



Making Accessible PDFs

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Contents

I. Overview:	Error! Bookmark not defined.
II. Background	3
III. Create a PDF Document.....	3
IV. Analyze and Repair your PDF with Adobe Acrobat	4
Step 1: Verify that the Order Panel is Logical and Matches the Tags Tree .	4
Step 2: Open the Tags pane and inspect the tags.....	4
Step 3. Add Alternate Text for Images.....	6
Step 4. Test all Navigation Links	6
Step 5: Test Table Structure with the Touch Up Reader Order Tool	7
Step 6: Set Bookmarks	7
Step 7: Set the PDF Document Properties	7
Step 8. Run the PDF Accessibility Full Check and Correct All Problems.....	8
Step 9: Test to PDF/UA Standards (Optional).....	8
Step 10. Test Your Document with a Screen Reader	9
IV. Conclusion.....	9
V. Resources:.....	10

I. Background

There are four key elements that make a PDF document accessible:

- PDF Tags: Tags provide a hidden structure to PDF content that is presented to assistive technology. Common tags include tables <Table>, lists <L>, list items , links <Link>, forms <Form>, headings <H1> ... <H5>, and paragraphs <P> among others. *If your document doesn't have tags it is not accessible.*
- Alternate text for images and all non-text content;
- Document properties (titles, language, etc.).
- Document attributes (fonts, color, etc.).

Tags are really the backbone of an accessible PDF and exist for accessibility purposes only and have no visible effect on the PDF file. HTML tags and PDF tags often use similar names (e.g., <H1> for a heading level 1, etc.). As a result, if you are comfortable with HTML, you will probably have an easier time creating and editing tagged PDF files.

System Requirements: In order to work with PDF tags most effectively, you will need to have Adobe Acrobat Professional, ideally Adobe Acrobat DC or above.

II. Create a PDF Document

PDF files are created in various authoring applications - not Adobe Acrobat Professional. The most common applications to author PDF documents include MS Word, PowerPoint and Adobe InDesign. If you are using any of these programs, you can often create relatively accessible, tagged PDF files with very little use of Adobe Acrobat Professional. However, the accessibility of the PDF depends on the accessibility of the original document. For example, if your original document does not use accessible colors your PDF document will have these same issues and it will be virtually impossible to

correct these issues in the final PDF. (Note: To test the color contrast of your document, consider using the [Colour Contrast Analyser](#).)

When creating PDFs from any authorizing application, it is essential that the document be created as a tagged PDF.

IV. Analyze and Repair your PDF with Adobe Acrobat

Once you've created a tagged PDF, you will still need to analyze the accessibility of the document and repair any accessibility issues using Adobe Acrobat Professional.

Step 1: Verify that the Order Panel is Logical and Matches the Tags Tree

Open the Order Panel and verify that the order is logical and follows the tags tree. Move items in the order panel as needed to achieve a logical order structure. Note that moving items in the Order Panel can cause issues with the tags tree so you will need to carefully review the tags tree after any changes have been made.

Step 2: Open the Tags pane and inspect the tags.

The Tags pane allows you to view, reorder, rename, modify, delete, and create tags. This pane displays all the tags within the PDF, organized in a tree structure. You can use your keyboard or mouse to navigate the tags tree and expand or collapse items. You can also reorder items if necessary.

To most effectively work with Tags in the Tags Pane, ensure that Highlight Content is selected from the Options Menu in the Tags Pane. This will give

you a focus indicator on the text in the document as you navigate through the tags.

Tag Panel Inspection Steps: Consider the following as you inspect the tags in the tags panel:

- Do the tags semantics properly associate with the content?
 - Are headings labeled as headings (<H1>, <H2>, etc.)?
 - Are tables tagged as tables with proper content in the <TH> and <TD> tags?
 - Are lists tagged as lists with proper <L>, , and <LBody> tags?
 - Are links tagged as links with <Link> and LINK-OBJR tags?
 - Are paragraphs tagged as paragraphs <P>?
 - Text that is repeated across pages should be tagged as follows:
 - For first page
 - Chapter Number, Title, Footer content, Header content
 - For other pages
 - Page number should be set to artifact. However, ensure that the visual page number is the same as the document page number.
 - Repeated Headers: Only the first occurrence should be tagged. Subsequent occurrences can be set to artifact.
- Is the reading order of the tags logical? Note: A great way to test the reading order is to arrow through the tags with the tags expanded and watch as the highlighting in the document moves from content section to content section.

Step 3. Add Alternate Text for Images

All images that convey meaning need to have alternate text applied so the purpose being communicated is conveyed to users of assistive technology. If you've already added alternate text in your source document then you can skip this step. If not, you will need to add alternate text by navigating to the appropriate <Figure> tag.

Consider the following when creating alternate text:

- The textual descriptions need to be short and concise while still being meaningful and informative.
- The alternate text should stand alone and act as an equivalent for the image if the image were removed.
- Text should not include the words "figure", "picture" or "image" unless it is significant to point out a particular type of image such as a photograph or painting.

If an image is decorative, it should be set to artifact from the tags option menu.

Step 4. Test all Navigation Links

All navigation links in your PDF should be tested to ensure that they are both mouse and keyboard accessible and that they go to the correct location.

To do this, find the links on the page and in the tags panel and test verify that they are going to the correct location.

- Mouse: Click on the link;
- Keyboard: Tab to the link and press enter;
- Tags: Open the tags tree and ensure that the link is in a link tag with the text and LINK-OBJR tag.

Step 5: Test Table Structure with the Touch Up Reader Order Tool

The fastest way to test the accessibility of a table is with the Touch Up Reading Order Tool. All tables should be regular, with both column and row headers. (Note: In some rare instances, only a table row or table column header may be appropriate depending on the content in the table. However, in most cases both are required for 2 by 2 or larger tables.) You can access the Touch Up Reading Order Tool from the Tools > Accessibility Menu.

Once the Touch Up Reading Order tool is open, if you select a Table you can inspect the table properties.

In the table above, Important Events is set as the column header and the dates are set as the row headers. Note that it is very important that the scope of column and row also be set correctly as well as how many cells the cells span. This can be done by selecting the cell and then selecting the Table Cell Properties.

Step 6: Set Bookmarks

For documents greater than 20 pages, ensure that bookmarks have been created in the Bookmarks Navigation Pane. Bookmarks should generally follow the document table of contents and provide an optional navigation tool for users.

Step 7: Set the PDF Document Properties

All PDFs need to have the document properties set. At a minimum, this should include the following:

- Title: Ensure that a meaningful title is present from the Description Tab.

- Initial View Tab: Ensure that the appropriate layout and magnification settings are set as well as that the Show: Document Title dropdown option is selected, including:
 - Navigation tab: Bookmarks Panel and Page (for documents over 20 pages); Pages Panel and Page for documents under 20 pages.
 - Page layout: Single page continuous
 - Magnification: 75%
 - Window Options is set to Show: Document Title

Document Language: Ensure that the document language is set from the Advanced tab.

Step 8. Run an Accessibility Full Check and Correct All Problems

From the Accessibility Tools Menu, select Full Check. This will check the accessibility of the document. From the report, you can see various aspects of the document that need to be corrected or investigated further. Note that Color Contrast and Logical Reading Order under the Document section of the report will always be flagged as these require a manual check (refer to previous sections of this document).

Step 9: Test to PDF/UA Standards (Optional)

Many of the core concepts in the Web Consortium Accessibility Guidelines 2.0 (WCAG 2.0) directly relate to PDF documents that are made available on-line. The PDF/UA Standard is an ISO standard for the universal accessibility of PDF documents (ISO 14289-1) that is specific to PDFs and has more specific conformance requirements. If you need to meet PDF/UA, you will need to follow the steps listed above as well as test your document with the [PDF Accessibility Checker 2.0](#) or other checkers that test to these standards.

Note: There are a number of instances where strict adherence to PDF/UA standards may render some content inaccessible to screen reader users. Some potential issues include the use of Formula Tags (JAWS supports Formula tags but NVDA does not follow the PDF/UA standards for this tag) and the correction of Bounding Box errors among others. In short, if you are modifying a document to meet PDF/UA requirements ensure that you fully test your document with a screen reader).

Step 10. Test Your Document with a Screen Reader

Once all accessibility issues are resolved, it is recommended that you test your document with a screen reader to ensure full compliance. Some issues to test include:

- Superscript and subscript footnotes such as 5² (this will be read as 52 without proper alternate text);
- Ensure highlighted text is conveyed to screen reader users as required;
- Check all tables and any alternate text added to a table;
- Check all links;
- Read the entire document with a screen reader if attempting to meet PDF/UA.

III. Conclusion

Creating accessible PDF documents is readily achievable by following the guidelines above and resources below. Even if you've followed all of the proper steps, it is still recommended that your document be tested by a screen reader user to ensure that the document is fully accessible.

IV. Resources:

[PDF Techniques for WCAG 2.0](#)

[Acrobat Pro DC Accessibility Repair Workflow](#)

[Using the Acrobat Pro DC Accessibility Checker](#)

[Creating Accessible PDF Forms with Acrobat Pro DC](#)

[Creating Accessible PDFs from Adobe InDesign](#)

[PDF/UA Standards](#)

[PDF/UA Checker: PDF Accessibility Checker 2.0](#)