



Transportation
Security
Administration

TSA Section 508 Compliance Guide

August 2008

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Purpose

The purpose of this guide is to help TSA employees understand and comply with Section 508, an amendment to the Rehabilitation Act of 1973. The guide aims to make the compliance process as efficient as possible.

Overview

Section 508 requires federal agencies – such as TSA – to ensure that people with disabilities have the same access to EIT as those without disabilities. The law applies when TSA develops, procures, maintains, or uses EIT for either its employees or members of the public.

This guide is organized around common tasks that involve Section 508:

- 1.) documenting Section 508 compliance in procurement requests
- 2.) designing internal and public websites
- 3.) building software
- 4.) creating documents

To jump to any section of the guide, click on the section in the Contents above.

Exceptions

There are some situations where EIT is partially or completely exempt from complying with Section 508. Some exceptions are determined by DHS's Office of Accessible Systems and Technology (OAST) while others are determined by TSA Section 508 Coordinators. Their contact information is below:

Office of Accessible Systems and Technology	TSA Section 508 Coordinators
E-Mail: accessibility@dhs.gov Phone: 202-447-0440 TTY: 202-447-5857	Neil Bonner E-Mail: neil.bonner@dhs.gov Phone: 571-227-2009 Steven Goosey (back-up) E-Mail: steven.goosey@dhs.gov Phone: 571-227-2859

The table below summarizes who approves which exceptions:

Exception	Approval
National Security Systems	OAST
Undue Burden	OAST
Back Office	Section 508 Coordinators
Fundamental Alteration	Section 508 Coordinators
Commercial Non-Availability	Section 508 Coordinators

National Security Systems (§1194.3 – a)

Section 508 does not apply to EIT used for national security.

The scope of “national security systems” is defined in MD# 4010.2:

Any telecommunications or information system operated by the United States Government, the functions, operation or use of which involves intelligence activities; involves cryptologic activities related to National Security; involves command and control of military forces; involves equipment that is an integral part of weapon or weapons system; is critical to the direct fulfillment of military or intelligence missions. This does not include a system that is to be used for routine administrative and business applications, such as payroll, finance, logistics, and personnel management applications.

This exception requires approval from OAST. Upon approval, OAST provides contract language and documentation for the exception. This document must be placed in the PR folder and the language is inserted into the SOO, or SOW.

Undue Burden (§ 1194.2 – a)

“Undue burden” means that compliance imposes a “significant difficulty or expense” – on the entire budget of DHS. This exception is rare. This exception also requires approval from OAST.

Back-Office (§1194.3 – f)

EIT is exempt from compliance if the products are “located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment.”

This exception is often only partial to hardware. Remote interfaces still need to comply. Approval is granted by the TSA Section 508 Coordinators.

Fundamental Alteration (§1194.3 – e)

EIT products do not have to comply with Section 508 if doing so would alter their original purpose.

Commercial Non-Availability (§ 1194.2 – b)

When EIT is procured, market research must first be completed to find products that are compliant with Section 508. Then, an analysis is documented to determine which product is the most compliant. The most compliant product must be chosen.

However, when no product even partially complies, a “commercial non-availability” exception can be granted. The format of research is up to the originator. However, BuyAccessible, a Web-based wizard, can assist in documenting research:

<https://app.buyaccessible.gov/baw/>

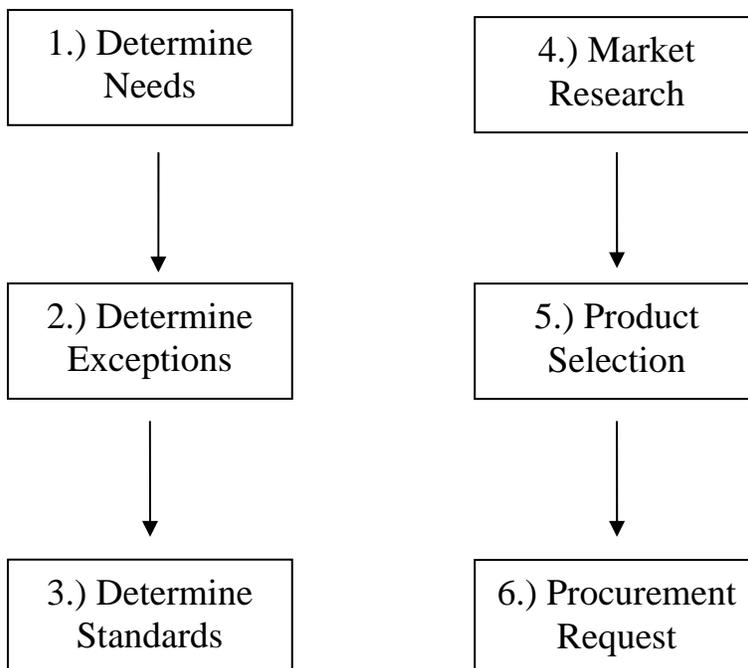
Approval of this exception is granted by Section 508 coordinators.

Incidental to Contract (§1194.3 – b)

Section 508 does not apply to products used by a contractor to fulfill a contract so long as the products are not used or accessed by federal employees or members of the public.

Procuring EIT

Section 508 plays a role in almost all stages of the acquisition process.



Determine Needs

Because Section 508 applies to all types of EIT, you should remain aware of the standards that will likely apply to your acquisition based on your EIT needs. Specifically, Section 508 applies to six different types of EIT:

- 1.) Software applications and operating systems
- 2.) Web-based intranet and internet information and applications
- 3.) Telecommunication products
- 4.) Video and multimedia products
- 5.) Self-contained, closed products

6.) Desktop and portable computers

Support services – alone, or accompanying an acquisition of products – also have accessibility requirements as noted in Information, Documentation, and Support (§ 1194.41):

- 1.) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.
- 2.) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.
- 3.) Support services for products shall accommodate the communication needs of end-users with disabilities.

Because support services and documentation are often provided over the Web, standards for Web-based intranet and internet information and applications often apply.

In short, be aware that the applicable standards for certain needs are often mixed, depending on the specifics of the acquisition.

Determine Exceptions

Sometimes EIT doesn't need to comply with Section 508. After determining your needs, determine if any part of your acquisition qualifies for an exception. Read the "Exceptions" section of the guide for descriptions of the exceptions.

Relevant exceptions at this stage of the acquisition process are listed below:

Exception	Who Approves	Turnaround Time
National Security Systems	OAST	3 – 5 business days
Undue Burden	OAST	3 – 5 business days
Fundamental Alteration	TSA Section 508 Coordinators	5 business days
Back Office	TSA Section 508 Coordinators	5 business days

If an exception applies to an **entire** acquisition, then no further compliance efforts are necessary.

DART: DHS Accessibility Requirements Tool

The DART is a Web-based form maintained by OAST that generates contract language stating what exceptions an acquisition applies to and which standards the acquisition will satisfy. The link below opens the DART:

<https://dhsonline.dhs.gov/portal/jhtml/dc/sf.jhtml?doid=76609>

PRs often have multiple applicable standards, and exceptions often cover only part of the acquisition. The DART accounts for this complexity and provides consistent, clear, and complete language. Originators may add to the language generated in order to suit their specific needs, but they should not subtract from the original language.

Determine Standards

If there are no exceptions completely exempting the acquisition from compliance, the next step is to identify and select the standards. This part of the DART, like Section 508, list six types of EIT:

- 1.) Software Applications and Operating Systems
- 2.) Web based Intranet and Internet Information and Applications

- 3.) Telecommunications products
- 4.) Video and multimedia products
- 5.) Self contained, closed products
- 6.) Desktop and portable computers

Select the applicable standards, any exceptions, and the “Get Text” button to generate the language. Insert the text into the SOW, SOO, or PWS. If there are no such documents, the language can exist in its own document. The document containing the language should be in the PR folder so that the Section 508 coordinators can check it.

Market Research

To ensure that TSA uses accessible EIT, market research is required to determine which EIT meets your needs while being the most accessible EIT available. Although the format of this research is left to the originator, BuyAccessible can assist in the research process. The application is located here:

<https://app.buyaccessible.gov/baw/>

Undetermined Deliverables

When the necessity of deliverables is uncertain, the relevant standards should still be selected using the DART. In addition, you may modify the language output from the DART by adding a clause documenting the undetermined status. Such a statement might look like this:

Any deliverables produced based upon results of initial research must identify applicable Section 508 EIT accessibility standards at initial requirements time, and incorporate such standards into the software development life cycle. Acceptance testing for such deliverables shall include Section 508 compliance evaluation. Any exceptions identified for such deliverables must be authorized by the Section 508 coordinator, or DHS office of Accessible Systems and Technology as appropriate.

Product Selection

Originators need to select the product that best complies with Section 508. This selection is based on products identified from market research. Market research – in any form – should accompany procurement requests.

Procurement Requests

When a PR is complete, it gets submitted to TSAITBUY. They notify the Section 508 coordinators of the PR and its location on the network drive who then check it for specific requirements. Procurement request folders should include:

- 1.) Market research of the products available to meet business needs and an analysis showing which product was the most compliant. The format of this research and analysis is up to the originator.
- 2.) Contract language – from the DART – specifying the applicable standards and exceptions to the acquisition
- 3.) When applicable, memo(s) from OAST for either the National Security Systems exception or the Undue Burden exception.

It is important to use the most current templates and forms for PRs. They can be accessed below:

<https://staffcollaborator.tsa.gov/sites/optcio/it/TSAITBUY/default.aspx>

Section 508 Coordinators approve, disapprove, or conditionally approve PRs within five working days. Communications regarding procurement requests with Section 508 coordinators go through TSAITBUY:

TSAITBUY@tsa.dhs.gov.

Web Pages and Applications – § 1194.22

The prevalence of Web sites to obtain information makes their accessibility a priority. § 1194.22 identifies sixteen standards (a – p) that all web pages should meet in order to be accessible.

Text-Equivalents (a)

All non-textual elements of a webpage – usually images – need to have text equivalents. Effective text-equivalents assist users who cannot see graphical content. Non-text elements also include audio content. Text equivalents serve as alternative routes to the information conveyed by the content.

Graphics

Graphics such as images, logos, and spacers should use the ALT attribute used within an tag to convey the meaning of the graphic. Code typically looks like this:

```

```

Alternative text is read by screen readers and displayed when images are disabled. It is not necessary to write that a graphic is a graphic (i.e. “This is an image that says...”). Instead, provide only the functional information provided by the image (i.e. “President Bush”).

Because spacers do not convey information, they should have empty quotes for the alt attribute:

```
<img src= "spacer.gif" alt="" />
```

Audio

Purely audio content – lacking any visual component – needs to have a transcript for users who are deaf and hard-of-hearing.

Multimedia (b)

Multimedia is a combination of more than one type of media. Most movies are a common example of multimedia, which combine visual and audio content.

Multimedia must have accompanying “equivalent alternatives” that are “synchronized” with the material.

This means that the multimedia needs to have **captions** for users who are deaf and hard-of-hearing and **audio description** for users who are blind or partially sighted. Captions display speech and background sounds as they occur and audio description describes visual content that is not conveyed auditorily.

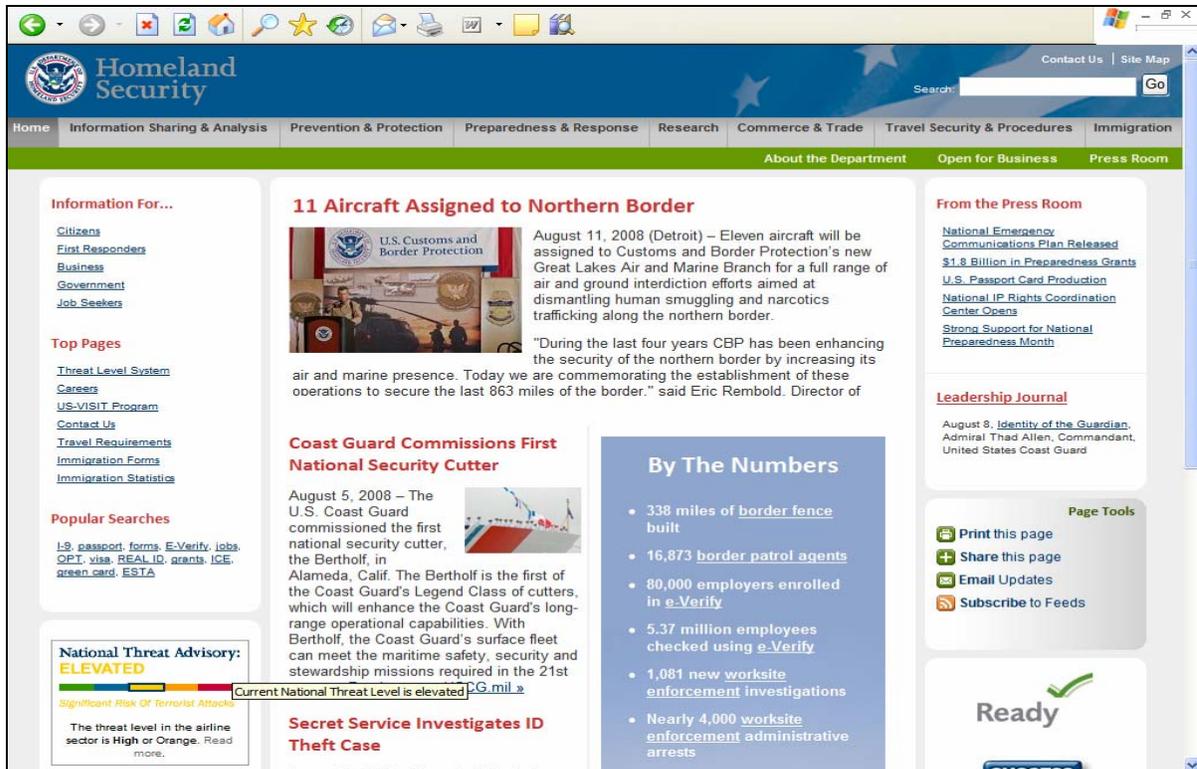
Color (c)

All web content needs to be understandable without the use of color. Any information conveyed through color such as graphs (i.e. blue representing one aspect and green representing another) should be conveyed in an alternative way for users who cannot comprehend color-based information.

Viewing the content in grayscale can help to identify color-based information that needs complimentary text. The text can be added through the ALT attribute or by describing the information in the main content.

The National Threat Advisory is a good example of content that uses color. Accessibility is achieved in two ways:

- 1.) The alternative text for the graphic says that the current national threat level is elevated.
- 2.) Below the graphic, content text states the threat level specifically for the airline sector: High or orange.



Style Sheets (d)

Web pages should be “readable” without their associated style sheets because screen readers read web pages as if there were no style sheets. In addition, some people disable style sheets in their browsers to maximize slow connections.

The easiest way to ensure pages are accessible is to view the content without the associated style sheet link:

```
<link rel="stylesheet" type="text/css"
href="styles.css" />
```

Take out the code and reload the content by itself, checking to see that all the information conveyed in the content **with** the style sheet is the same information conveyed **without** the style sheet.

Image Maps (e / f)

Client-side image maps should be used instead of server-side image maps because client-side image maps are accessible via keyboard.

When server-side image maps must be used – when the active regions cannot be defined with an available geometric shape – redundant text links must be provided.

Tables (g / h)

Standards pertaining to accessible tables only apply to data tables – not layout tables. Data tables need to be tagged properly or screen readers cannot associate the relationship among the cells. Two tasks need to be completed to create an accessible table:

1.) Identify the rows, columns, and cells.

Rows are identified with the <TR> tag.

Columns are identified with the <TH> tag.

Data cells are identified with the <TD> tag.

2.) Associate the data cells to their headers.

After identifying row and column headers, the data cells need to be associated to the appropriate headers. Associating the data cells can be done with the SCOPE and ID / HEADERS attributes.

Which one you use depends on the type of table being created: simple or complex.

Simple tables only have one logical level of row and/or column headers. The scope attribute should be used for simple tables. The appropriate attribute value for rows is “row” and “col” for columns.

Complex tables have two or more logical levels of row and/or column headers. The id and headers attributes should be used for complex tables. The values for id and headers – whatever you want them to be – should match.

The table below summarizes simple and complex tables and how to make them compliant:

Table	Definition	Compliance
Simple	One logical level of headers – row, column, or both	The scope attribute within the <th> tag. Rows = “row” Columns = “col”
Complex	Two or more logical levels of headers – row, column, or both	The id attributes match the headers attributes.

The table below showing the ages of two agencies and their Web addresses is an example of an accessible simple table using the SCOPE attribute.

```
<table border = "1">

<tr>
  <th scope = "col">Agency</th>
  <th scope = "col">Age (yr)</th>
  <th scope = "col">URL</th>
</tr>

<tr>
  <th scope = "row">DHS</th>
  <td>6</td>
  <td>www.dhs.gov</td>
</tr>

<tr>
  <th scope = "row">NIH</th>
  <td>121</td>
```

```
<td>www.nih.gov</td>
```

```
</table>
```

The data cells (6, 121, along with their respective Web addresses), falling under and besides the headers, become associated to the screen reader.

The next table demonstrates an accessible complex table by matching the ID attributes with the HEADERS values. (?)

```
<table border = "1">
```

```
<tr>
```

```
<th id = "org">Organizations</th>
```

```
</tr>
```

```
<tr>
```

```
<th id = "assoc" headers = "org">Association</th>
```

```
<th id = "assoc-age" headers = "org">Age (yr)</th>
```

```
<th id = "assoc-url" headers = "org">URL</th>
```

```
</tr>
```

```
<tr>
```

```
<th id = "heart" headers="org assoc">American Heart Association</th>
```

```
<td headers = "org assoc-age heart">84</td>
```

```
<td headers = "org assoc-url heart">
```

```
www.americanheart.org</td>
```

```
</tr>
```

```
<tr>
```

```
<th id = "apa" headers = "org">American Psychological Association</th>
```

```
<td headers = "org assoc-age apa">116</td>
```

```
<td headers = "org assoc-url apa">www.apa.org</td>
```

```

</tr>

<tr>

<th id = "gov-agency" headers = "org">Agency</th>
<th id = "age" headers = "org gov-agency">Age
(yr)</th>

<th id = "url" headers = "org gov-agency">URL</th>
</tr>

<tr>

<th id = "dhs" headers = "org">Department of
Homeland Security</th>
<td headers = "org gov-agency age dhs">6</td>
<td headers = "org gov-agency url
dhs">www.dhs.gov</td>

</tr>

<tr>

<th id = "nih">National Institutes of Health</th>
<td headers = "org gov-agency age nih">121</td>
<td headers = "org gov-agency url
nih">www.nih.gov</td>

</tr>

</table>

```

Frames (i)

Title frames with the TITLE attribute inside a <FRAME> or <IFRAME> element.

Good titles are specific and descriptive, yet simple and short. As in writing ALT text for images, you do not need to note the element's existence (i.e.

“Frame – Main Content”). Just write the necessary functional information to understand and use the frame: “Main Content,” “Navigation Links,” and “Advertisements.”

Flashing and Blinking (j)

Although Section 508 officially permits certain rates of flickering, the Office of Accessible System and Technology – who evaluates TSA websites on a quarterly basis for Section 508 compliance – fails any page that has a flashing or blinking element.

Text-Only Alternative Pages (k)

Text-only page(s) can only be used when the primary one(s) cannot be made accessible. The alternative page should be updated whenever the main page is updated.

Scripts (l)

The use of scripting languages – such as JavaScript – should have content and/or mark up text telling the user or assistive technology the function of the script. This can be achieved in several ways, depending on the purpose of the script.

- 1.) The <NOSCRIPT> tag should be included in the code to alert users who need scripts enabled in their browser to view the content.
- 2.) Scripts used for appearances only (i.e. color changes) do not need text in the content or the markup.
- 3.) Functional text is often put into the content itself to describe a script. For example, text is often written within the <A> tag to indicate what function the script will perform upon clicking on the link.
- 4.) Alternative text via the ALT attribute is used for scripts using images.
- 5.) Functions dependent on the mouse need to be accessible via keyboard.

6.) Event handlers: consult the Access Board's page listing specific event handlers and how to make them accessible:

[http://www.access-board.gov/sec508/guide/1194.22.htm#\(1\)](http://www.access-board.gov/sec508/guide/1194.22.htm#(1))

Applets and Plug-Ins (m)

Web pages often link to files that must be downloaded. Common examples include PDF and Microsoft Office documents. Accessing these files require external applications (i.e. Adobe Reader).

A link must be included to these applications and they must comply with the Software standards of Section 508 (§ 1194.21).

The image below demonstrates how sites typically include the link:

Support for the Online Inquiry Form

Problems accessing the web site?

E-mail the Web Application Administrator: trip@dhs.gov

[Back To Top](#)

[**» Go to STEP 3: After Your Inquiry**](#)

Download Plug-in

Some of the links on this page require a plug-in to view them. Links to the plug-ins are available below.

 [Adobe Acrobat \(PDF\)](#)

This page was last modified on August 1, 2007

Content internal to TSA does not need to comply with this requirement.

Forms (n)

Accessible forms are created by matching the FOR attribute value within the <LABEL> tag to the ID attribute within the <INPUT> tag.

This links a label to an input element so a screen reader will associate the label (i.e. “Name”) with the correct field. Without this link, screen readers can read an input field without the label that would indicate the purpose of the field. Without vision, it becomes unclear as to what should go into a particular field.

Below is a simple form linking the labels (First Name, Last Name) with the fields (created by the <INPUT> tag). This should be done for all input elements.

```
<form>  
  
  <label for="first">First Name:</label>  
  <input type="text" id="first" />  
  
  <label for="last">Last Name:</label>  
  <input type="text" id="last"/>  
  
</form>
```

In addition to using the <LABEL> tag, the forms should be able to be completed and submitted via keyboard.

Navigation Links (o)

Just as many websites provide links to “jump” to certain sections of a page, a link should be provided so users can “jump” over the navigational links and go directly to the main content. This link should be at the top of the page.

This can be achieved by placing an anchor at the beginning of the main content.

```
<a id="main">Welcome!</a>
```

Then, link to that anchor with an appropriate link (i.e. “Skip Navigation”).

```
<a href="#main">Skip Navigation</a>
```

This standard assists users who use screen readers and/or the keyboard to access content. Without this link, certain users have to listen or tab through redundant content before reaching the main content.

Time Limits (p)

Pages that must be completed within a specific time frame should alert the user and provide an option to get more time.

Some disabilities impact how long a user needs to complete a task. A user may not finish reading or completing the page before it closes or refreshes. Providing an option to get more time allows a user to access the page as long as they need to.

Learning More

The Office of Accessible Systems and Technology (OAST) offers the *DHS OAST Guide for Accessible Web Content* , which explains the Section 508 standards for Web accessibility in greater depth and how to test for compliance. A direct link to the document is provided below:

<https://dhsonline.dhs.gov/portal/jhtml/dc/sfi.jhtml;jsessionid=PRFWCVERYUDY5QFIAACSFY?doid=48803>

OAST also offers accessibility classes for all aspects of Section 508 compliance. A schedule of classes can be obtained by e-mailing accessibility@dhs.gov or visiting their Web portal:

<https://dhsonline.dhs.gov/portal/jhtml/community.jhtml?index=28&community=MGMT&id=2007580003>

Software Applications – § 1194.21

Section 508 software standards aim to make the software itself accessible and prevent the software from interfering with accessibility tools and features. To achieve this accessibility, Section 508 lists twelve standards (a – l) that software should satisfy in order to be fully accessible.

Keyboard Access (a)

Each function of the application should be accessible via keyboard. This is usually done with the Tab, Alt, Enter, and arrow keys.

Accessibility Tools (b)

Accessibility products (i.e. JAWS for Windows) and accessibility features within the operating system (i.e. the high contrast setting) must continue to work when an application is being used.

Assistive Technology and Focus (c)

Assistive technology must be able to discern the current focus so it can relay that focus to the screen reader.

Assistive Technology and User Interface Elements (d)

For each user interface element, assistive technology must be able to identify:

- 1.) Identity (what a control is – a button, check box, radio box, etc.)
- 2.) Operation (what a control is for - what each control does, in the context of the application)
- 3.) State (the status of a control, in relation to its operation – checked, unchecked, etc.)

Icons denoting program controls (i.e. “Open”) should also be available in text.

Icon Meanings (e)

The meaning of an icon should remain the same throughout an application's use.

Text Information (f)

Screen readers should be able to 1.) Detect a focus in the fields and 2.) Read aloud text entered into those fields by the user (letter by letter).

Display Settings (g)

Applications need to render their interface according to the contrast and color selections chosen by the user.

To check for this, enable the high contrast settings (Control Panel → Accessibility Options → Display) and re-launch the application. The application should be rendered according to the new contrast settings.

Animation (h)

The user should have the option to receive any information conveyed through animation through a non-animated mode.

Color Coding (i)

Any color-based information (i.e. a green box denoting “go” and a red box denoting “stop”) should also be communicated textually.

Color Variety (j)

Applications allowing the user to adjust colors and contrast settings should allow **more than one** alternative color / contrast setting.

Flashing and Blinking (k)

Applications should not have any blinking or flashing elements that blink or flash more than once every three seconds.

Forms (I)

Form controls – and the labels indicating their purpose – should be made programmatically available to assistive technology so that users accessing the application non-visually can understand and use the form(s).

Further Study

The Office of Accessible Systems and Technology (OAST) offers a guide that explains the Section 508 standards for software applications in depth and how to test for compliance. A direct link to the document is provided below:

<https://dhsonline.dhs.gov/portal/jhtml/dc/sfi.jhtml;jsessionid=RF3QVGE0PIUJDQFIAACSFFI?doid=48804>

Microsoft Office and Adobe Acrobat

Microsoft Office contains features to make documents accessible and more usable for everyone. Additionally, if the document is converted to a PDF file, the accessibility features carry over to the PDF document.

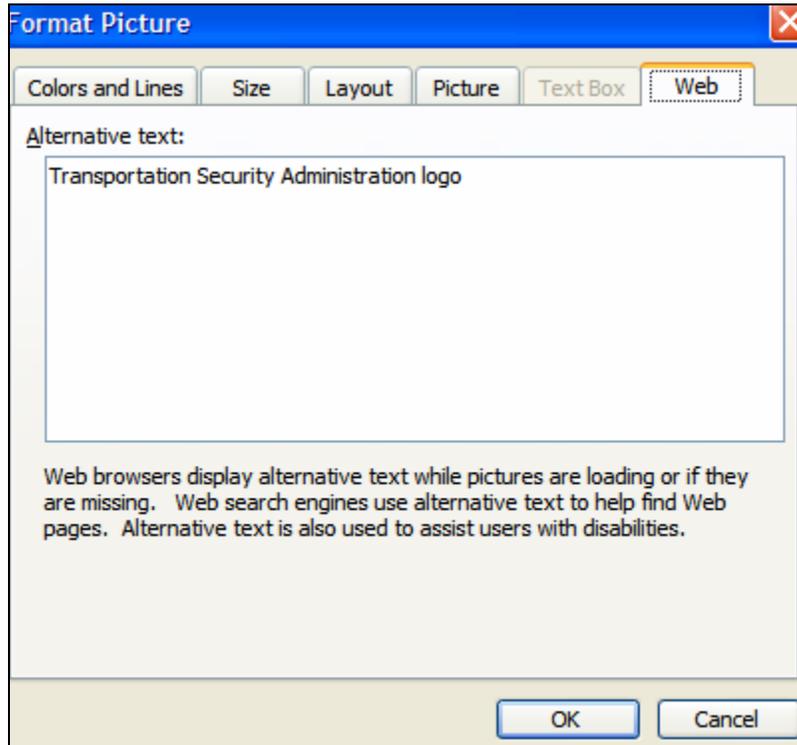
Graphics: Alternative Text

All graphical elements (images and objects) in Office documents should have alternative text for users who use screen readers. Word, PowerPoint, and Excel use the Format feature to attach alternative text to the elements.

To attach alternative text, double click the image or object and write the alternative text into the Web tab of the Format feature.

Screen readers announce the presence of graphics. Therefore, you do not need to note the element's existence (“This is an image that shows...”). Just provide functional text that conveys the precise information that the image or object conveys.

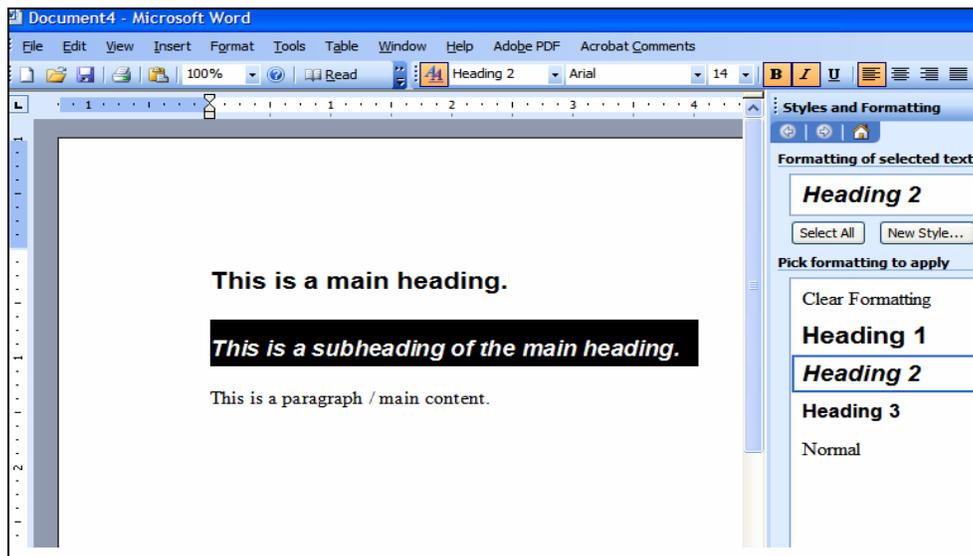
An example below shows the Format feature on the Web tab:



Word

Styles and Formatting

Use the Styles and Formatting feature to show the structure of a document:



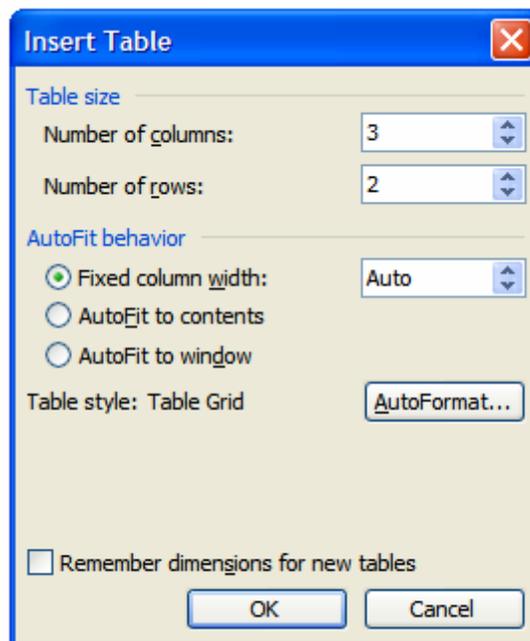
This is different than the Font feature. **Formatting content should be done via Styles and Formatting, not via Font.**

The structure of the document allows screen reader users to jump from section to section, getting a feel for the structure of the content. Furthermore, if the file is converted to a PDF document, the structure will remain in the PDF document.

Tables

To create accessible tables, follow two guidelines:

1.) Always create Tables using the Insert Table feature. Do not use the Tab key or the Draw Table feature.



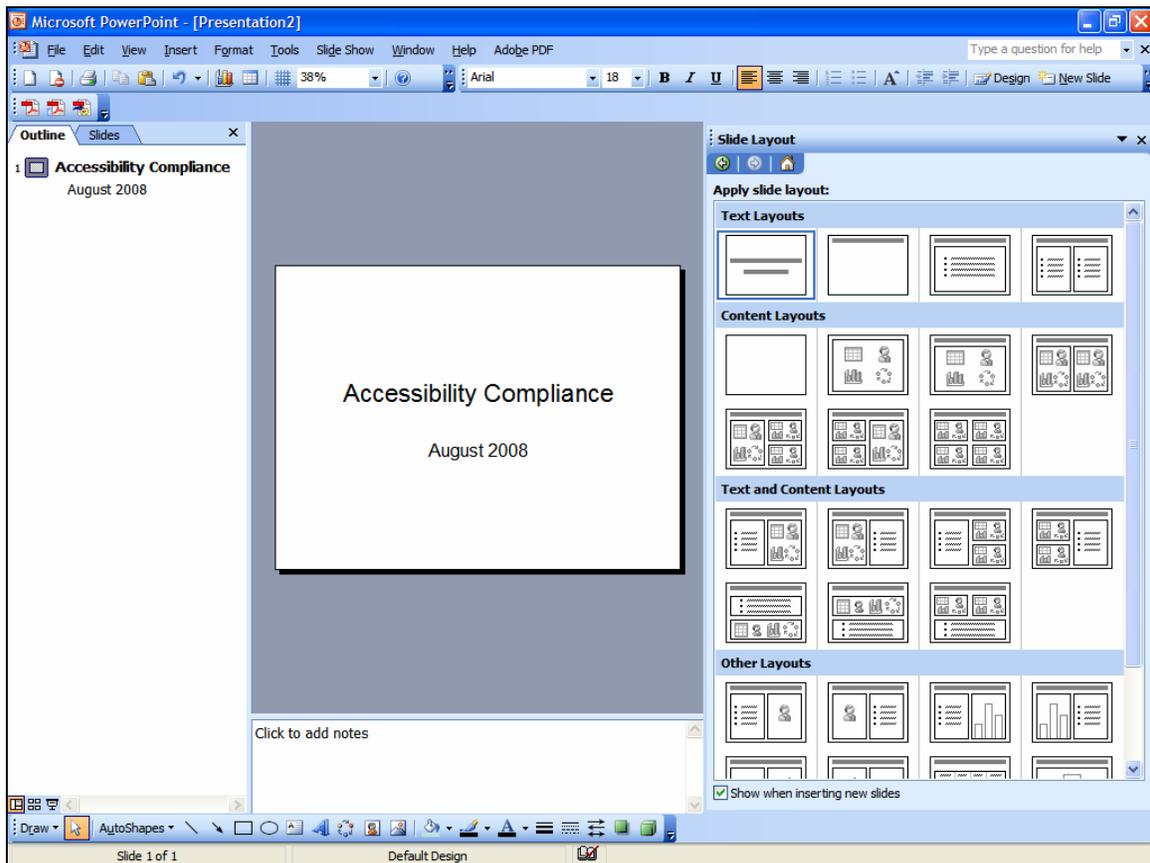
2.) Never leave cells blank. To indicate an empty cell, type an appropriate term or number in white font (i.e. “0”, “N/A”). In this manner, sighted users don’t see anything while screen readers read cell contents in the right order and screen reader users will know that “nothing” is in a particular cell.

Where appropriate, Word documents should include page numbers, a Table of Contents, and/or an index.

PowerPoint

Pre-formatted Slide Layouts

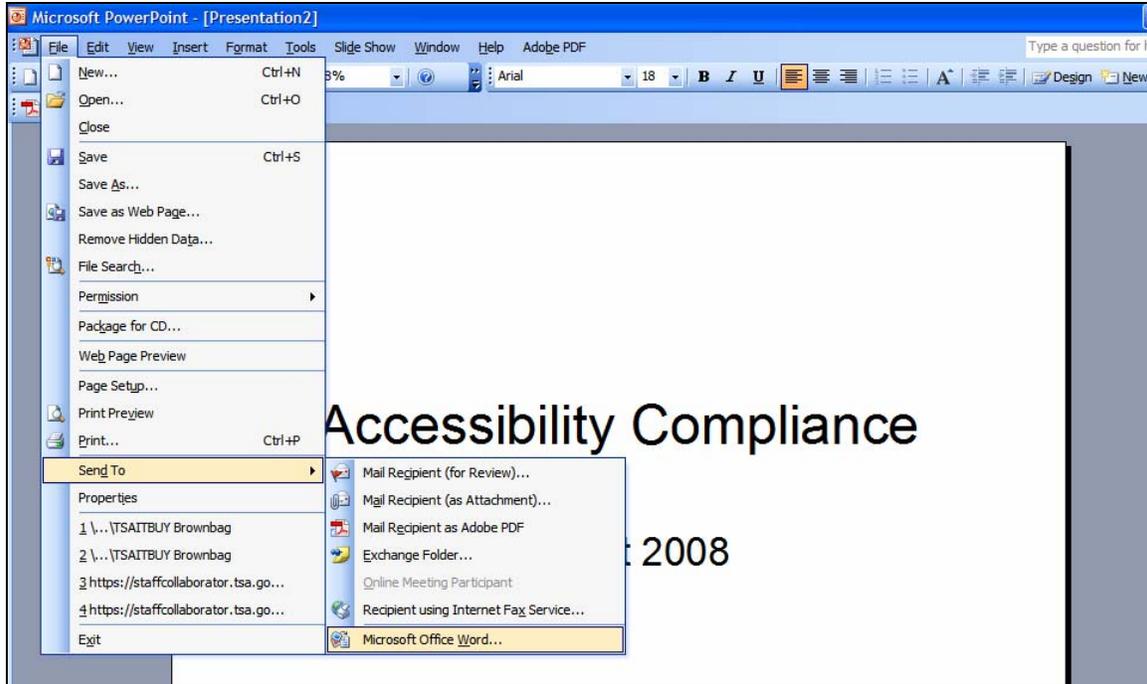
When creating slides, use the pre-formatted slide layouts provided. They have built-in structure which aids screen readers in conveying the content.



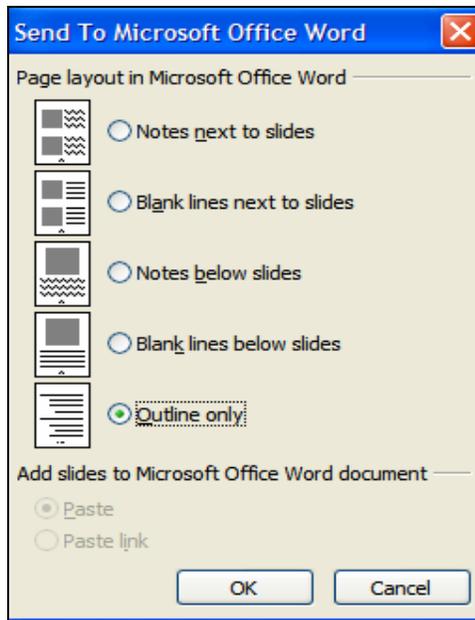
Provide a Word Alternative

PowerPoint presentations can sometimes be inaccessible regardless of the measures you take. To ensure your information is accessible to all users, a Word alternative can be helpful.

When converting a PowerPoint presentation to Word, always use the **Send To** feature. Never copy the slides onto Word; this copies the slides as images.



Converting via the Send To feature copies the notes from the PowerPoint Outline into Word, with the associated structure. When converting the PowerPoint presentation, choose the Outline Only option.



Audio, Video, and Animation

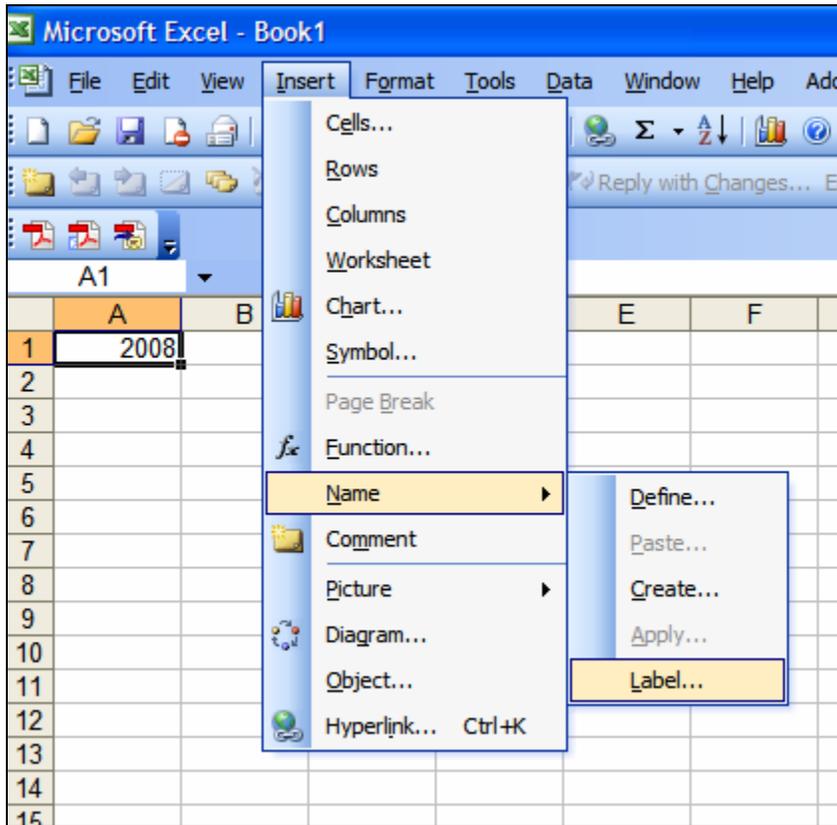
Follow these guidelines for audio, video, and animation:

- 1.) Audio content should have an accompanying transcript.
- 2.) Video content should be captioned.
- 3.) Animation should have a text equivalent.

Excel

Column and Row Headers

Label all column and row headers via the Label feature:

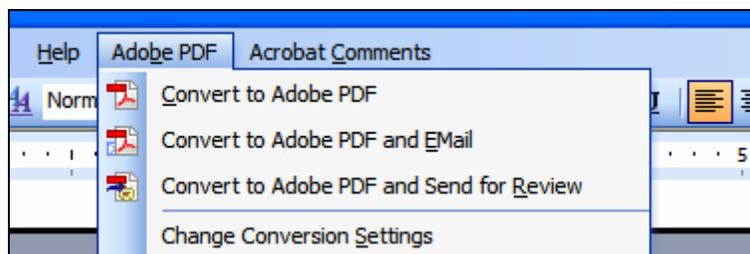


Comments

Comments (Insert → Comments) are not accessible to screen readers. As a substitute, provide them at the bottom of a table, being sure to note which cell they refer to.

Converting Office Documents to PDF

Note: these steps assume conversion is being done with the Adobe PDF plug-in for Microsoft Office:



Although documents can be made accessible in Adobe Acrobat, it is far easier to build accessibility into the document while creating it in Microsoft Office. The accessibility notes in this guide assume that accessibility has been built into the document prior to converting it to PDF. This means:

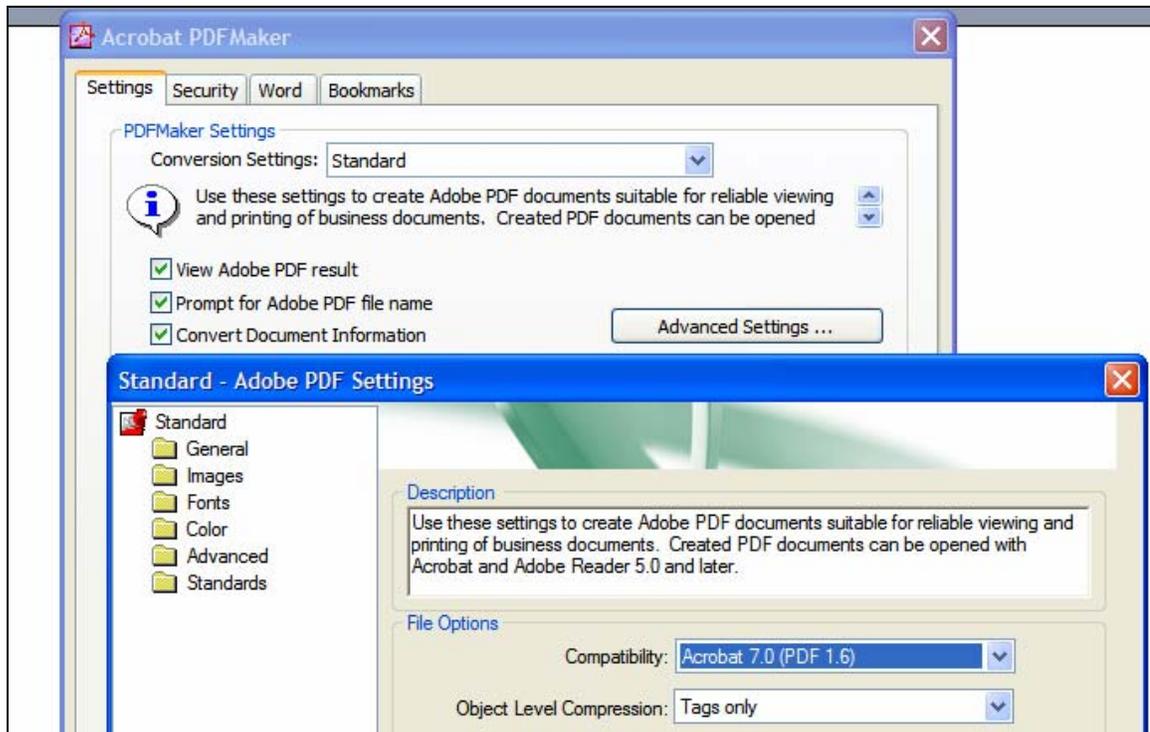
- 1.) Graphics retain their alternative text descriptions.
- 2.) The document's structure (i.e. headings) is retained in the conversion process.

This makes the PDF document accessible to screen readers immediately upon conversion.

The steps to converting an Office document are the same for all Office applications:

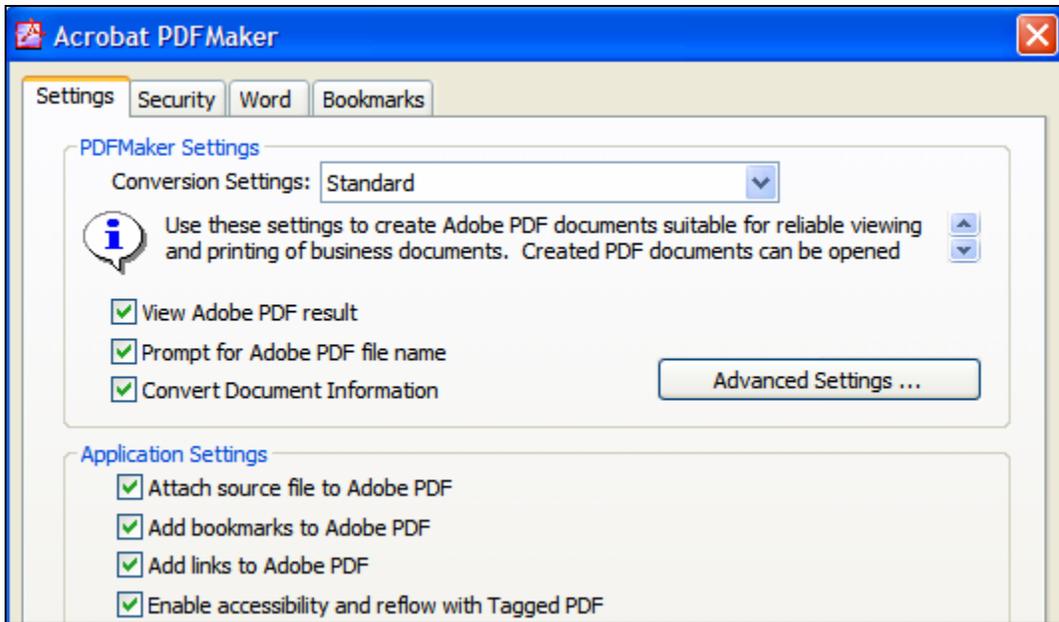
- 1.) Go to **Change Conversion Settings** (Adobe PDF → Change Conversion Settings)

2.) Select **Advanced**

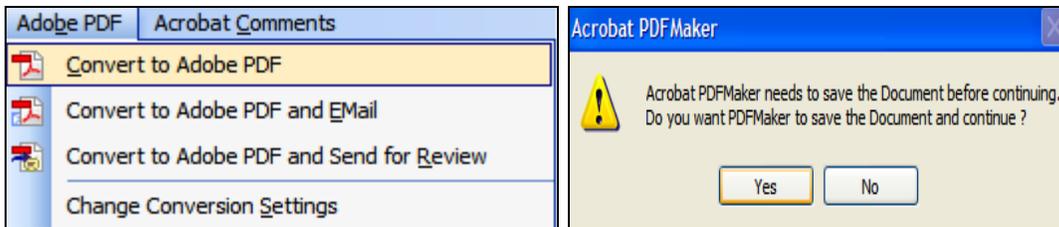


Select **Acrobat 7.0** for Compatibility and **Tags Only** for the Object Level Compression.

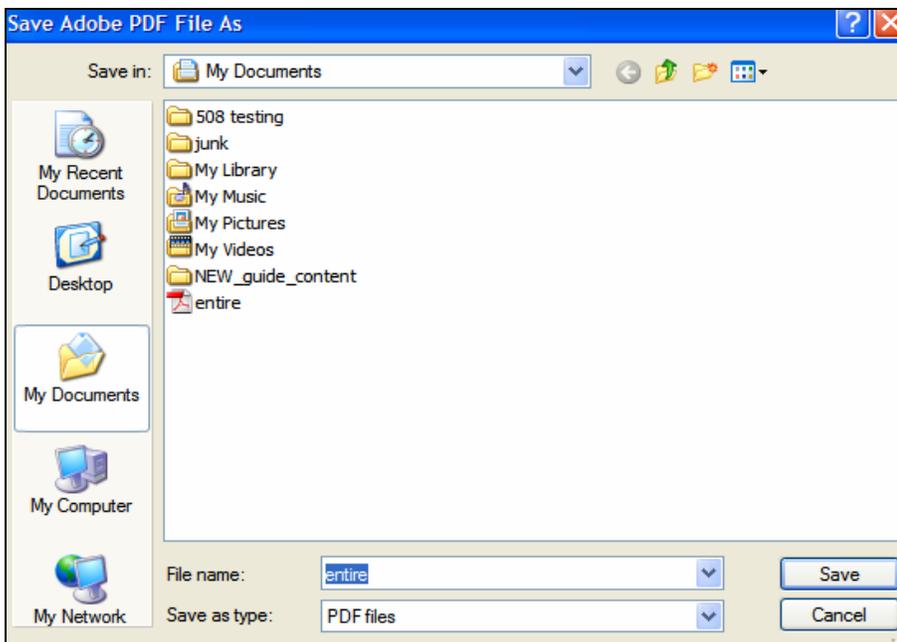
3.) Go back to the **Change Conversion Settings** box and make sure **Attach source file to PDF file name** and **Enable accessibility and reflow with Tagged PDF** are checked.



4.) Convert the document and allow PDFMaker to save the document.



5.) Save the new PDF document.



Because the accessibility of the new PDF document is automated, you'll want to check to make sure that the tags, reading order, and alternative text of the new document are correct.

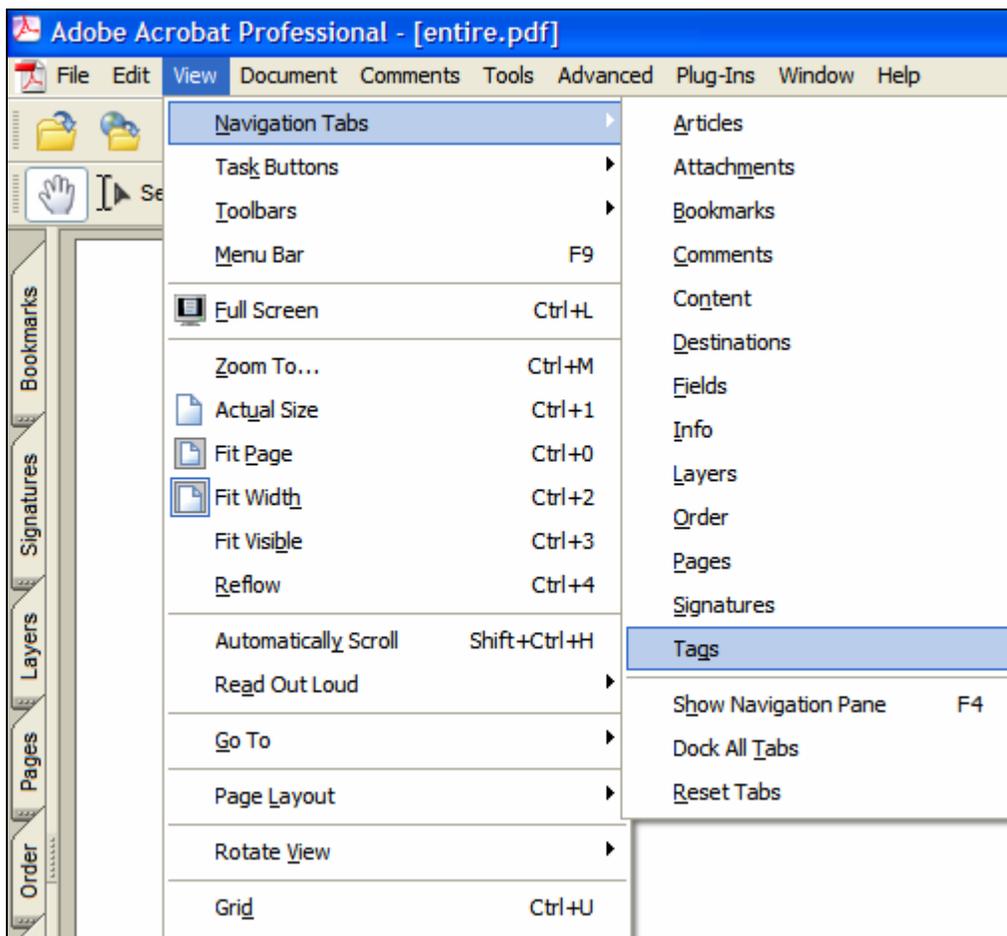
Adobe Acrobat Documents

Assuming you included proper document structure and alternative text descriptions from the original Office document(s), the PDF's accessibility should be identical to the Office one.

Tags

The structure of the Office document will be reflected in the PDF document. To see the structure go to:

View → Navigation Tabs → Tags



To view a piece of content's associated tag, elect to **Highlight Content** in the Options menu. As you select a tag, the associated content will also be highlighted:



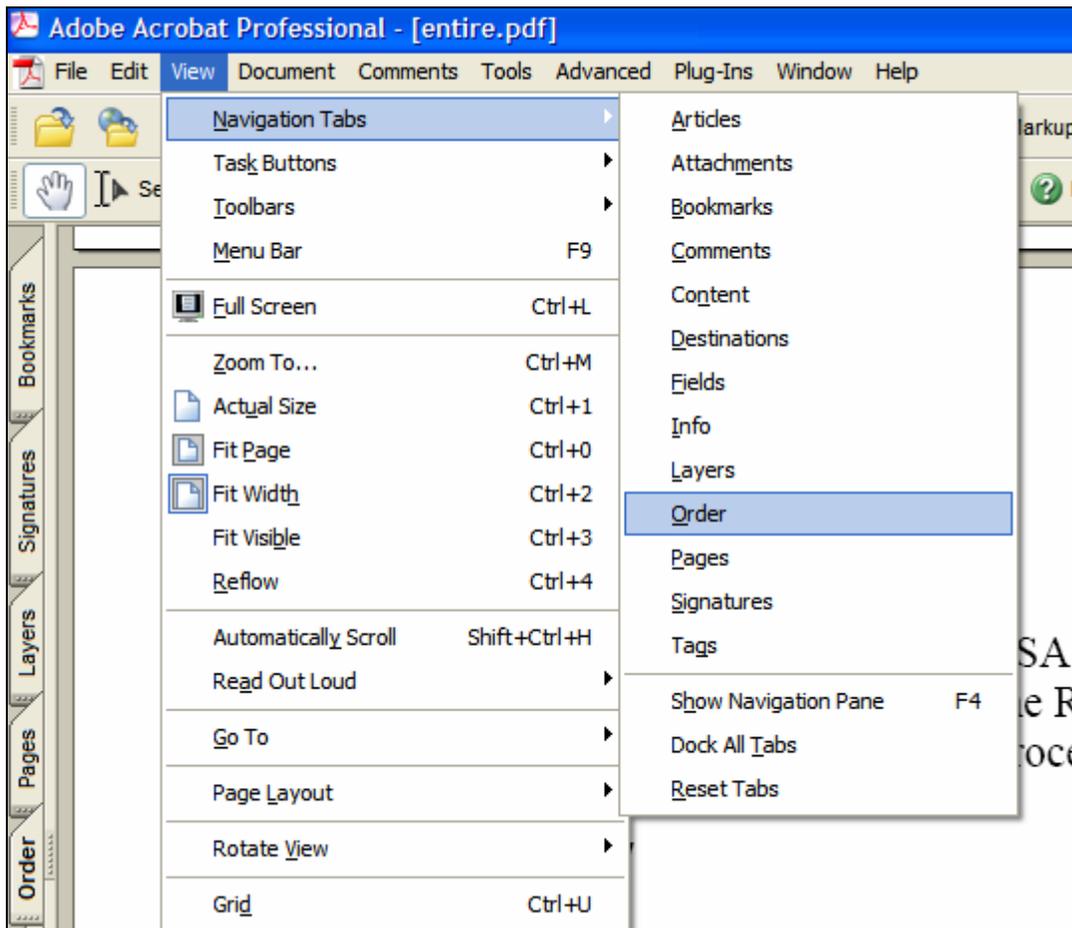
To change a piece of content's tag, right-click the tag in the left pane and select **Properties**:

Reading Order

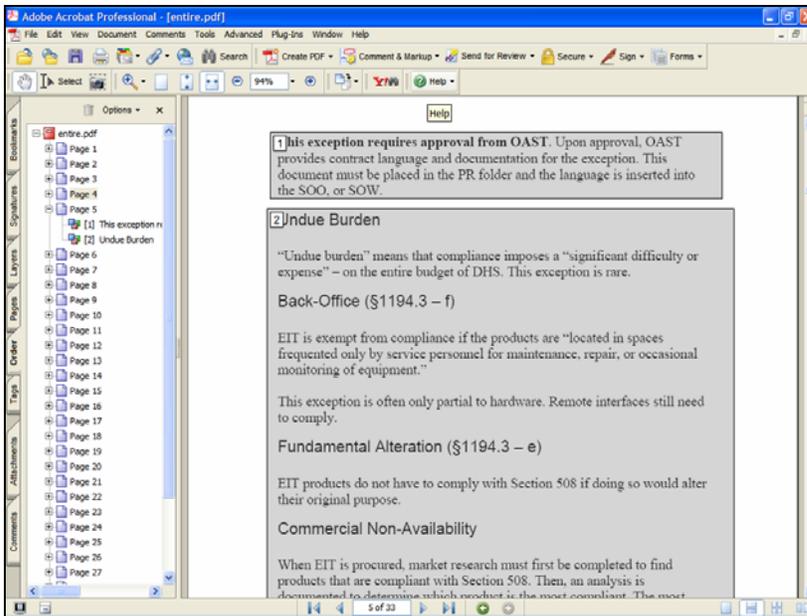
It is important that the reading order of your document make sense, or screen readers will read the content in a jumbled order.

To check the reading order of your document, go to:

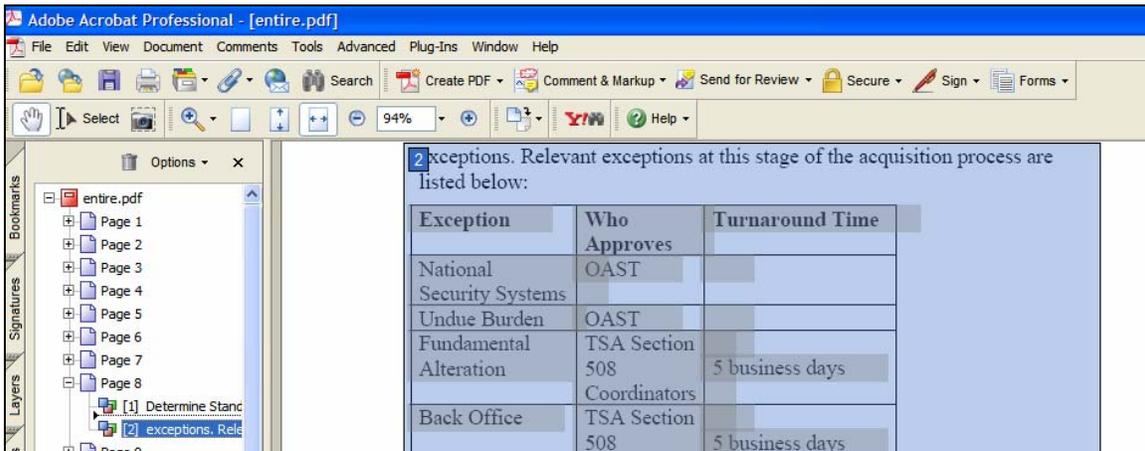
View → Navigation Tabs → Order



The reading order will immediately appear in the right pane:



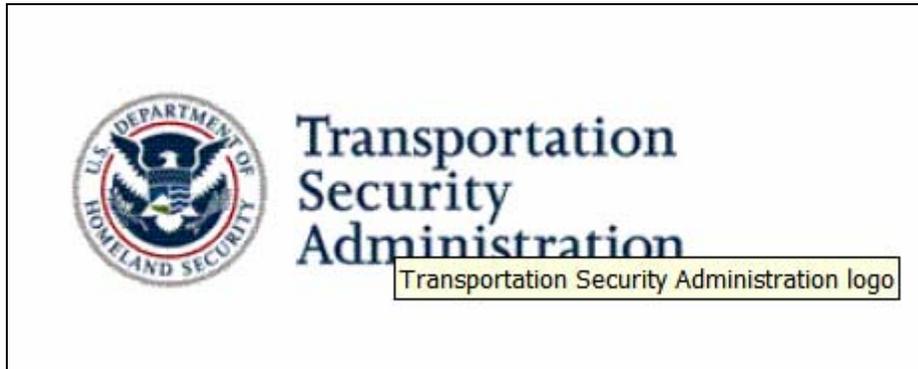
To change the order of a piece, drag the relevant icon to the left of the element up or down, depending on which order you want to place it in:



Alternative Text

The alternative text you assigned to graphical elements in your Office document will carry over to the PDF document.

To see the text, hover your mouse over the graphic:



Learn More

This guide is not comprehensive in its treatment of accessible PDF documents. The Office of Accessible Systems and Technology (OAST) offers classes in creating accessible PDF documents and forms.

A schedule of current courses can be obtained by e-mailing accessibility@dhs.gov or by visiting their portal: <https://dhsonline.dhs.gov/portal/jhtml/community.jhtml?index=28&community=MGMT&id=2007580003>

Getting Help

TSA Section 508 Coordinators are available to assist employees with questions. Their contact information is below:

Neil Bonner

E-Mail: neil.bonner@dhs.gov

Phone: 571-227-2009

Steven Goosey (back-up)

E-Mail: steven.goosey@dhs.gov

Phone: 571-227-2859

A list of the current Section 508 Coordinators for all DHS components is located below:

<https://dhsonline.dhs.gov/portal/jhtml/dc/sf.jhtml?doid=78782>

In addition, the **Office of Accessible Systems and Technology (OAST)** offers accessibility classes for all aspects of Section 508 compliance. A schedule of classes can be obtained by e-mailing accessibility@dhs.gov or visiting their Web portal:

<https://dhsonline.dhs.gov/portal/jhtml/community.jhtml?index=28&community=MGMT&id=2007580003>

Appendix A: Section 508

Subpart A — General

- 1194.1 Purpose.
- 1194.2 Application.
- 1194.3 General exceptions.
- 1194.4 Definitions.
- 1194.5 Equivalent facilitation.

Subpart B — Technical Standards

- 1194.21 Software applications and operating systems.
- 1194.22 Web-based intranet and internet information and applications.
- 1194.23 Telecommunications products.
- 1194.24 Video and multimedia products.
- 1194.25 Self contained, closed products.
- 1194.26 Desktop and portable computers.

Subpart C — Functional Performance Criteria

- 1194.31 Functional performance criteria.

Subpart D — Information, Documentation, and Support

- 1194.41 Information, documentation, and support.

Authority: 29 U.S.C. 794d.

Subpart A — General

§ 1194.1 Purpose.

The purpose of this part is to implement section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d). Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, Federal employees with disabilities have access to and use of information and data that is comparable to the access and use by Federal employees who are not individuals with disabilities, unless an undue burden would be imposed on the agency. Section 508 also requires that individuals with disabilities, who are members of the public seeking

information or services from a Federal agency, have access to and use of information and data that is comparable to that provided to the public who are not individuals with disabilities, unless an undue burden would be imposed on the agency.

§ 1194.2 Application.

(a) Products covered by this part shall comply with all applicable provisions of this part. When developing, procuring, maintaining, or using electronic and information technology, each agency shall ensure that the products comply with the applicable provisions of this part, unless an undue burden would be imposed on the agency.

(1) When compliance with the provisions of this part imposes an undue burden, agencies shall provide individuals with disabilities with the information and data involved by an alternative means of access that allows the individual to use the information and data.

(2) When procuring a product, if an agency determines that compliance with any provision of this part imposes an undue burden, the documentation by the agency supporting the procurement shall explain why, and to what extent, compliance with each such provision creates an undue burden.

(b) When procuring a product, each agency shall procure products which comply with the provisions in this part when such products are available in the commercial marketplace or when such products are developed in response to a Government solicitation. Agencies cannot claim a product as a whole is not commercially available because no product in the marketplace meets all the standards. If products are commercially available that meet some but not all of the standards, the agency must procure the product that best meets the standards.

(c) Except as provided by §1194.3(b), this part applies to electronic and information technology developed, procured, maintained, or used by agencies directly or used by a contractor under a contract with an agency which requires the use of such product, or requires the use, to a significant extent, of such product in the performance of a service or the furnishing of a product.

§ 1194.3 General exceptions.

(a) This part does not apply to any electronic and information technology operated by agencies, the function, operation, or use of which involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapons system, or systems which are critical to the direct fulfillment of military or intelligence missions. Systems which are critical to the direct fulfillment of military or intelligence missions do not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications).

(b) This part does not apply to electronic and information technology that is acquired by a contractor incidental to a contract.

(c) Except as required to comply with the provisions in this part, this part does not require the installation of specific accessibility-related software or the attachment of an assistive technology device at a workstation of a Federal employee who is not an individual with a disability.

(d) When agencies provide access to the public to information or data through electronic and information technology, agencies are not required to make products owned by the agency available for access and use by individuals with disabilities at a location other than that where the electronic and information technology is provided to the public, or to purchase products for access and use by individuals with disabilities at a location other than that where the electronic and information technology is provided to the public.

(e) This part shall not be construed to require a fundamental alteration in the nature of a product or its components.

(f) Products located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this part.

§ 1194.4 Definitions.

The following definitions apply to this part:

Agency. Any Federal department or agency, including the United States Postal Service.

Alternate formats. Alternate formats usable by people with disabilities may include, but are not limited to, Braille, ASCII text, large print, recorded audio, and electronic formats that comply with this part.

Alternate methods. Different means of providing information, including product documentation, to people with disabilities. Alternate methods may include, but are not limited to, voice, fax, relay service, TTY, Internet posting, captioning, text-to-speech synthesis, and audio description.

Assistive technology. Any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve functional capabilities of individuals with disabilities.

Electronic and information technology. Includes information technology and any equipment or interconnected system or subsystem of equipment, that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.

Information technology. Any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

Operable controls. A component of a product that requires physical contact for normal operation. Operable controls include, but are not limited to, mechanically operated controls, input and output trays, card slots, keyboards, or keypads.

Product. Electronic and information technology.

Self Contained, Closed Products. Products that generally have embedded software and are commonly designed in such a fashion that a user cannot easily attach or install assistive technology. These products include, but are not limited to, information kiosks and information transaction machines, copiers, printers, calculators, fax machines, and other similar types of products.

Telecommunications. The transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

TTY. An abbreviation for teletypewriter. Machinery or equipment that employs interactive text based communications through the transmission of coded signals across the telephone network. TTYs may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYs are also called text telephones.

Undue burden. Undue burden means significant difficulty or expense. In determining whether an action would result in an undue burden, an agency shall consider all agency resources available to the program or component for which the product is being developed, procured, maintained, or used.

§ 1194.5 Equivalent facilitation.

Nothing in this part is intended to prevent the use of designs or technologies as alternatives to those prescribed in this part provided they result in substantially equivalent or greater access to and use of a product for people with disabilities.

Subpart B — Technical Standards

§ 1194.21 Software applications and operating systems.

- (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.
- (b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.
- (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.
- (d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.
- (e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.
- (f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.
- (g) Applications shall not override user selected contrast and color selections and other individual display attributes.
- (h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.

(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.

(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

(l) When electronic forms are used, 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.

§ 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).

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

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

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

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

(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.

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

(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.

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

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

(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.

(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.

(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).

(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.

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

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

Note to §1194.22: 1. The Board interprets paragraphs (a) through (k) of this section as consistent with the following priority 1 Checkpoints of the Web Content Accessibility Guidelines 1.0 (WCAG 1.0) (May 5, 1999) published by the Web Accessibility Initiative of the World Wide Web Consortium:

Section 1194.22 Paragraph	WCAG 1.0 Checkpoint
(a)	1.1

(b)	1.4
(c)	2.1
(d)	6.1
(e)	1.2
(f)	9.1
(g)	5.1
(h)	5.2
(i)	12.1
(j)	7.1
(k)	11.4

2. Paragraphs (l), (m), (n), (o), and (p) of this section are different from WCAG 1.0. Web pages that conform to WCAG 1.0, level A (*i.e.*, all priority 1 checkpoints) must also meet paragraphs (l), (m), (n), (o), and (p) of this section to comply with this section. WCAG 1.0 is available at <http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>.

§ 1194.23 Telecommunications products.

(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.

(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.

(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.

(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.

(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.

(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.

(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.

(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.

(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.

(k) Products which have mechanically operated controls or keys, shall comply with the following:

(1) Controls and keys shall be tactilely discernible without activating the controls or keys.

(2) Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.

(3) If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.

(4) The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

§ 1194.24 Video and multimedia products.

(a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.

(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.

(c) All training and informational video 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.

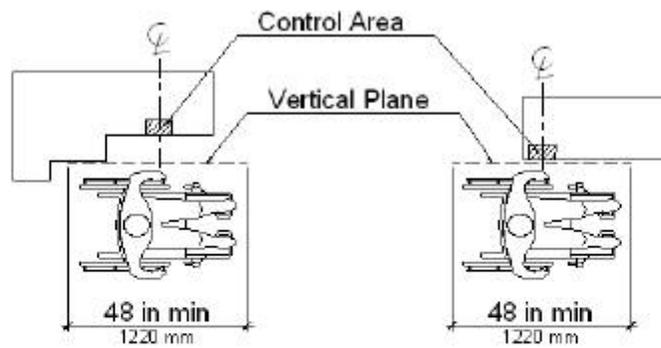
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

§ 1194.25 Self contained, closed products.

- (a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.
- (b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.
- (c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).
- (d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.
- (e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.
- (f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.
- (g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- (h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.
- (i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

(j) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following:

(1) The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length (see Figure 1 of this part).



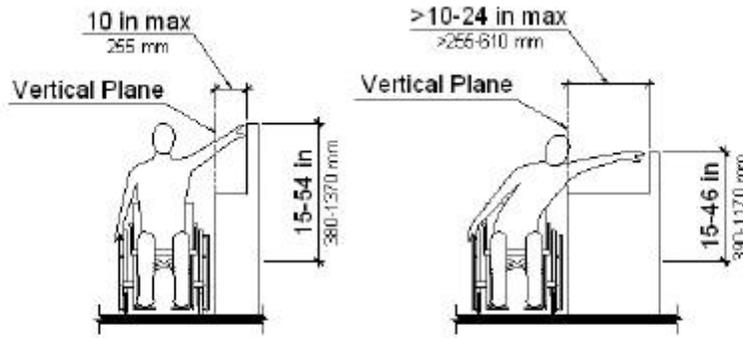
Vertical Plane Relative to the Operable Control

Figure 1

(2) Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.

(3) Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.

(4) Operable controls shall not be more than 24 inches behind the reference plane (see Figure 2 of this part).



Height of Operable Control Relative to the Vertical Plane

Figure 2

§ 1194.26 Desktop and portable computers.

(a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through(4).

(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).

(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.

Subpart C — Functional Performance Criteria

§ 1194.31 Functional performance criteria.

(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are blind or visually impaired shall be provided.

(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired shall be provided.

(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for assistive technology used by people who are deaf or hard of hearing shall be provided.

(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.

(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for assistive technology used by people with disabilities shall be provided.

(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.

Subpart D — Information, Documentation, and Support

§ 1194.41 Information, documentation, and support.

(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.

(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.

(c) Support services for products shall accommodate the communication needs of end-users with disabilities.

