For example, recipients with visual impairments or blindness may have difficulty understanding the content of objects if the content is only recognisable through visual features or descriptions. While recipients with hearing impairments or deafness may have difficulty forming a picture of an object based on descriptions that refer exclusively to acoustic features.

By clearly naming and describing textual and graphic objects, documents become accessible to all recipients and provide orientation.

#### How can I implement/check this?

If you want to write a precise reference for an internal or external textual or graphical object in Excel, it is advisable to follow the steps below:

1. Firstly, you should identify the object and make sure it has a clear and concise name.
2. You should then describe the object in one or two sentences to convey its function and meaning. Use clear and precise language to avoid misunderstandings.
3. Next, it is advisable that you add a unique identifier, such as a number or letter, to clearly identify the object. This is particularly important if you refer to several objects on the slide.
4. Once you have the clear labelling and description of the object, you can insert the reference into the text. Use the labelling and description to make your reference clear and precis.

The following list contains recommended formulations for textual references to objects in Excel:

1. As shown/visible in the table/figure [number]...
2. As shown in [author(s), year]...
3. As described/mentioned in [slide title, page/paragraph number]...
4. As noted in [name of study, year]....
5. As shown/mentioned in the previous [table/figure, section]...
6. As shown in the data/results of [study name, year]...
7. As mentioned/said in [author(s), year, page/paragraph number]...
8. As mentioned/explained in the [section or chapter number]...
9. As can be seen in the red sphere [placement of the sphere on the slide]...

### 1.2 The use of colours is generally sparing.

#### What is meant by this?

A restrained and appropriate use of colours to convey information should be aimed for. Before the integration of colours into an information medium, it is advisable to carefully consider whether and to what extent they can contribute to improving the communication of information.

#### Why is it important?

For some recipients, too much colour can be a distraction or disrupt the reading flow due to strong visual perception. In addition, there are recipients who cannot perceive all colours clearly or who work independently of colour. If information is conveyed exclusively through colour, these recipients may miss important information or not understand it.

#### How can I implement/check it?

It is recommended that the number of colours used is kept to a minimum in order to convey a clear and understandable message. In addition, when deciding on the use of colours, consideration should also be given to their necessity to ensure that they actually add value to the communication of information.

If colours are nevertheless used to convey information, this information should also be conveyed in other ways, such as symbols, lettering or patterns (see 1.3).

### 1.3 When colours are used to convey information (e.g. in diagrams or to mark text), labels, symbols or patterns convey the same information.

#### What is meant by this?

It is recommended that information is not only represented by colours, but also by labels, symbols or patterns. This means, for example, that colour AND pattern should be used in a diagram to represent a bar. For example, buttons in the colours green and red are also described with "yes" and "no". This creates opportunities for the information to be better perceived visually.

#### Why is it important?

If information is presented exclusively through colours, recipients who do not perceive all colours clearly may have difficulty understanding this information. There is a risk that information that is only conveyed via colours will be lost on such groups of people. For example, recipients with colour vision deficiency have difficulties perceiving certain colours or contrasts. Colours with the same saturation can prevent full perception of what is shown and result in not all information being absorbed. Grey contrasts should also only be used to a limited extent, as recipients with colour vision problems may have difficulty recognising certain shades of grey or differences in brightness.

Through the additional use of labels, symbols or patterns, information can be presented in several ways to ensure that it is also accessible to groups of people who work independently of the colour display, are distracted by bright colours or perceive stimuli very strongly.

#### How can I implement/check it?

For example, to add a pattern to a chart in Excel, you can proceed as follows:

1. Click on the part of the diagram that you want to add a pattern to.
2. Click on "Format" and the small arrow in the right-hand corner, next to the "Shape types" tab.
3. A new window opens on the right-hand side for formatting the diagram.
4. Click on the symbol of the small colour bucket "Fill and lines".
5. Select "Pattern filling" and choose a desired pattern and the desired colours.

You should also add a label/axis title to each chart in Excel and proceed as follows:

1. Select the desired diagram with the mouse and click on the large plus symbol on the right.
2. If you activate the "Axis titles" option here, these will appear on the diagram.
3. Now double-click with the left mouse button on one of the two axis labels.
4. You can now change the lettering and its size, font and colour, among other things.
5. If you hold down the axis title with the mouse, you can move it to another location. You can also delete the axis labels in this way.

Diagrams and other representations should be viewed in different ways to check accessibility, for example by hiding colours or changing the brightness to ensure that the information is easy to understand regardless of colour. There are various ways to do this.

Print the respective page in greyscale to get an idea of how your displays look without colours. In addition, you can set the brightness of your end device from "very high" to "very low" and check whether the information is still accessible.

## 2. Document

### 2.1 The title is stored in the metadata, meaningful and easy to understand.

#### What is meant by this?

It is important to make the title of a document easy to understand and meaningful, which means that the title should be formulated in simple and clear words that adequately reflect the content of the document. The title should enable readers to quickly recognise what the document is about and what purpose it fulfils. This title must be stored in the metadata to make it easier for users to identify and organise the presentation.

Metadata is information that describes or identifies a document and is usually invisible to viewers. It includes various properties, such as the title, the author, the creation date, the file format and the size of the file. Keywords or keywords can also be used as metadata to describe the content of the document and make it easier to find for later searches or archiving.

#### Why is it important?

A meaningful and easy-to-understand title that is stored in the metadata facilitates orientation and approval of a document for recipients who are dependent on speech output and screen readers. Recipients with visual impairments or learning difficulties are often unable to scan the document visually to determine whether it is relevant to them. Instead, they have to rely on voice output and screen readers to understand the content. A meaningful and easy-to-understand title can help them quickly grasp the content of the document and decide whether or not the text is relevant to them.

An example of a meaningful and easy-to-understand title would be "Guide to document accessibility". This title gives readers a clear idea of what the document is about. A bad title, on the other hand, would be "Accessibility", for example. This title is too general and does not tell readers specifically enough what the content of the document is. This title can lead to irritation and a considerable amount of time for readers with screen readers and speech output.

#### How can I implement/check it?

There are different procedures for entering the title of a document in the metadata, depending on the operating system:

For Mac:

1. Click on "File".
2. Click on "Properties" in the "Summary" tab to access the metadata.
3. Enter the title in the field provided.

On a Windows computer:

1. Click on the "File" tab.
2. Click on "Information".
3. Enter the title in the field provided.

To check whether the title is correctly stored in the metadata, you can click on the "Info" tab and check the information. You can also go through the document and make sure that the title of the document corresponds to the title in the metadata.

Whether a title is ultimately meaningful or not is up to you to decide. But remember that reading decisions should already be made by the title.

### 2.2 The main language of the document corresponds to the language set for the spell checker.

#### What is meant by this?

It is important that the language set for the spell checker in Excel matches the language that is primarily used in the document. If multiple languages are used in a document, the language for certain sections or words can be changed manually to ensure that the spell checker works correctly (see 3.1).

#### Why is it important?

It is important that the main language of the document matches the language of the spell checker to ensure that the document is read out correctly in terms of pronunciation using speech output programmes. Otherwise, a document may be difficult to understand for recipients with limited reading ability, learning difficulties or visual impairments who have documents read to them with the support of a screen reader. If the actual language does not comply with the spell checker, this can lead to incorrect pronunciation by the screen reader and voice output, so that the content of the document is misunderstood or distorted in its meaning.

#### How can I implement/check it?

To customise the main language in a document, there are different procedures for Mac and Windows operating systems:

The main language of an Excel file can be customised as follows:

For Mac:

The main language in Mac cannot be customised. The main language at installation applies.

For Windows:

1. Open the Excel file and click on "File" in the menu bar.
2. Click on "Options" at the end of the menu.
3. Click on "Language" on the left-hand side of the window.
4. Select the desired language from the "Main language for documents" drop-down menu.
5. Click on "OK" to save the settings.

As soon as the main language of the presentation has been changed, Excel's correction aids and spell checkers are automatically set to this language.

## 3. Spreadsheet

### 3.1 Worksheets have meaningful and easily understandable names. These differ from other worksheets in their names.

#### What is meant by this?

Several spreadsheets can be filled with content in Excel. To enable clear differentiation between the spreadsheets, it is advisable to use different names for the sheets. If the contents of the spreadsheets are identical or similar and therefore require the same labelling, it is nevertheless advisable to use differentiated labelling, for example by adding numbering such as "1st spreadsheet", "2nd spreadsheet" and so on.

#### Why is it important?

The clear distinction between different worksheets in Excel is important for orientation, especially for people with visual impairments or other limitations. By clearly labelling different worksheets, it is easier to navigate and understand the layout of the content. People who use screen readers or other assistive technologies rely on clear and unambiguous labelling to navigate effectively through digital content. By ensuring that the naming of the spreadsheets is clear and distinguishable, approval is improved for all users, regardless of their individual abilities or limitations.

#### How can I implement/check it?

To give your worksheets suitable names, double-click on the name of the sheet in the tab and enter the desired new name.

### 3.2 The spreadsheets are arranged in a sensible order. There are no empty worksheets.

#### What is meant by this?

The spreadsheets in an Excel file should be arranged in a logical order and only contain those sheets that actually have content. Empty spreadsheets should be removed.

#### Why is it important?

The proper arrangement of spreadsheets and the removal of blank sheets are crucial to facilitate navigation and approval of relevant information for people with disabilities. A logical order and clear structure allows screen readers to interpret data effectively and provide accurate information for users. This is particularly important for people with visual impairments or other limitations, as a clear presentation increases the efficiency and accuracy of information intake and thus improves approval. In addition, screen reader users cannot visually recognise if a spreadsheet is blank, which means that they have to have the information about the blank sheet read out to them to determine that it does not contain any relevant data.

#### How can I implement/check it?

To ensure that your Excel file is optimally structured, check that the sheets are arranged in a sensible order and remove any empty sheets.

### 3.3 Each spreadsheet contains a maximum of one table. If a spreadsheet contains several tables, these are arranged in a sensible order.

#### What is meant by this?

A spreadsheet should preferably only contain one table. If this is not possible for certain reasons, the tables should be arranged in a logical order. It is important to note that Excel works differently to Word and it is not advisable to simply place content one below the other on the same spreadsheet.

#### Why is it important?

Organising content in separate spreadsheets in Excel is important as it enables structural clarity and the effective use of assistive technologies such as screen readers. This allows screen reader users in particular to easily navigate the document, as there is no need to search through the entire spreadsheet to get to the next table. It also makes it easier to capture content if each spreadsheet only contains a manageable amount of information. Dividing tables into several spreadsheets simplifies navigation for screen reader users and makes it easier for them to find their way around the document.

#### How can I implement/check it?

To ensure that your Excel file is accessible, check the structure of the spreadsheets. Make sure that each spreadsheet content is clearly organised and that each sheet contains only one table.

### 3.4 A spreadsheet contains either a table or illustrations, diagrams and text fields.

#### What is meant by this?

Each spreadsheet should only contain one table. Diagrams or supporting graphics should not be placed on the same worksheet.

#### Why is it important?

If each spreadsheet contains only one table and charts and supporting graphics are placed separately, screen readers can interpret the data more efficiently and accurately. This ensures that all users, regardless of their individual abilities, can understand the information in the Excel file more easily. This clear separation of content on different spreadsheets helps users to interpret the data correctly and allows for better approval for all.

#### How can I implement/check it?

Check each spreadsheet in the Excel file to ensure that there is only one table per sheet. Remove additional tables if necessary. Also check the placement of charts and graphs and make sure they are not on the same sheet as the tables. Move them to separate sheets if necessary.

### 3.5 At the beginning of the spreadsheet there is a note about the illustrations, diagrams and text fields it contains.

#### What is meant by this?

A note should be inserted in the top left-hand area of the spreadsheet to indicate that there are illustrations, diagrams and/or text fields on the spreadsheet.

#### Why is it important?

Including an indication that there are illustrations, diagrams and/or text fields on the spreadsheet is essential for staff, people with visual impairments or other impairments who may not be able to grasp the visual content. By providing such an indication, screen readers and other assistive technologies can recognise this information and inform users that visual elements are present. This allows users to prepare for these elements and take appropriate steps to understand the content or use alternative aids to absorb information. This sponsors the approval of the spreadsheet and ensures that all recipients, regardless of their individual abilities or limitations, can understand and use the information.

#### How can I implement/check it?

Please note the following points to ensure approval for all recipients:

1. Check that the objects on the spreadsheet are appropriately labelled to provide clear information about them.
2. Pay attention to precise and detailed labelling and descriptions of the objects.
3. Ensure that the focus is not only on the cells, but also on other important elements.
4. Place the note about the existing visual elements clearly at the beginning of the spreadsheet.

### 3.6 When saving for the last time, the worksheet with which the users are to start is selected. In all spreadsheets, the cell with which the users are to start is also selected (usually A1).

#### What is meant by this?

The saving behaviour in Excel differs from Word and PowerPoint. It remembers the last active cell where the focus was when the file is reopened. This information is saved directly in the file and not locally on your own PC.

#### Why is it important?

Visual orientation in Excel is limited for non-sighted staff, people. When opening an Excel file, they lack information about the current worksheet position, the number of previous worksheets and possible content before the selected cell if they are in the middle of the worksheet. To get this information, they have to manually explore the entire spreadsheet using the keyboard. By clearly labelling the first cell (A1) of the first spreadsheet, screen reader users can find their way around more quickly and easily.

#### How can I implement/check it?

These steps ensure that the focus is on cell A1 when the Excel file is reopened:

1. Click in the A1 field to select it. Alternatively, you can use the key combination "Ctrl" + "Pos1" to jump directly to cell A1.
2. Select "Save as" or "Save" from the menu to save your file.
3. Close the file and open it again to check whether the selection has been saved in cell A1.

### 3.7 If there is a visual heading and/or instructions on the spreadsheet, these are located in cell A1. The title corresponds to the spreadsheet title (in a longer form if necessary).

#### What is meant by this?

If there is a visual heading or instructions, these are always positioned in cell A1. The heading placed in cell A1 corresponds to the title of the spreadsheet, which may also be in a more detailed form.

#### Why is it important?

It enables non-sighted users to orientate themselves better in the Excel spreadsheet and to grasp the content more easily. By placing the visual heading and/or instructions in cell A1, screen reader users can quickly identify the information, as most screen readers automatically start with cell A1 and read out the information contained there first. This standardised format ensures that the necessary contextual information is readily available for the correct interpretation of the spreadsheet, regardless of individual limitations. Consistency and clear structuring improves accessibility and ensures equal approval of the information in the Excel spreadsheet.

#### How can I implement/check it?

To ensure that the visual heading and/or instructions are placed in cell A1, you can follow the steps below:

1. Check whether the heading and instructions are actually in cell A1. Make sure that no other information occupies cell A1.
2. Make sure that the heading and instructions are clear and precise to adequately describe the content of the spreadsheet.

### 3.8 Fixations are set sensibly so that column and row headings are always visible.

#### What is meant by this?

Locking in Excel makes it possible to lock certain parts of a spreadsheet, such as rows, columns or areas, in order to keep them visible even when scrolling. When users scroll through the spreadsheet, the pinned areas remain in place, meaning that the headings or important data always remain visible. On the other hand, the unfixed areas that have not been specifically fixed can be moved normally while scrolling to allow a comprehensive view of the data, especially if the spreadsheet is large and cannot be displayed in full on the screen.

#### Why is it important?

The function of fixations in Excel is crucial for quickly maintaining an overview even in extensive tables and finding your way around efficiently. By fixing columns and rows, important headings always remain in view when scrolling, which makes it much easier to find your way around the table. This helps users to orientate themselves more quickly and find the desired data in the table quickly without losing the overview.

#### How can I implement/check it?

To set fixations in Excel and check that they work correctly, follow these steps:

1. Click on "View" to display the view options.
2. Select the fixation option you require from the various fixation options.
3. To freeze a line, select the relevant area and select "Freeze top line".
4. Then check whether the desired rows or columns have been fixed and whether they behave correctly when scrolling. Make sure that the fixed elements remain in position and that the unfixed areas can still be scrolled.

## 4. Table

### 4.1 Tables are labelled as such, have a clear name and a meaningful caption.

#### What is meant by this?

In Excel, labelling tables means that they are highlighted using special formatting or design elements to distinguish them from other data areas. A unique name is assigned to the table to make it easy to identify and address, especially when referenced in formulas or other parts of the worksheet. Meaningful labelling refers to the clear and precise designation of the table that describes its content or function in an understandable way to enable a quick overview.

#### Why is it important?

Correct labelling of tables in Excel enables screen reader users to interpret the tabular data effectively. Without appropriate labelling, the content structure of the table can remain unclear for screen reader users, which can lead to difficulties in data capture and interpretation.

A precise and meaningful table heading makes it easier to quickly grasp the table content and helps users to decide whether the table is relevant to them. In addition, table labelling should be clear and comprehensible in order to ensure unambiguous allocation and efficient understanding. Clear and precise labelling of tables helps to avoid misunderstandings and confusion, especially when several tables are contained in one Excel document. These measures ensure the effective use of table data for both sighted people and screen reader users.

#### How can I implement/check it?

Label tables in Excel as follows:

1. Select the area that you want to format as a table.
2. Go to the "Insert" tab and select the "Tables" option.
3. Tick the "Table has heading" box and confirm by clicking on "OK".
4. The selected area is now formatted as a table.
5. Once the table has been selected, you can make further configurations and adjustments in the "Table" tab.

When selecting headings or table captions, you should follow a few principles to ensure that they are appropriate to the content and easy to understand:

1. Describe the content precisely: The heading or caption should be short and concise and describe the content of the worksheet or table.
2. Use clear and simple language: Avoid technical jargon and instead use language that is easy for the target group to understand.
3. Use keywords: Use relevant keywords that give readers an idea of what to expect on the spreadsheet or in the table.
4. Use formatting: Use a larger font size or bold type to emphasise the heading or caption and make it easier to read.
5. Check accuracy: Make sure that the information in the heading or labelling is correct and does not lead to misunderstandings.
6. Avoid repeated labelling: Avoid repeating captions or headings in the document to avoid confusion.
7. Consider the target group: Make sure that the headline or labelling is tailored to the needs and knowledge of the target group.
8. Use the correct spellings and symbols: Use correct spelling and grammar, and use symbols and abbreviations that are understood by the target audience.

By taking these principles into account, you can create headings and table captions that are appropriate to the content and easy to understand.

### 4.2 The column header is located in the first row and is marked as "Header". Row headings (if available) are in the first column, which is marked as "First column". Column and row headings are meaningful and easy to understand.

**What is meant by this?**

A clear structure in tables is achieved using column and row headings. The header displays how the content is organised in the columns, while the "First column" sorts the content within the rows. To ensure that a table can be read out correctly by a screen reader or voice output, the column and row headings should be marked as "Header row" and "First column" respectively.

The "header row" of a table is the top row of the table, which normally contains the column headings. The header row is used to identify and organise the content and structure of the table. It should be displayed on each new page of multi-page tables.

If all column headings are marked as "Header", they help to present the contents of the table clearly and comprehensibly. The same applies to row headings that are marked as "First column". These markings make it possible to perceive the table content correctly and clearly.

**Why is it important?**

Incorrect formatting of tables can result in the content and structure of the table being unclear or incomprehensible to screen reader users. For example, if column or row headings are not marked as "Header" or "First column", the screen reader cannot interpret the structure of the table correctly and cannot understand the order within the table. As a result, important information may be lost or misunderstood.

If the header of a table is not repeated on every page, this can lead to confusion and misinterpretation of the content.

For complex tables in particular, it can be helpful to repeat the column labels on each page. This repetition provides recipients with better orientation and makes it easier to correctly allocate the contents of the table. Screen reader users also benefit from the repetition of the header, as this is also read out at the top of each page. This means they do not have to constantly remember the column headings or keep returning to the beginning of the table to keep their bearings.

**How can I implement/check it?**

In Microsoft Excel, the first row of a table is automatically marked as a "header row" if it has been created correctly, otherwise you can proceed as follows:

1. Make sure that the first line contains the headings and that the data is arranged underneath.
2. Click on the first line and go to the "Table design" tab.
3. Tick the "Header" box to select it.
4. Click on the first column with the special heading or order.
5. Go to the "Table design" tab and select the "First column" option to highlight it.

To check a table for this, proceed as follows:

1. Click in the first cell of the table.
2. Go to the table design in the menu bar.
3. Look for the checkboxes for "Header" and "First column" on the left-hand side of the menu and check whether they are activated.

### 4.3 Tables are not nested and do not contain split or merged cells.

#### What is meant by this?

In order to keep the data clear in Excel and enable correct allocation, each row should have the same number of columns. Connected or split cells can cause confusion as it is difficult to determine which column heading the content should be assigned to. Each cell should contain only one piece of information to allow easy ordering, filtering and analysing. It is therefore advisable not to split or merge cells in order to clearly structure and process the data.

Nested cells should be completely avoided in tables. Nested cells mean that a cell contains a separate table or another complex data structure. This leads to confusion and can cause problems when processing data in Excel, as Excel is not designed for such complex data structures.

#### Why is it important?

If table cells are merged, split or nested, this can lead to problems as the information can no longer be assigned to the corresponding column headings. This can lead to the information being interpreted incorrectly or incompletely, which can lead to errors or misunderstandings. This can happen in particular when the table is viewed enlarged. Users of screen readers and voice output also face challenges in correctly assigning and interpreting the cells when they are connected, split or nested. To avoid such problems, tables should be formatted in such a way that each cell can be assigned to a specific column and the information is easy to interpret.

#### How can I implement/check it?

To ensure that the cells in a table are not connected or separated, table cells should not be merged or separated. If it is necessary to place additional information in a cell, new rows or columns can be added for this purpose. However, it is important to ensure that each row has the same number of columns so that the content can be assigned to the correct column headings. If too much information is placed in a table, either the table should be split into several tables or an alternative display format should be selected.

To check whether your table contains nested, split or merged cells, please follow the steps below:

1. Visually check each cell in the table to ensure that no cell has been split into smaller parts and that no cells have been merged into a larger cell.
2. Make sure that each cell contains only one type of information and that no cell contains a complex data structure such as an embedded table or chart.
3. If you find nested, split or merged cells, separate or explode them to ensure that each cell contains only one clear and unambiguous piece of information.
4. Check the entire table to ensure that it is well structured and clear so that the data is easy to read and process.

If you find nested, split or merged cells in your Excel spreadsheet and want to explode them, please follow the corresponding steps:

Separation of cells:

1. To separate split cells, select the relevant cells, then right-click and select "Split cells".
2. Enter the desired number of cells in horizontal or vertical direction and confirm your selection.

Dissolve merged cells:

1. Select the merged cells, go to the "Start" tab and click on the "Merge cells" button (the option with an arrow that merges cells). This will return the cells to their original form.

Removal of nesting:

1. If you have data that is contained in nested cells or complex structures, it is advisable to place these in separate cells or tables to make the table clearer.

### 4.4 Complex tables (more than 2 dimensions) are divided into several simple tables.

#### What is meant by this?

Complex tables are tables that contain a larger number of columns and rows and may represent multiple levels of data and information. They can be used, for example, in scientific reports, financial reports or in data analysis. Complex tables often contain different types of data, including numerical, textual and graphical data.

#### Why is it important?

A clear breakdown of tables is essential to ensure that they are accessible to all. This is particularly important for visually impaired recipients who hear the document read aloud.

By splitting complex tables into simpler tables with clear headings and structures, the readability and comprehensibility of the document can be improved. Recipients with other impairments such as concentration problems or learning difficulties also benefit from this structure.

An example of this could be a financial report table that shows various key financial figures such as turnover, profit and loss. If this table is very extensive and contains a lot of complex information, it can be difficult to interpret for some recipients. By splitting it into several tables, for example a table for turnover, a table for profit and a table for loss, the information can be presented in a clearer and more understandable way.

#### How can I implement/check it?

Splitting a complex table into several simple tables in Excel is relatively simple and can be done in the following steps:

1. Identify the parts of the table that are to be split into simpler tables.
2. Select the data to be moved to a separate table.
3. Left-click and drag the mouse pointer over the relevant cells to select them.
4. Right-click on the selected cells and select "Cut" from the context menu.
5. Click on the cell in which you want to insert the data to create a new table.
6. Right-click in the selected cell and select "Paste" from the context menu.
7. Repeat this process to create each separate table with the corresponding data.
8. Check each new table to ensure that the data has been placed correctly and clearly.

To check your Excel file for complex tables, take a look at the tables in the document. Are there any tables that you think are complex? Think about how you can split the information into several, simple tables.

### 4.5 The selected table template provides sufficient contrast for the table contents. This also applies to "banded tables" (different coloured rows). Texts have a contrast ratio to the background of at least 4.5:1.

#### What is meant by this?

The contrast ratio refers to the relationship between the text and the background on which it is displayed. A high contrast ratio makes the text easier to read. A sufficient contrast ratio is achieved when the text colour stands out clearly from the background colour. The contrast ratio for normal texts is at least 4.5:1. Black text on a white background (or vice versa) represents the optimum contrast. If other colours are used, the contrast ratio must be checked.

Table templates do not always have sufficient contrast. When selecting colours, always ensure that the contrast is high enough.

#### Why is it important?

Sufficient contrast within a table is of great importance, especially for recipients with impaired vision. If the contrast is not high enough, the text within the table can be difficult or impossible to read, which creates barriers to accessing information.

For example, recipients with colour blindness have difficulty distinguishing between certain colours. A sufficient contrast ratio helps to ensure that they can still read the text. If the contrast ratio between the text and the background is low, it can be more difficult to read the text, even if it is large. Finally, a higher contrast ratio can also make the text easier to read on a screen in a bright light environment as it will stand out more clearly against the background.

#### How can I implement/check it?

If you find that your table does not correspond to the basic contrast ratio of black and white, you can either change the font colour or adjust the background colour to increase the contrast ratio. Here is a simple guide on how to do this:

1. Select the table for which you want to increase the contrast.
2. Under "Table design", select a new colour template that corresponds to the contrast ratio.
3. Alternatively, click on the "Font colour" button in the "Start" tab and select a colour with a higher contrast to the background colour.
4. Click on the "Fill colour" button in the "Design" tab and select a colour with a lower contrast to the text.
5. Make sure that the contrast ratio between text and background is at least 4.5:1.

To ensure that the contrast ratio between text and background is optimal, you can use online tools or downloadable programmes. These can automatically calculate the contrast ratio for you.

If in doubt, it is advisable to opt for a dark text (preferably black) and a light background (white), as the contrast ratio of at least 4.5:1 is always given here. It is important to note that Excel also performs an accessibility check to recognise if the contrast between text and background is too low when it is activated manually.

### 4.6 A table has no empty rows or columns.

#### What is meant by this?

There should be no empty rows or columns in a well-structured Excel spreadsheet, as they can impair readability and lead to misinterpretations. If table areas are to be separated from each other, it is advisable to create a second table.

#### Why is it important?

For staff, people who use screen readers, it is important to note that in Excel, empty cells are read out as "empty" or similar. If cells are empty, screen reader users are informed that this cell no longer belongs to the table. This can make the use of Excel tables confusing for screen reader users and make navigation in the table more difficult. Avoiding empty cells in Excel spreadsheets improves approval and makes them easier to read.

#### How can I implement/check it?

To remove superfluous empty rows or columns from your Excel spreadsheet, proceed as follows:

1. Identify the empty rows or columns that you want to remove. Pay attention to the row numbers and column letters.
2. Select the empty row by clicking on the row number on the left or select the empty column by clicking on the letter at the top of the table.
3. Right-click on the selected row or column and select "Delete" from the context menu.
4. Confirm the deletion of the empty row or column when you are prompted to do so.
5. Check the table to ensure that there are no further superfluous empty rows or columns.

## 5. Cell

### 5.1 Text cells containing only letters contain only short texts. These texts are left-aligned (in contrast to numbers).

#### What is meant by this?

In Excel, cells are formatted specifically based on their content. If a cell contains only numeric values, these are usually formatted as required, for example as a currency with the corresponding currency symbol such as euros or dollars. Right-aligning numbers in Excel facilitates visual readability and alignment in columns.

In contrast, cells containing pure text should be left-aligned to ensure clear legibility. This left-aligned alignment facilitates the visual separation of text content and supports a clear presentation of the data in the table. By observing these formatting rules, Excel tables can be organised more clearly and the data is easier to understand.

#### Why is it important?

Left-aligned formatting is important because it supports recipients, especially those who use a voice output or a screen reader and/or have difficulty following the flow of reading or recognising the text. Left-aligned alignment means that the text within a cell starts on the left-hand edge, making it easier to follow the content. This clear structure improves readability and makes it easier to process information, especially for recipients with special requirements or reading difficulties.

#### How can I implement/check it?

To left-align a text, proceed as follows:

1. Select the cell whose alignment you want to check.
2. Then click on "Start" in the menu bar at the top.
3. Locate the "Paragraph" area in the menu bar.
4. There are four buttons for text alignment in this area: left-aligned, centred, right-aligned, justified.
5. Check which of the buttons is highlighted in grey. This is the current alignment of the text you have selected.
6. The alignment should be left-aligned.

### 5.2 The contents of cells are in a sensible order (from left to right).

#### What is meant by this?

The data within an Excel spreadsheet is organised in such a way that it can be read logically and intuitively. The information in the cells follows an ordered structure from left to right, which typically corresponds to the natural reading flow. This ensures that the information is displayed in an understandable sequence, improving the readability and interpretation of the data.

#### Why is it important?

It is important to arrange the contents of cells in a sensible order from left to right so that recipients who use a voice output or a screen reader and need or want a clear structure for orientation in the spreadsheet can process the information more easily. This "standard" notation also makes it easier for screen reader users to find their way around, enabling smooth navigation within the Excel spreadsheet.

#### How can I implement/check it?

To ensure that the contents of your Excel spreadsheet are arranged in a sensible order from left to right and to create a clear structure for easy orientation in the spreadsheet, you can follow the steps below:

1. Make sure that the data in each line is arranged in logical order from left to right, according to the meaning of the information.
2. Make sure that the order of the column headings corresponds to the contents of the cells and that the information is well structured.
3. If necessary, you can adjust the order of the columns and cells to ensure a consistent and clear structure for easy navigation in the spreadsheet.

### 5.3 Text cells are located before illustrations, diagrams and text fields on a spreadsheet and are organised in a logical sequence one below the other.

#### What is meant by this?

In Excel, illustrations, diagrams and text fields can be inserted into tables. If these elements are on the same spreadsheet, it is important to arrange them in a logical order. It is recommended that text cells are placed before these elements to ensure readability and coherence of the information. By observing these arrangement principles, the Excel spreadsheet remains clear and provides a clear presentation of the data and visual elements.

#### Why is it important?

The arrangement of text cells before visual elements such as illustrations, diagrams and text fields in Excel is particularly important if users are using a voice output or a screen reader. As text cells are read aloud first, this arrangement enables seamless and comprehensible processing of the information for screen reader users.

In addition, illustrations and text fields should be regarded as supplementary elements that should have less relevance in Excel. It is therefore advisable to place them after the main information in text cells to ensure the clarity and readability of the table.

#### How can I implement/check it?

To ensure that the text cells are arranged in front of visual elements such as illustrations, diagrams and text fields, and to check the relevance and structure of the Excel spreadsheet, you can follow the steps below:

1. Check the arrangement of the text cells and make sure that they are positioned in front of the visual elements.
2. Make sure that the illustrations and text fields are regarded as supplementary elements and are positioned accordingly in the table so as not to impair readability.
3. Check that the diagrams are sensibly and logically placed in relation to the table data to ensure a clear connection and presentation of the data.

## 6. Text

### 6.1 The font is sans serif (e.g. Arial, Helvetica) and not too thick or too thin.

#### What does that mean?

It is advisable to choose a sans serif font that is neither too thick nor too thin to ensure optimum legibility. The main focus here is on recognising and distinguishing individual letters and words.

Serifs are small decorations or lines that are attached to the ends of the letters. Sans serif fonts have clear and smooth lines and appear more modern and simple than fonts with serifs.

It is important that the stroke width of fonts is between 10% and 20% of the centre length to ensure sufficient contrast. Fonts without serifs, where the difference between the thickness of the lines of the letters is small, are best suited and correspond to the "Normal" or "Regular" weights. Fine and bold font weights and fonts with a high line weight contrast should be avoided, especially when formatting the entire text.

#### Why is it important?

Sans serif fonts are easier to decipher, especially for people who have difficulty following the reading flow or recognising and reading the text. This is because fonts with serifs (e.g. New Times Roman) can cause letters to blur into one another or be more difficult to read for some people, as the serifs vary the letter shapes more. In addition, fonts that are too thin or too thick can affect legibility, especially for staff, people with impaired vision.

#### How can I implement/check it?

In order to select fonts that are suitable for recipients with visual impairments, the recognisability, distinctiveness and openness of the characters as well as a low line width contrast should be taken into account. Different font classifications and design principles can influence these factors. The following fonts are therefore recommended: Arial, Calibri Regular, Helvetica, Lucida Sans Regular, Verdana Regular, Noto Sans Regular, Open Sans Regular, Source Sans Pro Regular and Fira Sans Regular.

##### You can set sans serif fonts as follows:

1. Select the text or cell in which you want to change the font.
2. Click on the "Start" tab in the menu bar.
3. Select a sans serif font from the drop-down menu in the font selection.

### 6.2 Emphasis using capital letters, italics, bold, underlining or text effects (colour gradient as colour fill, glow effects, text outline) are used sparingly.

#### What does that mean?

The highlighting of text passages using capital letters or text effects such as colour gradients, glow effects or text contours should be used sparingly. In addition to capital letters, such highlighting can also include italicised and bold text, underlined text and text effects, as well as shadows, soft edges, reflections or a glowing appearance. These emphasisations should be limited to individual words at most so as not to disrupt the flow of reading and to ensure a clear structure. It is important to ensure that the font is sans serif and not too thick or too thin (see 6.1).

#### Why is it important?

Highlighting with capital letters or eye-catching text effects can disrupt the reading flow and impair the readability of the text. If, for example, important information is highlighted with various text effects such as glow effects, colour gradients and other highlights, this can distract readers from the actual content. However, a clear structure and easy readability are particularly important for recipients who have difficulty following the flow of the text or recognising/reading it. Many effects and highlighting can also have an overstimulating effect.

#### How can I implement/check it?

To check the text for highlighting, proceed as follows:

1. Take a look at your spreadsheet.
2. Search for cells that have been highlighted in bold, italics or coloured markings.
3. Consider whether the means used actually offer added value for understanding the content.
4. If in doubt, remove the highlighting via the menu by selecting the text to be changed and clicking on the corresponding formatting again under Font.

### 6.3 URL does not appear as plain text. Instead, hyperlinks are inserted, clearly named and easy to understand.

#### What is meant by this?

A URL (internet address or web address in everyday language) should not simply be copied into a continuous text. Instead, the URL should be integrated using a hyperlink. This should be named with a meaningful and understandable title.

Hyperlinks are clickable links within a document or to other documents, websites or files. A hyperlink can be created in Excel in various ways, for example by adding a link to a specific section of the document, inserting a link to an email or linking a text or image to a web page. Hyperlinks are a useful feature in Excel as they allow you to navigate quickly and easily between different sections of the document or between different documents and resources.

It is also important that such links are not labelled "here" or "this link" or "more information". This designation says nothing about exactly what information is meant and where it can be accessed.

#### Why is it important?

Clear and precise naming of hyperlinks is very important to improve the approval of websites. If the URL is not replaced by a hyperlink, screen readers and speech output will lecture the complete URL (starting with "http"). It can therefore be very frustrating for screen reader users if the content of the link is not clear and the entire URL is read out instead. This can significantly impair the use of the document and approval of a website.

#### How can I implement/check it?

To convert URLs into hyperlinks, there are different procedures for Mac and Windows operating systems:

##### Mac:

1. Open the search function by pressing CMD+F.
2. Enter the term "http" or "www" in the search field to find URLs in the file.
3. Press the ENTER button to go to the URL.
4. Is there a URL in the Excel file? Then you should turn this URL into a hyperlink.
5. Click on the link with the right mouse button.
6. Select the "Link" option in the context menu. A dialogue window opens.
7. Under "Text to be displayed" you can enter a clear and easily understandable name for the URL, e.g. consulate homepage.
8. Enter the link under "Address".
9. Click on "OK" to confirm the process.

##### Windows:

1. Open the search function in Excel by pressing the key combination CTRL+F.
2. Enter the term "http", "www" or similar in the search field.
3. All URLs that appear in the file as plain text are displayed under the "Results" tab.
4. Click on one of the URLs displayed to go to the URL.
5. If the URL is in a continuous text, you should make it a hyperlink.
6. Select the entire URL and click on the "Paste" tab.
7. Select the "Link" button in the "Links" area.
8. A dialogue window opens. There you can enter a clear and easily understandable name for the URL under "Text to be displayed", e.g. "Homepage of the consulate".
9. Enter the link under "Address" and click on "OK" to save the process.

You can check it by clicking "CTRL" on the link and making sure that it leads to the intended destination.

## 7. Illustrations, diagrams, text fields

### 7.1 A chart is generated from Excel on the basis of a table (data).

#### What is meant by this?

Excel is a programme designed for the preparation and presentation of data. This also includes the creation of diagrams based on data. Diagrams are therefore not copied into Excel, but created there.

#### Why is it important?

It is important to generate charts in Excel based on tabular data as they contain more information than simple image copies. Staff, people with visual impairments who rely on screen readers cannot access visual information directly, so an alternative form of presentation is necessary. Although alternative texts are limited to a maximum of 125 characters and cannot contain all details, they should make reference to the underlying table. Screen readers can read out the information from the table, making the data accessible to people with visual impairments.

#### How can I implement/check it?

To create a chart from a table in Excel, you can follow the steps below:

1. Make sure your data in the Excel spreadsheet is correct and complete, with clearly labelled columns and rows to prepare it for the chart.
2. Select the area you want to display in the diagram, including the corresponding columns and rows.
3. Go to the "Insert" tab in Excel.
4. Select the chart type that best suits your data. Excel offers various chart types such as column, line, pie, bar and pie charts.
5. Customise the chart as needed by using axis labels, titles, legends and other formatting options to make the chart meaningful and clear.
6. Position the diagram at the desired location in your Excel worksheet.

### 7.2 Illustrations, diagrams and text fields have a meaningful name.

#### What is meant by this?

Illustrations, diagrams and text fields are labelled clearly and precisely to indicate the content or function of the respective element.

#### Why is it important?

Assigning meaningful names to documents and Excel is of great importance as it allows users, including those with visual impairments, to navigate and interpret efficiently. Clearly named objects such as illustrations, diagrams and text fields allow screen readers to accurately reproduce the content, giving students better orientation and a deeper understanding of the data. This improves the overall clarity and comprehensibility of the documents and makes it easier for all users to grasp and process the information effectively.

#### How can I implement/check it?

To ensure that meaningful names are used for illustrations, charts and text fields in an Excel document, you can follow the steps below:

1. Start by navigating to the selection area in Excel.
2. Use the search function in the selection area to find all illustrations, diagrams and text fields on the spreadsheet.
3. Make sure that all objects are included in a list to enable a systematic check.
4. For each individual object in the list, enter a clear and concise name that indicates the content or function of the respective element.
5. Once you have assigned all the names, close the window to apply the changes and save the named objects.

### 7.3 Content-bearing illustrations, diagrams and groupings have a short, concise alternative text. The alternative text of diagrams refers to their table via their table name, contains the diagram type and information on the content. Illustrations and groupings with no meaning are marked as decorative.

**What is meant by this?**

To improve the approval of an Excel file, all illustrations, diagrams and groupings of graphical elements contained therein should be provided with alternative texts that describe them. An alternative text is a short and concise description of the content of the graphic that is read by screen readers and speech output devices in order to understand the content.

Purely decorative illustrations, diagrams and graphic groupings with no relevance to the content should be labelled accordingly. In Excel, these elements can be marked as "decorative" to signalise that they do not contain any relevant content and can therefore be skipped by screen readers.

Charts are generated in Excel from data tables. The alternative text should contain the table name in order to establish the connection between the chart and the table. The alternative text should also contain the chart type and the content of the chart.

**Why is it important?**

A suitable alternative text for an image is important as it enables all recipients to understand the content of an image. If an image has no alternative text or the alternative text is insufficient, the image becomes invisible to screen reader and speech output users. This means that these recipients miss out on important information that could be contained in the image.

An appropriate alternative text describes, for example, an illustration briefly and concisely and conveys how it relates to the content of the file or table. If the illustration contains important information that is not or cannot be presented differently in the text, it is important to include this information in the alternative text so that it can be recognised by screen readers and speech output. A detailed description of the illustration is not usually necessary for an alternative text. In the event that an illustration, diagram or graphic grouping contains a lot of important information, this should be included in the text itself or a detailed text alternative should be provided. As a general rule, an alternative text should contain a maximum of 120 characters.

The alternative text for an Excel chart of sales development could read: "Sales development by quarter - bar chart. Table 'Annual turnover' 2021-2023." This clearly communicates what the chart shows, what type it is and which table it refers to. Users who use screen readers can thus grasp the relevant information on the company's sales development even without visually grasping the chart.

**How can I implement/check it?**

To add an alternative text for an image in Excel, left-click on the image and select "Alternative text" from the "Image format" menu. Then enter a precise description of the content of the image in the text field. If the image is only decorative, mark it as such and leave the alternative text field empty. To mark an image as decorative, proceed as follows:

1. Select the image you want to mark as decorative.
2. Right-click on the image and select "Format Image" from the drop-down menu if you have a Windows computer. Alternatively, if you have a Mac, you can select "Display Alt Text" and a window/menu will open on the right-hand side
3. Select the "Alt text" item in the "Image format" tab.
4. In the Alt Text dialogue box on a Windows computer, select the "This image is decorative" checkbox, while on a Mac you can select the "Mark as decorative" option below the text field.
5. Click on "OK" to save the changes.

Excel offers an integrated function that allows you to check whether or not an alternative text exists for a graphic. You can also check for redundant alternative texts by reading the text around the graphic and ensuring that it does not match the alternative text.

To use the integrated function in Excel that allows you to check whether alternative text is available for illustrations, diagrams or graphic groupings, proceed as follows:

1. Select the image for which you want to check the alternative text.
2. Right-click on the image and select "Format Image" from the drop-down menu. With a Mac, you can alternatively select "Display Alt Text" and a window/menu will open on the right-hand side
3. Select the "Alt text" item in the "Image format" tab.
4. Check whether the text field for the alternative text is filled in. If so, the image contains an alternative text. If not, the alternative text is missing and should be added.

Excel automatically generates its own ALT texts on request, but in many cases these do not fit and should therefore be checked and adapted if necessary.

### 7.4 Content-heavy (complex) illustrations, diagrams and groupings of graphical elements are specifically described in the document (as a table, alternative text, other text or link to a website), with the data contained where applicable.

#### What is meant by this?

A detailed descriptive text alternative for a content-heavy (complex) illustration, a diagram or a grouping of graphic elements contains a detailed description of the content and its significance for the file or table. In contrast to an alternative text, which only contains a brief summary of the image content, a detailed descriptive text alternative should convey all the important details that are necessary for the comprehensibility of the illustration, for example. A full descriptive text alternative should use clear and concise language and include all the important information of the illustration, including colours, shapes, text, staff, people, places and actions depicted. However, the text should not be redundant or superfluous and should be limited to the relevant information contained in the illustration. Diagrams relating to data in particular should be described in detail in order to clarify the relationships shown.

If a text alternative is required for a visual representation, it should be provided either in the same file or in a separate document. The text alternative should be included in the same file as the illustration or diagram and located close to it. In this way, recipients who need an image description can find the text alternative more easily. If the text alternative is provided in a separate document, a link to the text alternative should be included in the document and made accessible.

#### Why is it important?

The use of fully descriptive text alternatives is an important aspect of the accessibility of digital content as they ensure that recipients with visual impairments can understand the content of complex illustrations and diagrams. A detailed descriptive text alternative can be particularly important if the illustration contains important information that cannot be presented in any other way in the text of the file. As complex illustrations are usually difficult to describe, it is particularly important that they are provided with a precise and detailed text alternative so that everyone can understand the content of the illustration or diagram.

An example of a detailed descriptive text alternative for a complex illustration could look like this: "The picture shows a group of people sitting at a round table and discussing. In the centre of the table is a cake with "Happy Birthday" written on it. The staff, people are walking around the table, smiling and raising their glasses to toast the birthday. The room is decorated with balloons and garlands and you can see a band playing music in the background." The more important the details are for understanding the content, the more detailed they need to be described.

**How can I implement/check it?**

A descriptive text alternative should contain a precise and accurate description of the visual element (e.g. image, diagram, graphic) and convey its meaning for the content of the file. Here are some steps that can help you create a good descriptive text alternative:

1. Identify the visual element: Think about which visual element is to be described and what information it contains.
2. Describe the visual element: Describe the visual element in as much detail as possible to ensure a clear picture of what is shown in the illustration or diagram.
3. Consider the context: Consider how the visual element fits into the context of the file and what information it conveys. Make sure that the text alternative helps the reader to understand the meaning of the visual element in the context of the Excel file.
4. Use clear language: Use clear, simple language and avoid technical terms or abbreviations that may be difficult to understand.
5. Avoid redundancy: Avoid repeating information that already exists in the text of the file.

There are a few steps you can take to check your text alternatives:

1. Check whether the text alternative contains all the important information of the visual element.
2. Make sure that the text alternative is understandable and easy to read.
3. Check whether the text alternative makes sense in the context of the file and has a clear connection to the text or other visual elements.
4. Ask someone who does not know the information in the visual element to read the text alternative and check that they can understand the meaning and purpose of the visual element.
5. Check that the text alternative is not redundant, i.e. that it does not repeat any information already in the text.

### 7.5 No illustrations are used to represent text ("font graphics"). Exception: Essential font graphics have a meaningful alternative text. Redundant font graphics are labelled as decorative.

#### What is meant by this?

It is recommended not to display text using font graphics. Instead, the text should be typed and formatted as actual text. If font graphics are still used, it is necessary to provide an alternative text that describes the content of the graphic. If the font graphics are redundant and contain the same text as the surrounding text, they should be labelled as decorative.

Type graphics are graphics that consist entirely of text characters and symbols and do not contain images, photos or other visual elements. Font graphics are often used for the design of logos, posters, banners and other marketing materials. WordArt is a font graphic that allows users to design text in different styles and shapes.

#### Why is it important?

The use of font graphics can lead to limitations in the accessibility of digital content, as they cannot be recognised by screen readers or voice output for recipients with visual impairments. If the text is entered and formatted as real text, it can be read more easily by assistive devices. However, if written graphics are used, it is important to provide alternative text to ensure that the content of the graphic can be understood by all recipients.

**How can I implement/check it?**

To avoid font graphics in Excel, you should enter and format the text as real text instead of inserting it as an illustration. If you still use font graphics, you can specify an alternative text by right-clicking on the illustration and selecting "Alternative text". Enter a description of the text in the illustration in the "Description" field.

If the font graphics are redundant, you can mark them as decorative by right-clicking on the graphic and selecting "Mark as decorative".

### 7.6 Graphic information-bearing elements (e.g. lines, neighbouring areas) have a minimum contrast of 3:1 to the background.

#### What is meant by this?

Graphic information-bearing elements are visual elements that convey information in a document. These include, for example, lines, neighbouring areas and other graphic "aids". If these are used in Excel, they must have a minimum contrast of 3:1 to the background of the document. The minimum contrast refers to the ratio or difference in brightness or colour depth between the two colours in graphic elements and the background.

**Why is it important?**

For recipients with visual impairments, sufficient contrast between graphic elements and the background can be crucial for recognising them. Insufficient contrast makes it difficult to recognise and can lead to misinterpretation. It is therefore important that graphic elements such as images or buttons have a sufficient minimum contrast.

Sufficient contrast not only makes it easier for recipients with visual impairments to perceive content. Recipients who work in an environment with poor lighting conditions, have a printout in black and white or are watching a presentation via a projector also benefit from a high contrast ratio. Sufficient contrast ensures that the content is clearly recognisable, making it easier to absorb and process information.

#### How can I implement/check it?

There are various options in Excel for realising a minimum contrast of 3:1:

1. Use high-contrast colours: Select colours that have a high contrast to each other, e.g. black on white or yellow on black.
2. Use the integrated colour schemes: Excel offers a variety of integrated colour schemes that have been specially developed for good readability and contrast. You can find these options by navigating to the menu item "Page layout" and selecting the sub-item "Colours".
3. Check the contrast with an online tool: There are various online tools that can calculate the contrast between two colours and display whether the minimum contrast of 3:1 is achieved. You can use these tools to ensure that the contrast of your colour combinations is sufficient.

However, it is important to note that the minimum contrast of 3:1 is only the absolute minimum value and it is advisable to use a higher contrast, especially if the document is intended for recipients with visual impairments or reading difficulties.

To ensure that the contrast ratio between graphic information-bearing elements and the background is optimal, you can use free online tools or downloadable programmes.

### 7.7 No animated graphics (GIFs) are used.

#### What is meant by this?

Animated graphics in the form of GIF files should not be used in an Excel file. Animated graphics or GIFs (Graphics Interchange Format) are file formats for graphics that can play a sequence of images in a loop to create a short animation. The looping function means that GIFs are played over and over again until the viewer closes them or scrolls further. Still images can also be converted to GIF format, but this significantly reduces the quality.

#### Why is it important?

The use of animated graphics should not be used in the design of accessible digital content. It is important to note that GIFs generally do not offer the option of pausing or stopping the animation, which makes it difficult for recipients with concentration difficulties, for example, to grasp the content or concentrate on content outside the animation. Fast movements or flickering effects can also trigger seizures in some recipients with photosensitivity.

#### How can I implement/check it?

You can switch to static graphics to convey information instead of using animated GIFs. Depending on the operating system, the check for GIFs is carried out in two different ways:

##### Mac:

1. Check whether animated graphics are available in the Excel file.
2. If so, consider whether these graphics add value to the content of the Excel file.
3. If the animated graphics have no added value, remove them from the document.
4. If you want to keep the graphic, switch off the animation.
5. Right-click on the animated graphic.
6. Select the "Cut" option.
7. Now click on "Start" in the menu bar at the top.
8. Click on the arrow symbol next to the "Insert" button.
9. Select the "Insert as image" option.
10. The image should no longer be animated.

##### Windows:

1. Look at all the graphics in the Excel file and pay particular attention to those that move.
2. Check whether the moving graphics add value to the content of the Excel file. If not, you should remove them.
3. If you want to keep the graphic still, click on it with the right mouse button.
4. Select the "Cut" option from the context menu.
5. Right-click again at the point where you want to insert the graphic again.
6. Select the "Insert" option and then "Graphic" from the menu.
7. The image should now be inserted as a static graphic without movement.

## 8. Export/print

### 8.1 Tables that extend over more than one page have a header and footer on each page. These are free of relevant information. The table header is repeated on each page ("repeat row").

#### What is meant by this?

Excel files do not normally require headers or footers, as Excel is mainly used for data processing and not for text presentation. However, this function is available when exporting to a PDF file or when printing. The header could contain the file or table name and the date, while the footer usually shows the page number. A repeat row in Excel ensures that the header row, which normally contains the column labels, is repeated on each page to make it easier to read and interpret the data across multiple pages. The footer may contain additional information such as page numbers, dates or file names, but is not essential in digital Excel files and can be removed in such cases to save space and improve the readability of the spreadsheet. If the data does not fit on a single page, it is advantageous to define a repeating row or header row.

#### Why is it important?

The headers and footers in an Excel spreadsheet are important because they help recipients, especially those with cognitive or concentration problems and screen readers, to orientate themselves in the document and better grasp the structure of the data. When Excel files are exported to PDF or printed, the headers and footers play a crucial role by providing recipients with important contextual information and helping them to interpret and process the content of the files more easily. They serve as visual anchor points to help readers navigate and understand the table data.

#### How can I implement/check it?

To configure headers and footers in Excel, proceed as follows:

1. Click on "Page layout" to open the menu.
2. Select "Set up page". This will open a new window.
3. In this new window, search for the "Header/Footer" section.
4. Here you have the option of customising your headers and footers according to your requirements. You can add text, insert the date or place other relevant information.
5. If you want to make sure that the table header is repeated on every page, go to "Page Setup" and find the "Sheet" section.
6. In this section you will find the options "Repeat lines at the top" and "Repeat lines at the bottom". By specifying the corresponding settings, you can define which lines should be repeated on each page to improve readability.

### 8.2 Page breaks in table rows are suppressed for tables.

#### What is meant by this?

#### Page breaks in table rows occur when a table row does not fit on one page and parts of the text are moved to the next page. To ensure the readability and comprehensibility of a multi-page table, page breaks in table rows should be avoided. In concrete terms, this means that automatic page breaks within table rows are prevented. Instead, longer text within a row is not split and is displayed on one page to ensure better readability and comprehensibility of the entire table.

#### Why is it important?

#### If page breaks in table rows are not prevented, various problems can occur. For example, cells or columns may be displayed on different pages and the relationships between them may be lost. The contents of table cells can also shift if rows are moved to another page, making the table as a whole difficult to read. A clear and well-structured table is therefore essential for the accessibility of documents.

#### By suppressing page breaks in table rows, the clarity and structure of the table is improved. Information in the table cells remains uninterrupted and the connection between the individual data is maintained.

#### How can I implement/check it?

Depending on the operating system, implementation is carried out in two different ways:

##### Mac:

1. Go to the table with the mouse and click with the right mouse button on the top left or bottom right corner of the table. A context menu opens.
2. Select the "Table properties" option from the context menu.
3. In the window that opens, select the "Line" area.
4. Make sure that the option "Allow page break in line" is not activated. If this option is activated, deactivate it by removing the tick in the corresponding box.

##### Windows:

1. Go to the table with the mouse and click with the right mouse button on the top left or bottom right corner of the table. A context menu is displayed.
2. Select the "Table properties" option in the context menu.
3. In the "Table properties" window, select the "Row" area.
4. Make sure that the "Allow line breaks on pages" option is not activated. If the box next to it is ticked, click on it to deactivate it.
5. Click on "OK" to save the changes.

Deactivating the "Allow row changes on pages" option ensures that table rows are not split across two pages and that the table as a whole remains easier to read and understand.

To check whether page breaks in table rows are prevented in a table, you can go through the table via View, Page layout and check whether all table rows are displayed completely on one page. If the content in a row is too large, it is advisable to either shorten it, split it up or consider alternative display options.

## Further links:

<https://support.microsoft.com/de-de/office/gestalten-barrierefreier-excel-dokumente-f%C3%BCr-personen-mit-behinderungen-6cc05fc5-1314-48b5-8eb3-683e49b3e593>