



Federal Regulations - Section 508

A Mandatory Reference for ADS Chapter 501

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Federal Regulations—Section 508

Section 508 of the Rehabilitation Act requires that USAID-funded web sites are accessible to users with disabilities.

In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic information accessible to people with disabilities. **Section 508** was enacted to eliminate barriers in information technology for people with disabilities. The law applies to all federal agencies when they develop, procure, maintain, or use information and communication technology. Under Section 508, agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

On January 18, 2017, the Access Board published a final rule that jointly updates requirements for information and communication technology (ICT) covered by Section 508 of the Rehabilitation Act. The Section 508 standards apply to electronic and information technology procured by the Federal government, including computer hardware and software, websites, and multimedia such as video, phone systems, and copiers. This final rule incorporates the Web Content Accessibility Guidelines (WCAG) 2.0 by reference and applies Level A and Level AA Success Criteria and Conformance requirements to websites and non-web electronic documents.

Listed below are the Section 508 guidelines as they apply to web-based intranet and internet applications. Additionally the *Federal Requirements* contain a section on video and multimedia products (§ 1194.24). The mandates themselves are vague, so we attempted to elaborate on some of the items, please see the italicized sections below each item for additional information.

For additional information on web accessibility, please read [The Web Content Accessibility Guidelines 2.0](#). These guidelines, developed by the W3C Web Accessibility Initiative, explain how to make web content accessible to people with disabilities.

Section 1194.22 Web-based intranet and internet information and applications

- a. **A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).**

Non-text elements such as photographs, CAPTCHA images, icons and other graphics, and charts etc need to contain a text description. Also, this provision requires that when an image is used to represent page content, the image must have a text description accompanying it that explains the meaning of the image. Commonly, the "ALT" attribute is used to provide a text description of a non-text element. An example HTML source code example is . Note that decorative images do not need to have "alt" text.

For group images, an alternative text description is needed for each image.

For charts, a long description is needed to explain the whole chart. The long description can be provided as a link.

- b. Equivalent alternatives for any time-based media or multimedia shall be synchronized with the presentation.**

Time-based media files that include videos (prerecorded), audio (prerecorded), and flash that need to provide alternate text. This can be accomplished by providing a descriptive text transcript for non-live, Web-based audio and a text or audio description for non-live, Web-based video-only. Synchronized captions are required for non-live, Web-based video (YouTube videos, etc), and all live multimedia that contain audio (audio-only broadcasts, webcasts, video conferences, flash animations, etc). A mechanism to stop, pause, mute, and adjust volume should be provided for audio that automatically plays on a page for more than 3 seconds. Text-based transcripts are an acceptable alternative for audio presentations but should not be used as an alternative for multimedia presentations that contain audio and video.

- c. Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.**

This provision means that color must not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. Also, when designing a page, remember to use colors that provide good contrast. The visual presentation of text and images of text should have a contrast ratio of at least 4.5:1. Large-scale text and images of large-scale text should have a contrast ration of at least 3:1. Logotypes of text have no minimum contrast requirement. A good way to test for good contrast is to print a test page on a black and white printer. Resizing text is also essential. Except for captions and images of text, text size can be resized without assistive technology up to 200 percent without loss of content or functionality.

- d. Documents shall be organized so they are readable without requiring an associated style sheet.**

The safest and most useful form of style sheet is an "external" style sheet, in which the style rules are set up in a separate file as opposed to using internal style codes. Some users may set up their own user-defined style sheets to be able to view pages and to compensate for their disabilities. Style sheets are typically used for color, indentation, and other presentation effects. When a page that utilizes a style sheet is turned off, it should still be readable and understandable. If information is missing or information is confusing, then the

style sheet should be updated. One way to identify if style sheets are used is to view the pages using a browser with the style sheet turned off or inactive and determine if the content is adequately readable. Information on how to turn a style sheet on and off is typically available on an internet browser's help page.

- e. **Redundant text links shall be provided for each active regions of a server-side map.**

You should be able to accomplish most of your image maps on the client-side; however, if a server-side image map is used you must provide separate text links outside of the server-side image map that allows the same access to the image map hotspots.

- f. **Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.**

This provision suggests that you should not use a server-side image map if a client side image map will suffice. Also, remember to use the "alt" attribute to describe all non-text elements. Note that a client-side map is keyboard accessible – it allows assistive technology, such as screen readers and alternative input devices to navigate links embedded in the map.

- g. **Row and column headers shall be identified for data tables.**

Data tables must have the column and row headers properly identified, using the <table> tag for the table, <th> tag for a table header cell, <tr> for a row cell, and <td> for a data cell.

- h. **Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.**

Table cells should be associated with the appropriate headers, i.e., with the use of "scope" or "id" tag. Sematic markup is used to designate headings, lists, and emphasized or special text. Tables are used for tabular data. Where necessary, data cells are associated with their headers. Table captions and summaries are used where appropriate.

See <https://www.w3.org/WAI/tutorials/tables/two-headers/> for more information.

- i. **Frames shall be titled with text that facilitates frame identification and navigation.**

A web page should have a descriptive and informative page title. Links on a webpage or in a document should include meaningful text that identifies the content/purpose. (For example, a link that says "Read more" or "More details" does not identify the content or purpose and should therefore not be used.)

- j. Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz. A *three flashes or below* threshold should apply to all the web pages. No page content should flash more than three times per second unless the flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red.**

Some graphics or video presentations can flicker at very high rates (an example may be a banner ad that is trying to get your attention) and can induce optical seizures in some individuals with photosensitive epilepsy.

- k. A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance *cannot* be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.**

If, for some reason, you cannot make your site content accessible, you must provide a text-only version. The text-only version should be the functional equivalent of the "main" version and should be updated with the "main" version. This means you must provide text equivalents for any component that is not accessible in the "main" site. All of the content should be in a meaningful sequence, and the reading and navigation order should be logical and intuitive. The page should be readable when text size is doubled. The language on the page must be identified using the HTML "lang" attribute. The language of page content that is in a different language should be identified.

- l. When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.**

When scripts, such as javascript, are used on a page it must be able to be detected by a browser with assistive technology. Providing keyboard accessibility is a good measure of this. Also, information within the scripts should be text-based, if they are not, then a text alternative should be supplied.

- m. When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).**

The Adobe Acrobat reader is an example of a typical plug-in. If you provide PDF files on your site, then you must provide a link so that the Acrobat Reader can be downloaded.

Note: USAID has an existing policy against the use of applets which partially subsume this requirement. Content providers for the USAID site should provide links to Adobe Reader at <http://www.adobe.com/readstep.html> on all pages that have links to PDF files. According to the comments about this section of the regulations, "This provision places a responsibility on the web page author to know that a compliant application exists, before requiring a plug-in." In addition, content providers should provide descriptive text and file size of any downloadable documents that indicates the format of the document and approximate download time. This will allow the user to ensure that it is a format type they will be able to open once downloaded and that the download will not tie-up their machine for an unacceptable period of time.

- n. When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues**

Online forms must provide all necessary instructions and cues. If the form field requires user input, it must be labeled as required. All online forms must be keyboard accessible with no exception.

Required form elements, or form fields that require a specific format, value, or length, should use proper HTML code to label the form elements and form fields. For example: if the telephone number including area code is a form field, the labels should be: `<fieldset><legend>Telephone:</legend><input type="text" title="area code" size="3" maxlength="3"> .-<input type="text" title="telephone next 3 digits" size="3" maxlength="3"> <input type="text" title="telephone last 4 digits" size="4" maxlength="4"> </fieldset>`.

If input error identification is included in a form, such as requiring a user response in a specific format, value, or length, it must provide the information in a way that is readily available to assistive technology (e.g., within the element's label or title attribute). If the input error is detected, a suggestion for fixing the error should be provided. When a form validation error is presented, it must be available in plain text. When a web form causes the user to make a legal commitment or a financial transaction, and the user can change or delete the response, any changes or deletions must be verified, confirmed, or the changes reversed before submission.

Note: In conjunction with this requirement, USAID will start to require that when a web page contains dropdown boxes, radio buttons, checkboxes or similar functionality coded in HTML, the author of the page provide the following text alerting the user of those features. It has been found that various screen readers and browsers interpret these features differently. In order to alert the user that these features are on the page, the following text should be provided:

"This page contains [dropdown boxes, radio buttons, checkboxes] which may be ignored by some forms of web browsing technology. In these cases, this information can be accessed by using the keyboard instead of the mouse (i.e.: Tab key, Enter key, Arrow keys, Spacebar, etc.)."

USAID Developers should not use select options that will automatically send a user to a page upon selection. Provide the user with a "submit" button that will allow them to confirm a selection once made.

- o. A method shall be provided that permits users to skip repetitive navigation links.**

The USAID site currently provides a method to skip the top navigation bar using white text above the links. Content providers should consider using a second option to skip redundant or repetitive left-hand navigation that will allow users to skip over the links in the left-hand navigation to the content of the page on the right. See "[Skipping Repetitive Navigation](#)" for more information.

- p. When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.**

If a page or application has a time limit, the user should be given the option to turn off, adjust, or extend that time limit. Note that this is not a requirement for real-time events where the time limit is absolutely required or the time limit is longer than 20 hours.

Section 1194.24 Video and Multimedia Products

- c.** All training and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content shall be open or closed captioned.
- d.** All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.

- e. Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

This will affect any multimedia that is posted to the USAID web site from this point forward. The intent of the regulation is to provide simultaneous access to whatever alternate mode the user requires. For example, when a deaf user is watching a video, that user should have access to simultaneous captions rather than a script that exists on another page.

Helpful Hints and other information

1. Currently the tag "longdesc" is not fully browser supported, use the "alt" tag instead.
2. Text-only and accessible are not synonymous terms. Text-only sites are not always helpful to those with
3. At this time, many elements of client-side scripting, such as JavaScript, cannot be made directly accessible to assistive technologies and keyboards. An example is the use of the "onMouseOver" command. If the scripted event reveals important information, then some type of keyboard alternative is required.
4. At this time, it is recommended that HTML versions of PDF files be included as an alternative. Acrobat reader 5.0 allows screen readers to access PDF documents; however, Not all users have this version installed. Also, some PDF documents may not be text-based.
5. PowerPoint files are not currently directly accessible unless the user has a full version of the PowerPoint program. It is recommended that an accessible HTML version be provided as well.

Section 508 Links

Access-Board.Gov (<http://www.access-board.gov/sec508/guide/1194.22.htm>)

Section 508 Guidelines (<http://www.section508.gov/>)

World Wide Web Consortium (W3C) (<https://www.w3.org/WAI/WCAG20/quickref>)

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