Provision of Figure Files

Supplementary Guidance Document

2022

1. Figures and Graphics

Figures are a common and often integral part of the text, used to simplify or illustrate concepts. To provide a comprehensive standards package including XML, the requirements in this section apply.

Provision of figure files within CENELEC is optional. However, since there is a requirement in CCMC to provide XML for 100% of applicable deliverables, provision of figure files with the text is **strongly encouraged** where they are available, to ensure a high-quality XML file.

The guidance laid out in this document covers the drafting of figures (including styling and layout), the technical requirements for the provision of files, and how to insert the figure files into Word.

2. Drafting figures within the text

2.1 Introduction

Figures generally comprise the following elements:

- One image file;
- A key title and text (if applicable), with the key text laid out in a table with hidden borders;
- The figure title/subtitles;
- Units (if applicable), before the figure in the format 'Dimensions in xx';
- Notes and footnotes (if applicable).

See Internal Regulations Part 3:2022, Clause 28, for further layout guidance.

Complex graphical configurations (i.e. oversized figures, figures with large amounts of explanatory text, or figures running across several pages) should be avoided. These need to be formatted manually and can create additional work to process the deliverable for XML.

2.2 General drafting requirements

2.2.1 Numbering and Layout – Main Figures

Figures in the main body of the text shall be numbered clearly. Numbering is continual, with the first figure in the text being Figure 1, the second Figure 2, the third Figure 3, etc.

Numbering restarts in each Annex (see Internal Regulations Part 3:2022, Clause 28.3.1).

For subdivided figures, there shall be a **main number designation** (e.g. Figure 1, Figure 2) and preferably a main title, then each subfigure shall have its own **letter designation** (e.g. a, b, c) and if applicable, a sub-title.

Figures shall not be divided as 'Figure 1.1', 'Figure 1.2' (see Internal Regulations Part 3:2022, Clause 28.3.2).

Titles for figures are **strongly recommended**, but are optional.

Where a figure title is used, the figure number shall be followed by a long 'em' dash (see Example 1 below). For figures in annexes, the numbering shall start with the Annex letter, and then a full stop, and then the number of the figure.

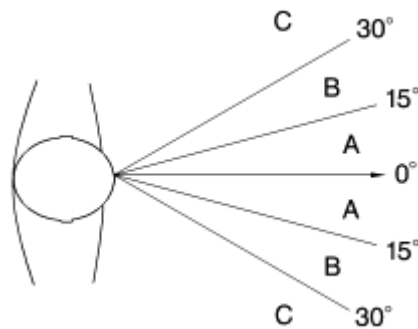**EXAMPLE 1   Correct layout of figures (with number designation and title).**
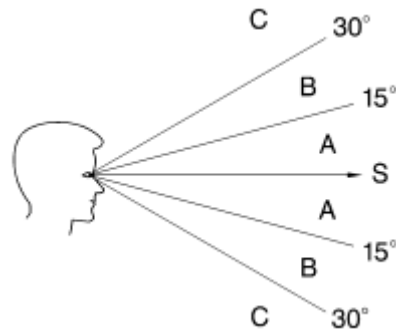
Key

Zone A   Recommended
Zone B   Acceptable
Zone C   Not suitable
Line S   Imposed line of sight

Figure 1 — Field of vision when line of sight direction is imposed by external task requirements

EXAMPLE 2   Correct layout of a figure in an Annex (with number designation and no title).

Key

Zone A   Recommended
Zone B   Acceptable
Zone C   Not suitable
Line S   Imposed line of sight

Figure A.1

2.2.2 Numbering and Layout – Subfigures

Figures may be divided into separate subfigures, up to one level.

Each subfigure shall be individually labelled using a small letter (a, b, c...) and an optional subfigure title (See Example 3 below).

EXAMPLE 3   Correct layout of subfigures.
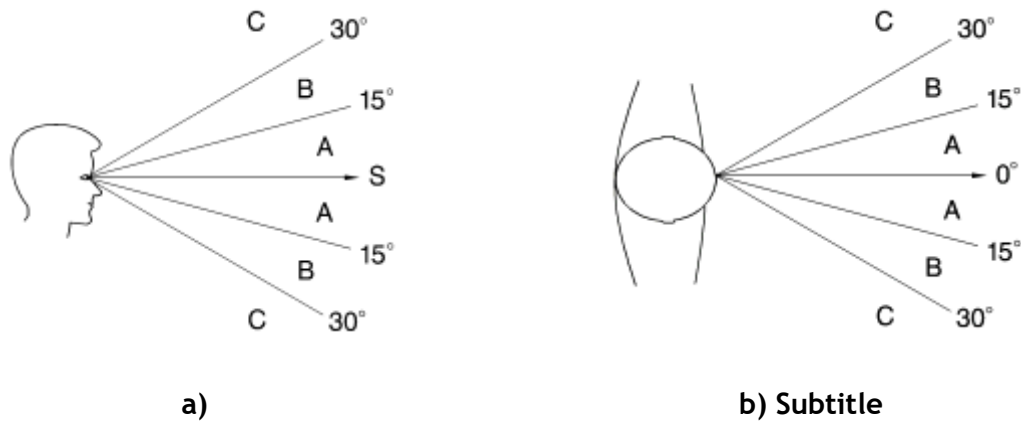
a)	**b) Subtitle**

Key
Zone A   Recommended
Zone B   Acceptable
Zone C   Not suitable
Line S   Imposed line of sight

Figure 2 — Field of vision when line of sight direction is imposed by external task requirements

In this example, subfigure a) is an example without a title, and subfigure b) is an example with a title. Both options are acceptable, but titles are **strongly recommended**.

Subfigures which need to appear side-by-side shall be laid out in a table, with borders hidden. The letter designation and subtitle shall appear in a row beneath the subfigure.

To hide borders:

- Create a Standard table,
- Insert the images required, and the subfigure labels beneath
- Highlight the whole table,
- On the ribbon at the top of Word, under the 'Table Design' tab, select the drop-down menu under 'Borders'
- Then, choose 'No Border'

This will make the table lines invisible.

This shall also be done for key text layout.

EXAMPLE 4   Hiding table borders

To hide the table borders, highlight the whole table, go to 'Table Design' in the ribbon across the top of Word, and choose the drop-down menu under 'Borders'.

Choose 'No Border'.

To show the dotted ghost lines (these do not show up when printed or converted to PDF), from the same menu choose 'View Gridlines'. Uncheck this to hide the dotted lines.

NOTE This is useful to do when you have a number of table arrays with hidden borders, and want to see at a glance where they are.
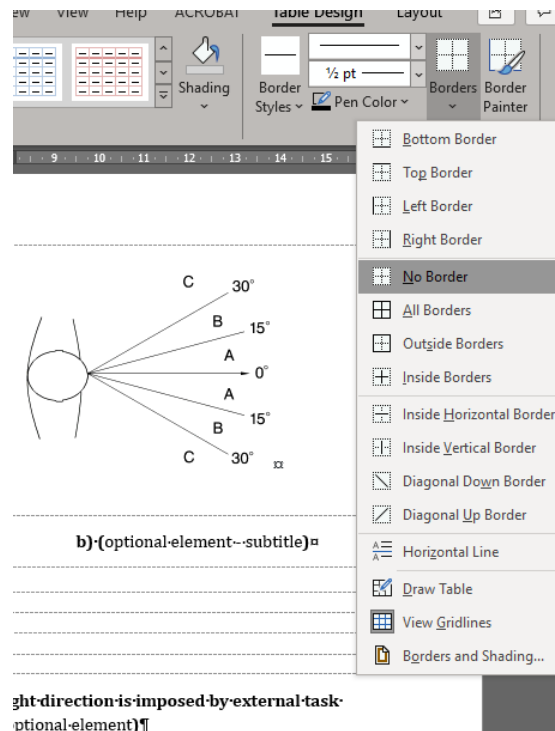
2.2.3 Figure Content Rules

Figures shall be language-neutral, see Internal Regulations Part 3:2022, clause 28.5.3.

Figures sometimes include textual elements in addition to the image itself, such as keys, notes, and explanations. These elements are language-sensitive and therefore require translation. As the deliverable goes through the different stages, these elements may need to be edited, either by the CCMC editor, or by the working group.

Textual elements shall therefore **not** be contained within the image file itself, but rather as a separate element. A key shall be used to label aspects of the figure content. Notes shall be used to give additional informative information. Figure text shall be used to give specific requirements or information pertaining to the figure itself.

Editable textual elements enables a single image file to be used across all language versions of a deliverable, and greatly reduces the work required to translate/edit figures at all stages.

Keys

Keys shall be drafted beneath the figure image, as shown in examples 1 and 2 above.

Key labels shall be contained in the image file.

The key content shall be laid out in a table with borders hidden (**see EXAMPLE 4**).

The key title shall not be contained in the Key table.

Notes

Notes to figures shall follow the same rules as notes found in the main body of the text, i.e. no requirements, recommendations or permissions.

Notes shall appear after the key, or before the title and after the figure image if there is no key present.

Multiple notes to figures shall be numbered, with the numbering restarting within each figure (independently from any notes found within the subclause/clause).

EXAMPLE 5   Correct layout and numbering of Notes.

a)   b) Subtitle
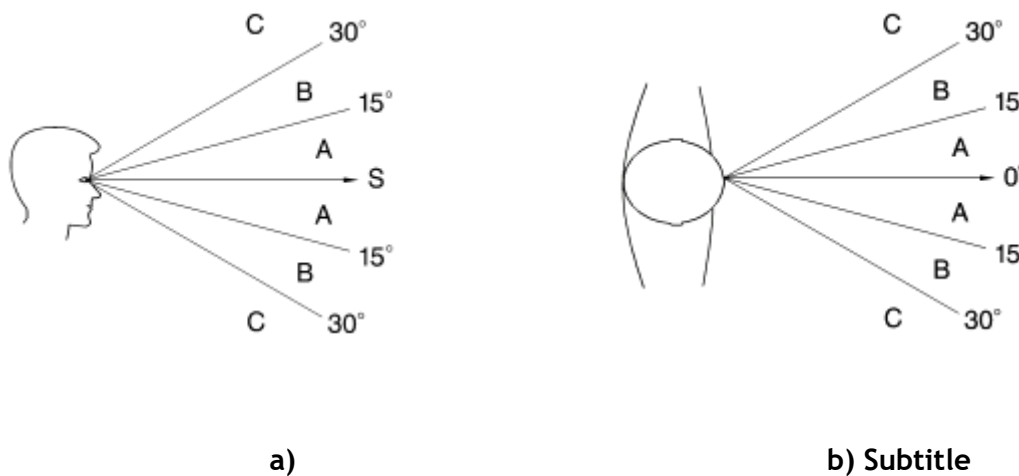
Key
Zone A   Recommended
Zone B   Acceptable
Zone C   Not suitable
Line S   Imposed line of sight
NOTE 1 Vision is measured from the head height only, and the head is not tilted. In the event of head tilt, the 'acceptable' zone becomes 'not suitable'.
NOTE 2 Vision is measured for adults only.

Figure 2 — Field of vision when line of sight direction is imposed by external task requirements

Explanations

If there are further requirements or things to mention regarding a specific figure, lines can be added in the same place as the notes, i.e. after the figure image, but before the key/title.

These elements are treated as plain body text, therefore can contain requirements, recommendations, and permissions.

These elements shall be styles as 'Figure Text'.

EXAMPLE 6   Correct layout of textual explanations.

a)   b) Subtitle
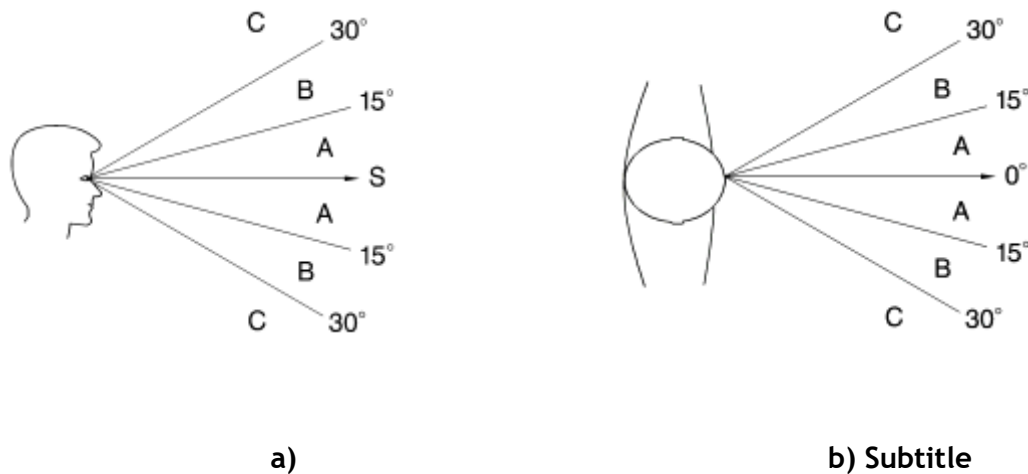
Key
Zone A   Recommended
Zone B   Acceptable
Zone C   Not suitable
Line S   Imposed line of sight
Vision shall be measured from the head height only, and the head shall not be tilted. In the event of head tilt, the 'acceptable' zone becomes 'not suitable'.

Figure 2 — Field of vision when line of sight direction is imposed by external task requirements

2.2.4 Editing Figure Content

Where the content of a figure needs to be edited or changed, the figure file itself shall be edited.

Do not edit the figure in Word, using text boxes or autoshapes. XML does not support these elements. When the CCMC editor processes the text for XML provision, these elements are deleted, and information is therefore lost.

Do not crop the figure in Word, using the cropping tool. Any cropping shall be done using the applicable software i.e. photoshop, for .tif(f) files.

At present, CCMC does not have the capability to edit image files in-house. This shall therefore be done by the TC/Working Groups.

2.2.5 General Technical Rules

Figures shall be oriented upright, regardless of if they appear in the text on a portrait page or a landscape page.

The image boundaries shall not exceed 170 mm × 255 mm or 255 mm × 170 mm, depending on the object orientation. This boundary shall include space for the figure title, and the dimensions/key (if applicable).

The size of the image in the figure file shall be the same size as appears in Word (both height and width as close to 100% as possible).

NOTE   In some cases, the height can be 99% and the width 101%. This kind of tolerance is acceptable. If the height is 48% and the width 150%, this is not acceptable.

This means that the figures shall not be inserted into the Word file, and then expanded manually within Word. If the image is too large, **resize the image within the figure file itself**, using the relevant software, and then reinsert the figure into the Word file.

EXAMPLE 7   Checking Output Size of Figures.

To check the output size of a figure, click on the figure, and then from the ribbon across the top of Word, choose 'PICTURE TOOLS' and then 'FORMAT'.
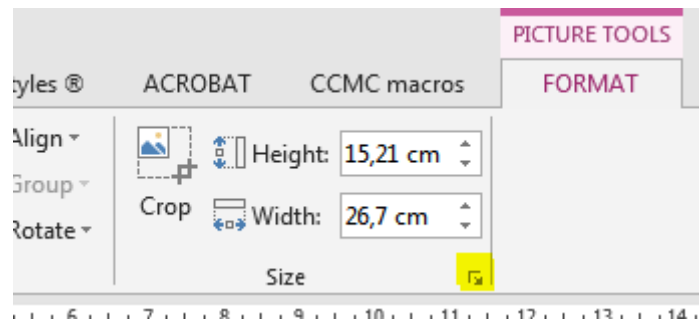
Click the highlighted arrow, and the following box will pop out:
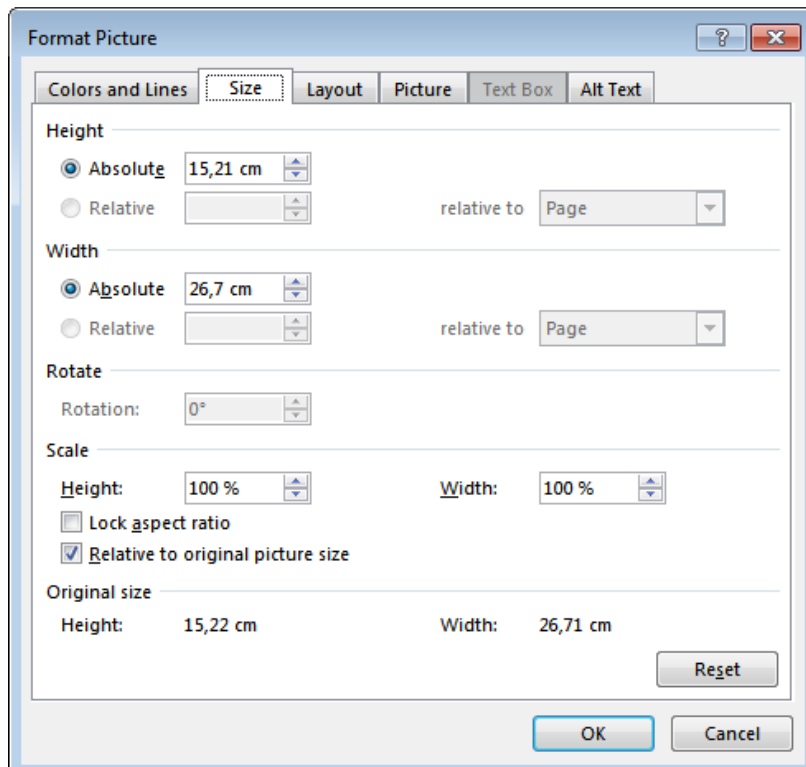
As shown, the 'scale' is 100% for both height and width, relative to original picture size. This means the figure file provided has not been manually cropped or resized in Word, and therefore conforms to the requirements defined in Clause 4.3.

2.2.6 Exceptions and Special Cases

Flowcharts, organization charts and forms all need to include textual elements as part of the graphic file itself. The rules of language neutrality therefore do not apply.

For the translation procedure, these elements need only be delivered by the TC in the reference language.

3. Providing Figure / Image Files

3.1 General

For every image in the text, a single figure/image file shall be provided. This includes:

- Designated figures
- Subfigures
- Symbols in keys
- Images in main body text
- Images in designated tables

Figure files are essential for the provision of an XML file. If a figure file is not available to the editor at the time of editing, the figure will not be present in the XML file, and therefore will not display in any PDFs generated from the XML file.

Figures shall be provided in .tif(f) format (Adobe Photoshop).

3.2 Naming of Figure Files

Figure files of any format shall follow the naming conventions defined below.

For designated figures (i.e. those with a number and title in the text):

- 0001, 0002, ... 9999: for Figure 1, Figure 2 ... Figure 9999
- a001, a002, ... z999: for Figure A.1, Figure A.2 ... Figure Z.999
- za01, za02, ... za99: for Figure ZA.1, Figure ZA.2 ... Figure ZZ.99

For undesignated figures (i.e. those in keys, tables, or clauses):

- cl4_3_1 = Clause 4.3, image 1
- 0001_1 = Figure 1, key image 1
- tbl_1_1 = Table 1, image 1

3.3   Specific requirements for .tif(f) files

Where .tif(f) files are provided, the following requirements are applicable.

- Compression LZW for **coloured** images (CCITT4 compression is permitted for monochrome figures/photos)
- Colour encoding: Monochrome (1 bit) up to true colour (24 bit)
- Output size (defined as Image Size, see examples below): 100%
- Resolution: 600 dpi.

See EXAMPLE 7: Checking output size of figures.

NOTE   Failure to follow these requirements can result in the text being rejected until the figure files are compliant. See clause 4.5.3 for information on how to check the quality of figures prior to submission.

3.4   .eps files

.Eps files are no longer supported in Word, and are therefore no longer accepted by CENELEC.

For any specific cases, issues, or questions, please contact Production (production@cencenelec.eu).

3.5   Linking figure files in Word

3.5.1 File Path naming

CCMC uses various tools which check figure quality and aid the CCMC editor in XML creation. These tools depend on figure files being linked with the Word document, and as such if there is no link, the tools cannot work.

In order for these links to work, and to remain the same, the following folder names are strongly recommended:

- XX_e_dr   folder containing figure image files
  - Where 'XX' is the stage (41 for Enquiry, 43 for 2nd Enquiry, 51 for Formal Vote, 64 for Publication)
  - E is the language. F shall be used for French language figures, and D for German language figures.
- Figure files to be named according to conventions defined in clause 4.2

Linking the figures into word and following the naming convention of folders above enables the figures to be viewed and processed on any computer, regardless of local file paths.

NOTE   If the name of a figure file changes after linking, that figure will need to be relinked.

3.5.2 Procedure

To link the figures, see **EXAMPLE 8.**

EXAMPLE 8   How to Link Figures.

To link the figures:

- Go to the 'Insert' tab on the top ribbon in Word;
- Click the drop-down menu under 'Pictures', and choose 'This Device'
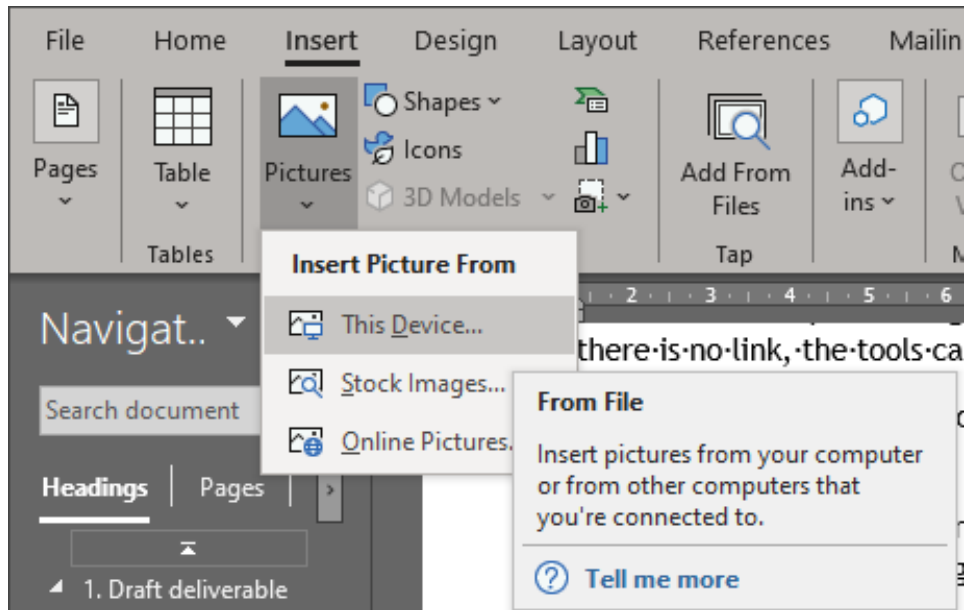
- Select the file path, and choose the figure file to be inserted.
- From the drop-down menu under 'Insert', choose 'link to file'
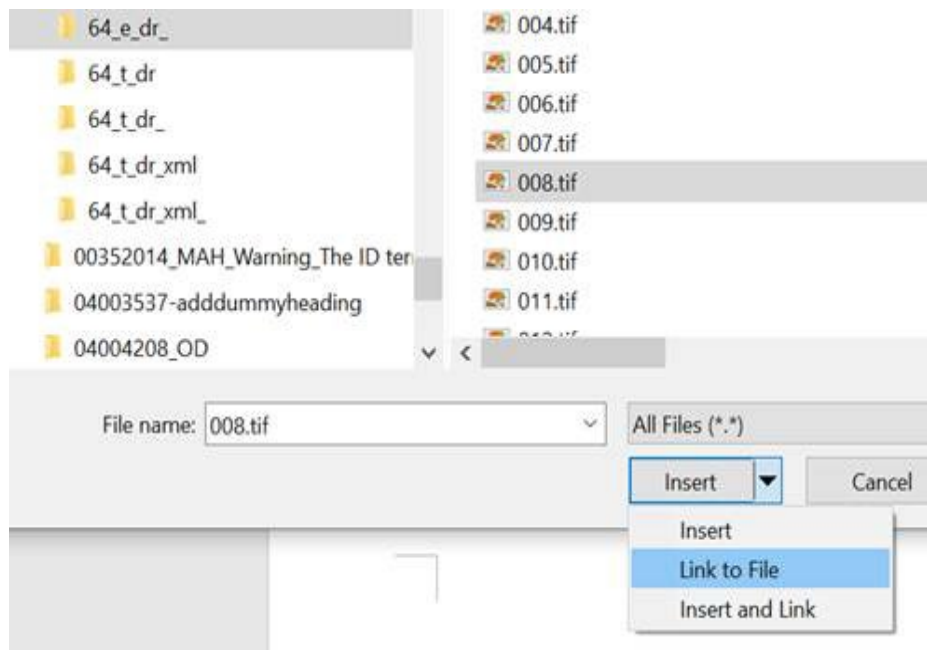
If the figure is not visible, choose 'Insert and Link' instead. Note that this can increase the overall file size of the deliverable.

3.5.3 Image Quality Check Tool and tips

The Image Quality Check tool can be found on ProjexOnline, in the top-right-hand corner of the page.
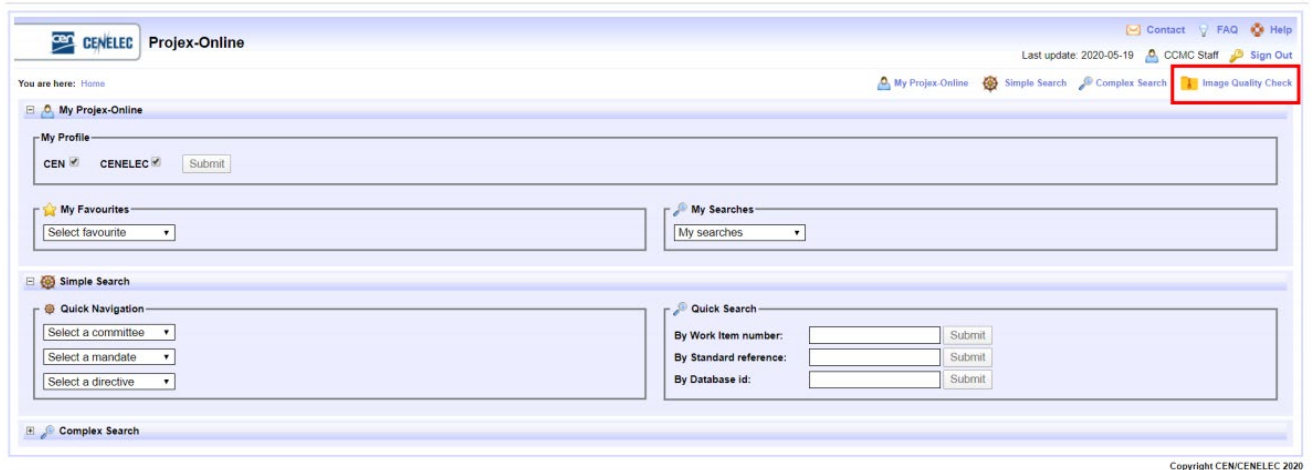
Click the link to navigate to the following page:

At the centre of the page, a zip-file can be uploaded.
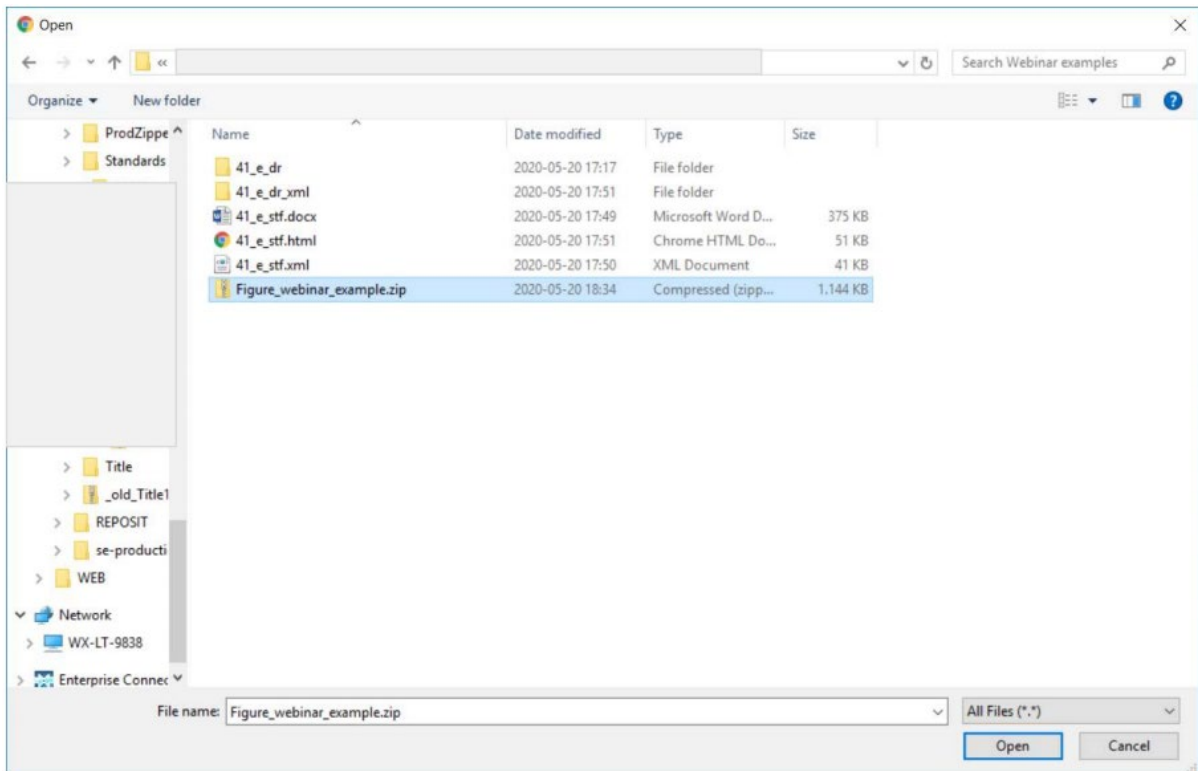
The user uploads a zip file containing the figure files and the Word document deliverable.

Once the zip file has been assessed by the tool, a pop-up window will appear showing the quality check details of the figures. Errors will be highlighted in orange. Those results can also be downloaded as an Excel file in which the errors will be highlighted in yellow.

	"Images" tab checks the figure files contained within the zip file (file naming, resolution, compression and layers)
Pop-up window	✕ ⊡ Images ⊡ Word images ⊡ Word legacy images ⊞ Word shapes 	Filename	Width (in px)	Height (in px)	X Resolution	Y Resolution	Is colored ?	Image compression	Is single layer	Comments
001.tif	3369	1470	600	600	☐	Group4	☑	• QC OK
002.tif	3549	1676	600	600	☐	Group4	☑	• QC OK
003.tif	3162	1211	600	600	☐	Group4	☑	• QC OK
004.tif	3760	1412	600	600	☐	Group4	☑	• QC OK	 For a list of possible errors (highlighted in orange), please refer to the main Image Quality Check page. ⬇ Download report ⬇ Correct resolution ✓ Close
Excel file			A	B	C	D	E	F	G	H	I
---	---	---	---	---	---	---	---	---
2	Filename	Width (px)	Height (px)	ResolutionX	ResolutionY	Colored	Compression	Single Layer/Page	Comments
3	001.tif	3369	1470	600	600	No	CCITT4	Yes	QC OK
4	002.tif	3549	1676	600	600	No	CCITT4	Yes	QC OK
5	003.tif	3162	1211	600	600	No	CCITT4	Yes	QC OK
6	004.tif	3760	1412	600	600	No	CCITT4	Yes	QC OK
7	For file naming convention see 4.2 naming of figure files https://boss.cen.eu/reference-material/guidancedoc/pages/prepfiles/									 Sheet tabs: GRAPHIC_FILE_AUDIT FIG_IN_WORD_QC FIG_IN_WORD_LEGACY_FORMAT WORD_SHAPE_SEARCH ⊕
Notes	- The "Correct resolution" button will only correct the resolution (DPI) of the figures

"Word images" tab checks the figures within the Word document (size, scaling, cropping, links)

Pop-up window

For a list of possible errors (highlighted in orange), please refer to the main Image Quality Check page.

Excel file

	A	B	C	D	E	F	G	H	I	J	K	L
2	Linked filename	Width scale	Height scale	Width (mm)	Height (mm)	Cropping	Comments	Width (px)	Height (px)	Is link absolute ?	Is image linked ?	Does linked image exists ?
3	001.tif	100%	100%	143	62	N/A	QC OK	3369	1470	Yes	Yes	Yes
4	002.tif	100%	100%	150	71	N/A	QC OK	3549	1676	Yes	Yes	Yes
5	Image not linked	100%	100%	134	51	N/A	The image should be linked; The link to the physical image is broken	3162	1211	No	No	No
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												

GRAPHIC_FILE_AUDIT | **FIG_IN_WORD_QC** | FIG_IN_WORD_LEGACY_FORMAT | WORD_SHAPE_SEARCH

Notes:

- The column "Is link absolute?" will be ticked and highlighted when the figures are linked properly
- Scaling/Cropping: figures shall not be resized/cropped within Word
- The layout of the Excel file will be revised to match the Pop-Up window in order to provide a better readability (i.e. column "Comments" will be moved to the right, columns "Width/Height (px)" will be removed)

Tip	To check the output size of a figure, click on the figure, and then from the ribbon across the top of Word, choose 'PICTURE TOOLS' and then 'FORMAT'. This can also automatically appear by double-clicking on the figure. Click the highlighted arrow, and the following box will pop out: As shown, the 'scale' is 100% for both height and width, relative to original picture size. This means the figure file provided has not been manually cropped or resized in Word, and therefore conforms to the requirements defined in Clause 4.3.
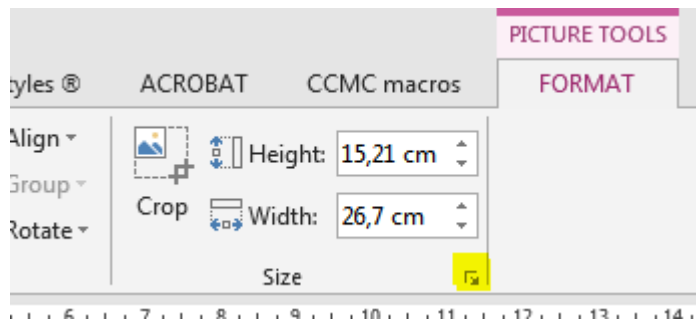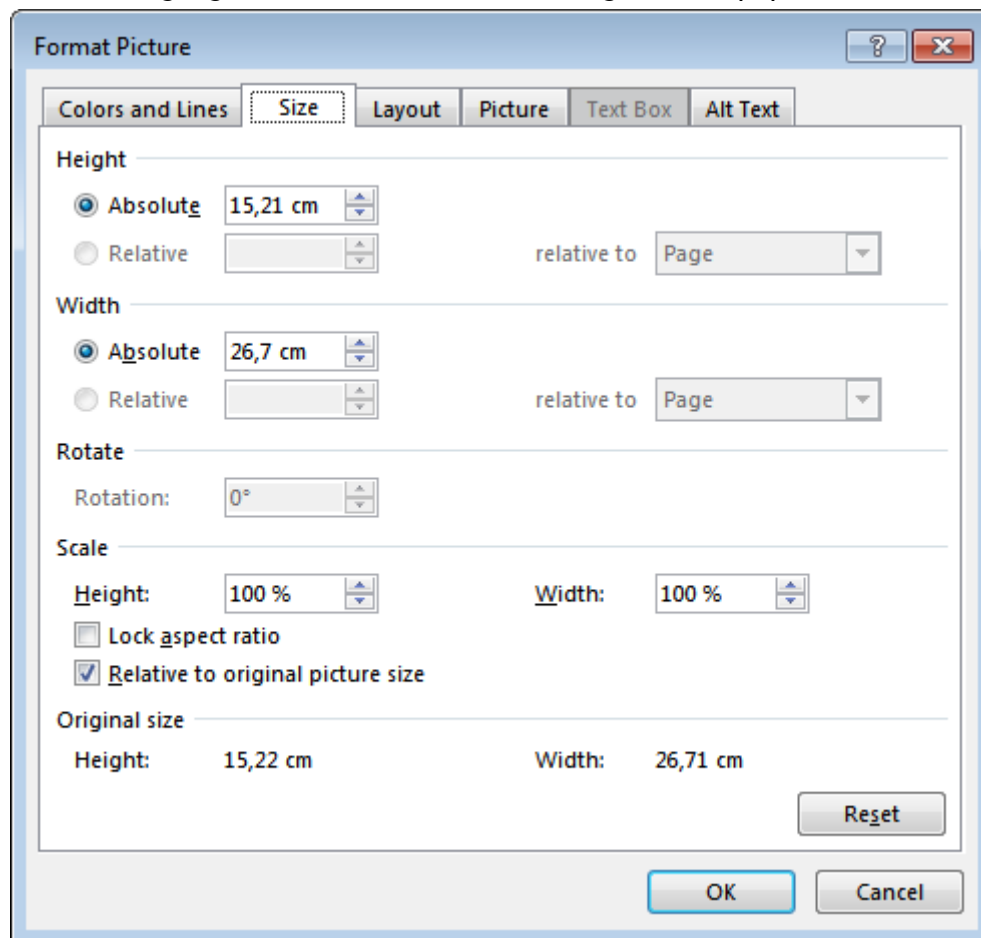
	"Word legacy images" tab checks if the Word document contains "legacy" images which cannot be checked by the tool
Pop-up window	✕ ⊡ Images ⊡ Word images **⊡ Word legacy images** ⊞ Word shapes 	Filename	Width (mm)	Height (mm)	Scale width	Scale height	Cropping	Is image linked ?	Does linked image exists ?	Is link absolute ?	Comments
004.tif	159	60	100	100	N/A	☑	☑	☐	• QC OK	 Legacy images were found, please reinsert all the figures. For a list of possible errors (highlighted in orange), please refer to the main Image Quality Check page. ⬇ Download report ⬇ Correct resolution ✓ Close
Excel file			A	B	C	D	E	F	G	H	I	J	K	L
---	---	---	---	---	---	---	---	---	---	---	---
2	Linked filename	Width scale	Height scale	Width (mm)	Height (mm)	Cropping	Comments	Width (px)	Height (px)	Is link absolute ?	Is image linked ?	Does linked image exists ?
3	004.tif	100%	100%	159	60	N/A	QC OK	3760	1412	No	Yes	Yes
4-22													 GRAPHIC_FILE_AUDIT FIG_IN_WORD_QC **FIG_IN_WORD_LEGACY_FORMAT** WORD_SHAPE_SEARCH ⊕
Notes	- Legacy-format images often come from images contained in older version of Word (i.e. using a previous edition of a standard drafted in ".doc") - If (and only if) items are listed on this tab, the corresponding figure must be re-inserted&linked within the Word document - the layout of the Excel file will be revised to match the Pop-Up window in order to provide a better readability (i.e. column "Comments" will be moved to the right, columns "Width/Height (px)" will be removed)

Examples	Legacy Square outline selection	Picture Bullet outline selection
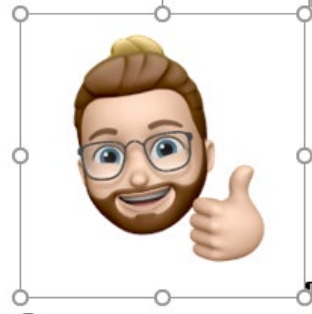
	"Word shapes" tab checks if autoshapes/shapes/textboxes are found within the Word document. Often times, shapes found in Word documents are empty textboxes which appear "hidden" from view
Pop-up window	
Excel file	
Notes:	- Equations in MathType format will be shown in this tab as "Embedded objects (MathType 6.0 Equation)". They are listed, but are excluded from the "Total" as they are not blocking.

Pop-up window content:

✕

⊞ Images   ⊞ Word images   ⊞ Word legacy images   ⊞ Word shapes

Type	Count
1. DrawingML format	0
2. VML format	0
3. Alternate format	2
4. Embedded objects (office document)	0
Embedded objects (MathType 6.0 Equation)	1
Total	2

For a list of possible errors (highlighted in orange), please refer to the main Image Quality Check page.

⬇ Download report   ⬇ Correct resolution   ✓ Close

Excel file content:

	A	B	C	D	E
2	Type	Count			
3	1. DrawingML format	0			
4	2. VML format	0			
5	3. Alternate format	2			
6	4. Embedded objects (office document)	0			
7	Embedded objects (MathType 6.0 Equation)	1			
8	Total	2			
9					
10					
11					
12					
13					
14					
15					

GRAPHIC_FILE_AUDIT   FIG_IN_WORD_QC   FIG_IN_WORD_LEGACY_FORMAT   **WORD_SHAPE_SEARCH**   ⊕

- Enable the **paragraph mark** for a better visibility:
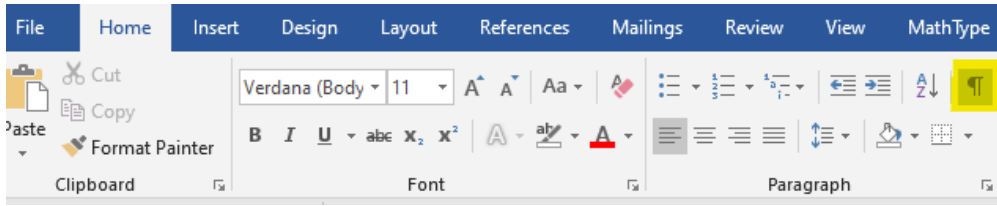
- **Find** figure/equations/**shapes**/objects, open the Navigation pane
View → Show → Nagivation Pane (or with Ctrl+F on the keyboard)
Select "Graphics" and use the arrows to browse
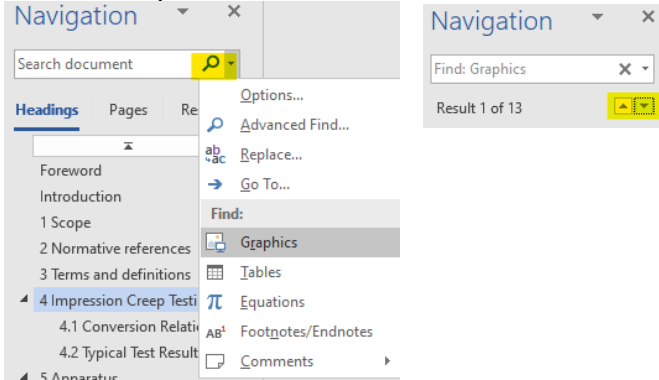
To remove a shape, right click on the blue anchor and click "cut"
- **Convert "Legacy" images** (.doc to .docx):
Open the "legacy" document (.doc)
Go to File > Convert
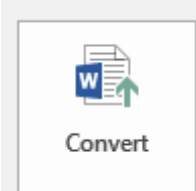
Go to File > Check for Issues > Check Compatibility > select all options in "Select versions to show"
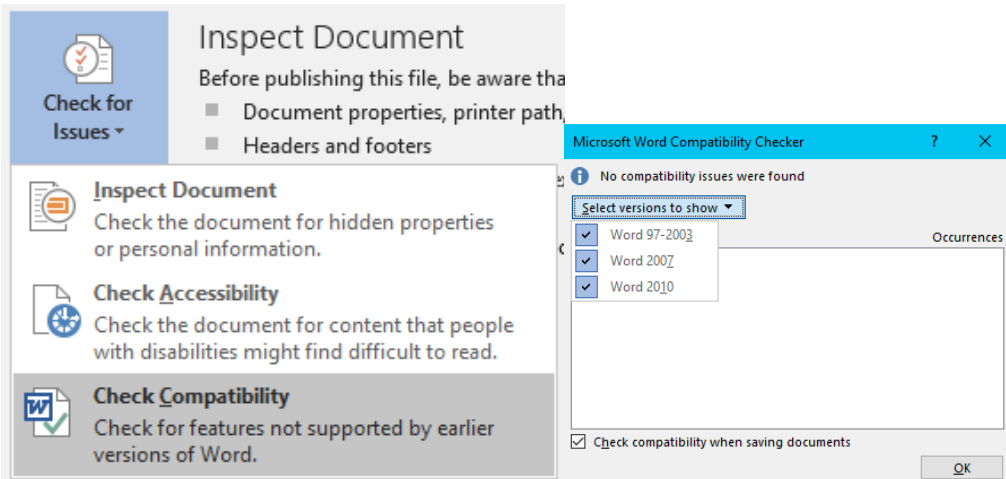
Go to File > Save as > save as a Word Document ".docx"
Close the Word document
Re-open the new .docx and check the figures and their links

3.5.4 Autoshapes/Word Shapes

Autoshapes and Word shapes are elements created using the 'Autoshape' tool in Word. These can be actual shapes (rectangles, triangles, circles) or textboxes. They are often hidden from view, and can be difficult to find, especially if they have been created accidentally during the drafting process.

Autoshapes, Word Shapes and textboxes shall not be used to edit or alter any figure in the text. **These elements are not supported by XML** and will therefore not be visible in the final XML file. They are **systematically removed** by the CCMC editor when processing the text.

NOTE   If it is not possible to find autoshapes by yourself, CENELEC Editors have tools at their disposal to find them and remove them. Simply contact production@cencenelec.eu to inform us about the Autoshapes prior to, and at the time of, submission, and your submission will not be rejected.

EXAMPLE 10   How to Find Hidden Shapes
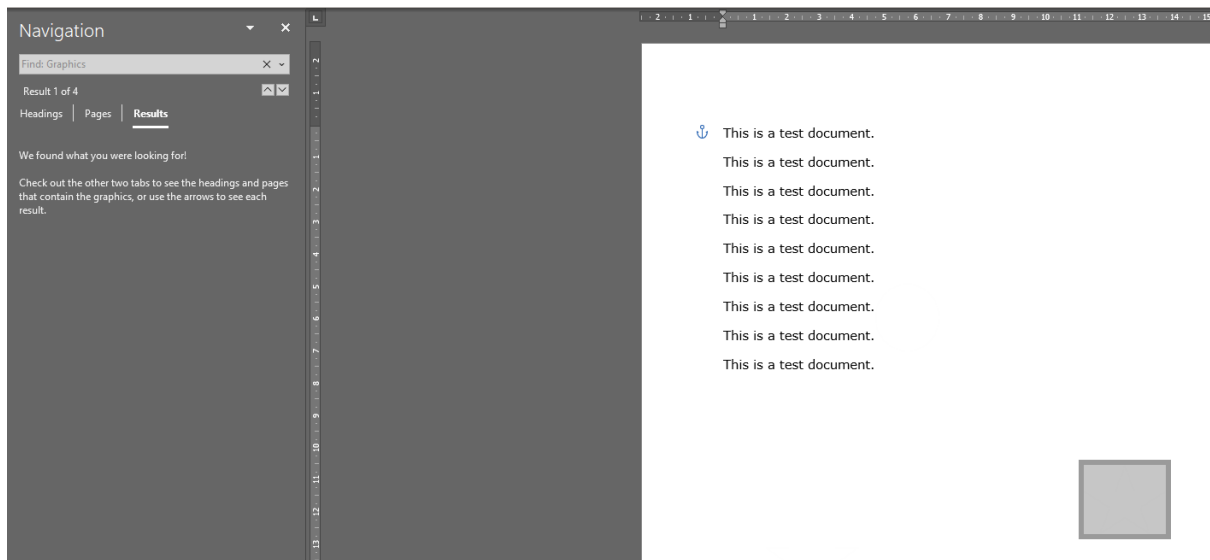
Open up the Navigation pane, either using the ribbon (View → Show → Nagivation Pane) or with Ctrl+F on the keyboard.

As shown in the figure below, there are no shapes visible in the text.

Once this is open, click the small arrow next to the 'Search document' field.
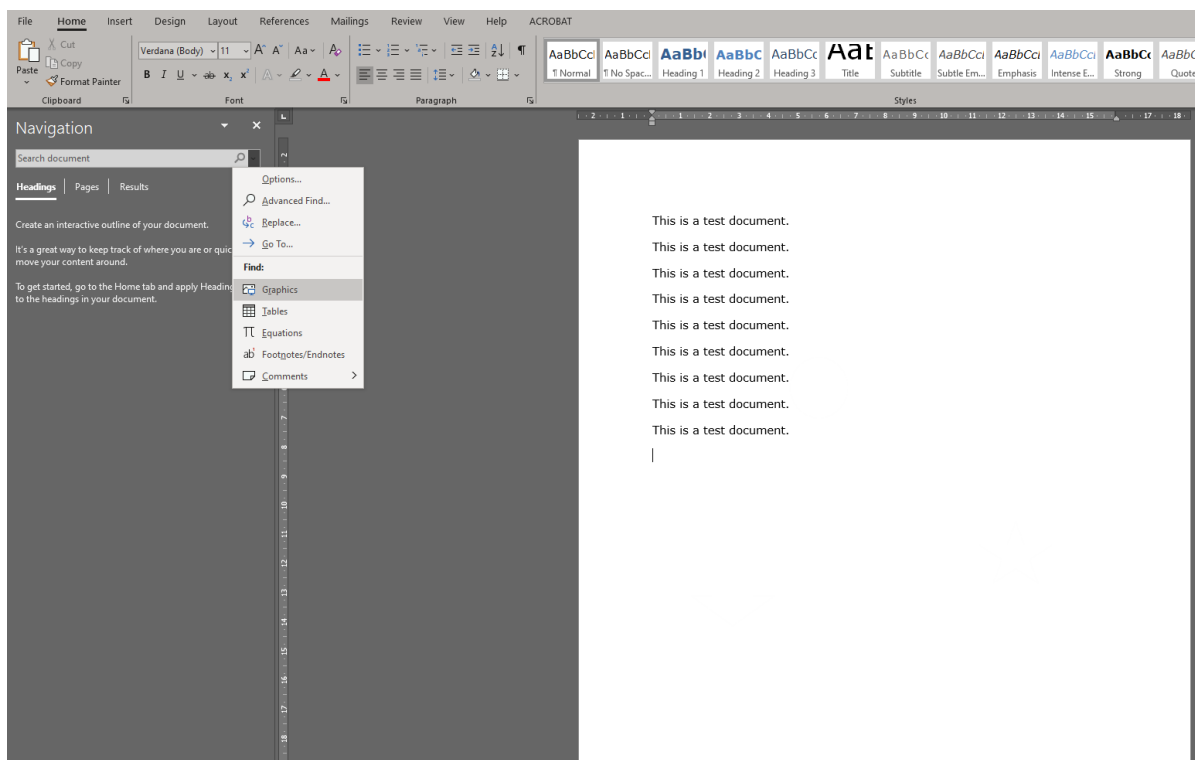
Select 'Graphics' from the menu. This will search the document from top to bottom and will highlight each shape individually.

This is a test document.
This is a test document.
This is a test document.
This is a test document.
This is a test document.
This is a test document.
This is a test document.
This is a test document.
This is a test document.

As shown on the navigation panel, there are 4 results, found for graphics, and 1 square has been flagged up. This can then be deleted. Using the up and down arrows adjacent to 'results', the remaining shapes can be found and deleted.

Where there are a number of designated figures present, the 'pages' or 'headings' option can be useful to see where the shape is, in relation to the information given by the Excel Quality Check Sheet.