

# Section 508 Standards

## DECODED

In 1998, Congress amended the Rehabilitation Act of 1973 to require Federal agencies to make their electronic and information technology accessible to people with disabilities. The law applies to all federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508, agencies must give people with disabilities access to information that is comparable to access available to non-disabled users.

Section 508 outlines the technical standards for accessibility that apply to websites. While many of these standards relate to coding and the work of web designers or developers, several standards pertain directly to how content is added to a site.

A complete explanation of Section 508 is available at [www.section508.gov](http://www.section508.gov). This resource is meant to describe them in less technical terms to help content curators develop a basic understanding of these rules and how they relate to their everyday work.

### Subpart B – Technical Standards

#### § 1194.21 Software applications and operating systems.

*Note: Although this section pertains primarily to software, there are two standards that relate to websites as well.*

- (a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.**

Web users with fine motor skill impairments may have a difficult time using a computer mouse to navigate a website or software. To accommodate this, web pages should be built using proper HTML code structure so that they can be navigated using a keyboard key (e.g., tab key) instead of a mouse.

- (c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.**

As users navigate a website—whether it be with a computer mouse or a keyboard—interactive elements, such as hyperlinks, should be prominently highlighted to show users where their cursor is on the page (in web terms, this is called the “focus”).

## § 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).**

For all images and other non-text elements, include text that lets the assistive technology know what the element is. The description is added as an “alt” attribute. Most website editing programs provide a place to type in an alt attribute so the web editor doesn’t have to go into the HTML code. An example of an alt attribute is “student playing the violin.”

**(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.**

Text transcripts of audio recordings should be provided verbatim, including identifying the speaker. For video-only recordings, an audio track that contains a description of the action in the video should be provided. Videos with imagery and audio should have accurate, synchronized captions.

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

Color should not be the only way information is highlighted, and it should not be the only way to convey meaning (this includes text color, background color and images). For example, don’t say “required fields are in red” or “increases in revenue are shown in blue.”

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

A web page should not require a particular Cascading Style Sheet (CSS) for navigation or viewing. In other words, it should be possible for web visitors to turn off the style sheets. If they choose to do so, visitors should be able to tell the difference between a main heading as compared to a smaller subheading or paragraph text. This is done by using the proper HTML tags when designing or authoring your pages.

**(e) Redundant text links shall be provided for each active region of a server-side image map.**

Simply put, image maps are images with clickable areas. Think of a web page that has an embedded image of the United States with each state being a separate, clickable link to an information page.

There are two types of image maps—server-side and client-side. Server-side image maps cannot be read by screen readers. If a server-side image map is absolutely necessary to use, an alternate means to display the information in the map must be provided so that screen readers can access the information. If the example of

the United States map was created as a server-side image map, a simple listing of all of the states with the links to the separate information pages should be provided next to the image map. See below for more information on client-side image maps.

**(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.**

Client-side image maps are part of the HTML code (as opposed to being on the server) for that page and are rendered in the user’s (client) browser when the page loads. Client-side image maps are considered better alternatives to server-side image maps because the links are accessible to screen readers. Client-side image maps can be made accessible in a similar fashion to regular images or photos—by providing an “alt” attribute. Client-side image maps should always be used unless it is impossible to create the desired clickable regions using only HTML code.

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

Accessible data tables include HTML code that indicates whether a cell in the table is a header cell for a column or a row, or a cell that contains data for a column or row. Assistive technologies use this information to make the table readable to users. To make tables accessible, row and column header cells must be marked up with a <th> tag in the code and, depending on the complexity of the table, may require other HTML code as well. See standard H below.

**(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.**

For complex tables that have multiple row or column headers, clear associations must be made using scope, id, and header attributes. Header cells must be marked up with <th>, and data cells with <td>. Use the “scope” attribute to define multiple headers within the <th> tags and within the first <td> element of each row.

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

There are different types of frames that can be used to control content and/or layout on a web page. Years ago, traditional frames were used to segment pages into different parts, but that method of page development is not widely used anymore.

Today, frames are used to embed things like videos, calendars or maps in a web page from external sources. The embedded content must be placed in a container which is called an inline frame, or “iframe.” A brief description of that content must be included between the opening and closing iframe tags. In addition, a title attribute should be provided within the opening iframe tag so that assistive technologies can help the user determine the nature of that iframe.

**(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.**

Some people are susceptible to optically-induced seizures caused by strobing, flickering, or flashing effects. For this reason, web and content developers should be extra careful to avoid using any graphics, animations, movies, or other objects which have strobing, flickering, or flashing effects. If a video uses an effect that is strobe-like, this should raise a red flag. In general avoid objects that flash more than 3 times per second.

**(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 accessibility compliance cannot be accomplished, create a text-only page with the information. For example, if the curriculum guide PDF document cannot be made accessible, copy the text from the PDF and paste and format it onto a web page as an alternative to the PDF. If the information in the PDF is updated, the text on the web page should be updated as well.

**(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.**

If there's anything on a web page that is interactive or dynamic or has some sort of reaction to a keyboard or mouse-over movement, then there's most likely a script involved. In these cases the script must be coded so that any information provided by the script is readable by assistive technology.

**(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).**

If content on a web page requires additional software to view it, such as Adobe Flash for animations or Adobe Acrobat for PDF documents, a link must be provided on that page to download and install that software. One approach is to include those links in the page footer so they appear on every page.

**(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.**

Web users should be able to navigate forms with a keyboard by using the "Tab" key. Each form field should be properly labeled with the name of the field (e.g., First Name), and the name for each form field should be readable at all times—even when a user clicks inside the form field. If a field has certain submission requirements, those requirements should be marked in a prominent way. For example, a date field that requires a particular format should include instructions such as "mm/dd/yyyy." In addition, required form fields should be marked as such, and if the form is submitted incorrectly, feedback should be provided to the user so errors can be corrected.

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

To allow people with screen readers to avoid repetitive navigation links (those that are repeated on every page), a link should be provided at the top of the each page that, when clicked, moves the cursor to the main content on that page. Many websites will have a "skip to main" or "skip to content" link at the top of the page.

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

A good example of a required timed response is when users are about to get automatically logged out of their bank website due to inactivity. To satisfy this requirement, the page should alert the visitor that they are about to be logged out and give them enough time to indicate they want more time to complete their transaction.

The following standard is part of the Web Content Accessibility Guidelines (WCAG) 2.0 Level AA—not Section 508—but it is also required by the U.S. Dept. of Education's Office for Civil Rights.

**1.4.3 Contrast (minimum): The visual presentation of text and images of text has a contrast ratio of at least 4.5:1.**

When editing or authoring web pages, be sure to use text colors that provide the greatest contrast between text and background colors (e.g., black text on a white background), especially with smaller fonts.

## References

**Section 508 Accessibility Program:**

<https://www.section508.gov/summary-section508-standards>

**United States Access Board:**

<https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards>

**Breakthrough Design Group:**

<http://breakthroughdesign.com/section-508-compliance-in-plain-english/>

**WebAim:**

<http://webaim.org/standards/508/checklist>

**W3C Web Accessibility Tutorials:**

<https://www.w3.org/WAI/tutorials/>

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