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Introduction

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For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/IEC DIS 40500

Information technology — W3C Web Content Accessibility Guidelines (WCAG) 2.2

*Technologies de l'information — Règles pour l'accessibilité des
contenus Web (WCAG) 2.2*

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Introduction

This section is non-normative.

Background on WCAG 2

Web Content Accessibility Guidelines (WCAG) 2.2 defines how to make Web content more accessible to people with disabilities. Accessibility involves a wide range of disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities. Although these guidelines cover a wide range of issues, they are not able to address the needs of people with all types, degrees, and combinations of disability. These guidelines also make Web content more usable by older individuals with changing abilities due to aging and often improve usability for users in general.

WCAG 2.2 is developed through the [W3C process](#) in cooperation with individuals and organizations around the world, with a goal of providing a shared standard for Web content accessibility that meets the needs of individuals, organizations, and governments internationally. WCAG 2.2 builds on WCAG 2.0 [[WCAG20](#)] and WCAG 2.1 [[WCAG21](#)], which in turn built on WCAG 1.0 [[WAI-WEBCONTENT](#)] and is designed to apply broadly to different Web technologies now and in the future, and to be testable with a combination of automated testing and human evaluation. For an introduction to WCAG, see the [Web Content Accessibility Guidelines \(WCAG\) Overview](#).

Significant challenges were encountered in defining additional criteria to address cognitive, language, and learning disabilities, including a short timeline for development as well as challenges in reaching consensus on testability, implementability, and international considerations of proposals. Work will carry on in this area in future versions of WCAG. We encourage authors to refer to our supplemental guidance on [improving inclusion for people with disabilities, including learning and cognitive disabilities, people with low-vision, and more](#).

Web accessibility depends not only on accessible content but also on accessible Web browsers and other user agents. Authoring tools also have an important role in Web accessibility. For an overview of how these components of Web development and interaction work together, see:

- [Essential Components of Web Accessibility](#)
- [User Agent Accessibility Guidelines \(UAAG\) Overview](#)
- [Authoring Tool Accessibility Guidelines \(ATAG\) Overview](#)

Where this document refers to WCAG 2 it is intended to mean any and all versions of WCAG that start with 2.

WCAG 2 Layers of Guidance

The individuals and organizations that use WCAG vary widely and include Web designers and developers, policy makers, purchasing agents, teachers, and students. In order to meet the varying needs of this audience, several layers of guidance are provided including overall *principles*, general *guidelines*, testable *success criteria* and a rich collection of *sufficient techniques*, *advisory techniques*, and *documented common failures* with examples, resource links and code.

- **Principles** - At the top are four principles that provide the foundation for Web accessibility: *perceivable*, *operable*, *understandable*, and *robust*. See also [Understanding the Four Principles of Accessibility](#).
- **Guidelines** - Under the principles are guidelines. The 13 guidelines provide the basic goals that authors should work toward in order to make content more accessible to users with different disabilities. The guidelines are not testable, but provide the framework and overall objectives to help authors understand the success criteria and better implement the techniques.
- **Success Criteria** - For each guideline, testable success criteria are provided to allow WCAG 2.2 to be used where requirements and conformance testing are necessary such as in design specification, purchasing, regulation, and contractual agreements. In order to meet the needs of different groups and different situations, three levels of conformance are defined: A (lowest), AA, and AAA (highest). Additional information on WCAG levels can be found in [Understanding Levels of Conformance](#).
- **Sufficient and Advisory Techniques** - For each of the *guidelines* and *success criteria* in the WCAG 2.2 document itself, the working group has also documented a wide variety of *techniques*. The techniques are informative and fall into two categories: those that are *sufficient* for meeting the success criteria and those that are *advisory*. The advisory techniques go beyond what is required by the individual success criteria and allow authors to better address the guidelines. Some advisory techniques address accessibility barriers that are not covered by the testable success criteria. Where common failures are known, these are also documented. See also [Sufficient and Advisory Techniques in Understanding WCAG 2.2](#).

All of these layers of guidance (principles, guidelines, success criteria, and sufficient and advisory techniques) work together to provide guidance on how to make content more accessible. Authors are encouraged to view and apply all layers that they are able to, including the advisory techniques, in order to best address the needs of the widest possible range of users.

Note that even content that conforms at the highest level (AAA) will not be accessible to individuals with all types, degrees, or combinations of disability, particularly in the cognitive, language, and learning areas. Authors are encouraged to consider the full range of techniques, including the advisory techniques, [Making Content Usable for People with Cognitive and Learning Disabilities](#), as well as to seek relevant advice about current best practice to ensure that Web content is accessible, as far as possible, to this community. [Metadata](#) may assist users in finding content most suitable for their needs.

WCAG 2.2 Supporting Documents

The WCAG 2.2 document is designed to meet the needs of those who need a stable, referenceable technical standard. Other documents, called supporting documents, are based on the WCAG 2.2 document and address other important purposes, including the ability to be updated to describe how WCAG would be applied with new technologies. Supporting documents include:

1. [How to Meet WCAG 2.2](#) - A customizable quick reference to WCAG 2.2 that includes all of the guidelines, success criteria, and techniques for authors to use as they are developing and evaluating Web content. This includes content from WCAG 2.0, 2.1 2.2 and can be filtered in many ways to help authors focus on relevant content.
2. [Understanding WCAG 2.2](#) - A guide to understanding and implementing WCAG 2.2. There is a short "Understanding" document for each guideline and success criterion in WCAG 2.2 as well as key topics.
3. [Techniques for WCAG 2.2](#) - A collection of techniques and common failures, each in a separate document that includes a description, examples, code and tests.
4. [The WCAG 2 Documents](#) - A brief introduction to the WCAG 2 supporting documents and supplemental guidance.
5. [What's New in WCAG 2.2](#) introduces the new success criteria with persona quotes that illustrate the accessibility issues.

See [Web Content Accessibility Guidelines \(WCAG\) Overview](#) for a description of the WCAG 2.2 supporting material, including education resources related to WCAG 2. Additional resources covering topics such as the business case for Web accessibility, planning implementation to improve the accessibility of Web sites, and accessibility policies are listed in [WAI Resources](#).

Requirements for WCAG 2.2

WCAG 2.2 meets a set of [requirements for WCAG 2.2](#) which, in turn, inherit requirements from previous WCAG 2 versions. Requirements structure the overall framework of guidelines and ensure backwards compatibility. The Working Group also used a less formal set of acceptance criteria for success criteria, to help ensure success criteria are similar in style and quality to those in WCAG 2.0. These requirements constrained what could be included in WCAG 2.2. This constraint was important to preserve its nature as a dot-release of WCAG 2.

Comparison with WCAG 2.1

WCAG 2.2 was initiated with the goal to continue the work of WCAG 2.1: Improving accessibility guidance for three major groups: users with cognitive or learning disabilities, users with low vision, and users with disabilities on mobile devices. Many ways to meet these needs were proposed and evaluated, and a set of these were refined by the Working Group. Structural requirements inherited from WCAG 2.0, clarity and impact of proposals, and timeline led to the final set of success criteria included in this version. The Working Group considers that WCAG 2.2 incrementally advances web

content accessibility guidance for all these areas, but underscores that not all user needs are met by these guidelines.

WCAG 2.2 builds on and is backwards compatible with WCAG 2.1, meaning web pages that conform to WCAG 2.2 are at least as accessible as pages that conform to WCAG 2.1. Requirements have been added that build on 2.1 and 2.0. WCAG 2.2 has removed one success criterion, [4.1.1 Parsing](#). Authors that are required by policy to conform with WCAG 2.0 or 2.1 will be able to update content to WCAG 2.2, but may need to continue to test and report 4.1.1. Authors following more than one version of the guidelines should be aware of the following additions.

New Features in WCAG 2.2

WCAG 2.2 extends WCAG 2.1 by adding new success criteria, definitions to support them, and guidelines to organize the additions. This additive approach helps to make it clear that sites which conform to WCAG 2.2 also conform to WCAG 2.1. The Accessibility Guidelines Working Group recommends that sites adopt WCAG 2.2 as their new conformance target, even if formal obligations mention previous versions, to provide improved accessibility and to anticipate future policy changes.

The following success criteria are new in WCAG 2.2:

- 2.4.11 [Focus Not Obscured \(Minimum\)](#) (AA)
- 2.4.12 [Focus Not Obscured \(Enhanced\)](#) (AAA)
- 2.4.13 [Focus Appearance](#) (AAA)
- 2.5.7 [Dragging Movements](#) (AA)
- 2.5.8 [Target Size \(Minimum\)](#) (AA)
- 3.2.6 [Consistent Help](#) (A)
- 3.3.7 [Redundant Entry](#) (A)
- 3.3.8 [Accessible Authentication \(Minimum\)](#) (AA)
- 3.3.9 [Accessible Authentication \(Enhanced\)](#) (AAA)

The new success criteria may reference new terms that have also been added to the glossary and form part of the normative requirements of the success criteria.

WCAG 2.2 also introduces new sections detailing aspects of the specification which may impact [privacy](#) and [security](#).

Numbering in WCAG 2.2

In order to avoid confusion for implementers for whom backwards compatibility to WCAG 2 versions is important, new success criteria in WCAG 2.2 have been appended to the end of the set of success criteria within their guideline. This avoids the need to change the section number of success criteria from WCAG 2, which would be caused by inserting new success criteria between existing success criteria in the guideline, but it means success criteria in each guideline are no longer grouped by conformance level. The order of success criteria within each guideline does not imply information about conformance level; only the conformance level indicator (A / AA / AAA) on the success criterion itself indicates this. The [WCAG 2.2 Quick Reference](#) will provide a way to

view success criteria grouped by conformance level, along with many other filter and sort options.

Conformance to WCAG 2.2

WCAG 2.2 uses the same conformance model as WCAG 2.0. It is intended that sites that conform to WCAG 2.2 also conform to WCAG 2.0 and WCAG 2.1, which means they meet the requirements of any policies that reference WCAG 2.0 or WCAG 2.1, while also better meeting the needs of users on the current Web.

Later Versions of Accessibility Guidelines

In parallel with WCAG 2.2, the Accessibility Guidelines Working Group is developing another major version of accessibility guidelines. The result of this work is expected to be a more substantial restructuring of web accessibility guidance than would be realistic for dot-releases of WCAG 2. The work follows a research-focused, user-centered design methodology to produce the most effective and flexible outcome, including the roles of content authoring, user agent support, and authoring tool support. This is a multi-year effort, so WCAG 2.2 is needed as an interim measure to provide updated web accessibility guidance to reflect changes on the web since the publication of WCAG 2.0. The Working Group might also develop additional interim versions, continuing with WCAG 2.2, on a similar short timeline to provide additional support while the major version is completed.

1. Perceivable

Information and user interface components must be presentable to users in ways they can perceive.

Guideline 1.1 Text Alternatives

[Understanding Text Alternatives](#) |
[How to Meet Text Alternatives](#)

Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.

Success Criterion 1.1.1 Non-text Content

[Understanding Non-text Content](#) |
[How to Meet Non-text Content](#)

(Level A)

All [non-text content](#) that is presented to the user has a [text alternative](#) that serves the equivalent purpose, except for the situations listed below.

Controls, Input

If non-text content is a control or accepts user input, then it has a [name](#) that describes its purpose. (Refer to [Success Criterion 4.1.2](#) for additional requirements for controls and content that accepts user input.)

Time-Based Media

If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content. (Refer to [Guideline 1.2](#) for additional requirements for media.)

Test

If non-text content is a test or exercise that would be invalid if presented in [text](#), then text alternatives at least provide descriptive identification of the non-text content.

Sensory

If non-text content is primarily intended to create a [specific sensory experience](#), then text alternatives at least provide descriptive identification of the non-text content.

[CAPTCHA](#)

If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.

Decoration, Formatting, Invisible

If non-text content is [pure decoration](#), is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by [assistive technology](#).

Guideline 1.2 Time-based Media

[Understanding Time-based Media](#) |
[How to Meet Time-based Media](#)

Provide alternatives for time-based media.

Success Criterion 1.2.1 Audio-only and Video-only (Prerecorded)

[Understanding Audio-only and Video-only \(Prerecorded\)](#) |
[How to Meet Audio-only and Video-only \(Prerecorded\)](#)

(Level A)

For [prerecorded audio-only](#) and prerecorded [video-only](#) media, the following are true, except when the audio or video is a [media alternative for text](#) and is clearly labeled as such:

Prerecorded Audio-only

An [alternative for time-based media](#) is provided that presents equivalent information for prerecorded audio-only content.

Prerecorded Video-only

Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.

Success Criterion 1.2.2 Captions (Prerecorded)

[Understanding Captions \(Prerecorded\)](#) |
[How to Meet Captions \(Prerecorded\)](#)

(Level A)

[Captions](#) are provided for all [prerecorded audio](#) content in [synchronized media](#), except when the media is a [media alternative for text](#) and is clearly labeled as such.

Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded)

[Understanding Audio Description or Media Alternative \(Prerecorded\)](#) |
[How to Meet Audio Description or Media Alternative \(Prerecorded\)](#)

(Level A)

An [alternative for time-based media](#) or [audio description](#) of the [prerecorded video](#) content is provided for [synchronized media](#), except when the media is a [media alternative for text](#) and is clearly labeled as such.

Success Criterion 1.2.4 Captions (Live)

[Understanding Captions \(Live\)](#) |
[How to Meet Captions \(Live\)](#)

(Level AA)

[Captions](#) are provided for all [live audio](#) content in [synchronized media](#).

Success Criterion 1.2.5 Audio Description (Prerecorded)

[Understanding Audio Description \(Prerecorded\)](#) |
[How to Meet Audio Description \(Prerecorded\)](#)

(Level AA)

[Audio description](#) is provided for all [prerecorded video](#) content in [synchronized media](#).

Success Criterion 1.2.6 Sign Language (Prerecorded)

[Understanding Sign Language \(Prerecorded\)](#) |
[How to Meet Sign Language \(Prerecorded\)](#)

(Level AAA)

[Sign language interpretation](#) is provided for all [prerecorded audio](#) content in [synchronized media](#).

Success Criterion 1.2.7 Extended Audio Description (Prerecorded)

[Understanding Extended Audio Description \(Prerecorded\)](#) |
[How to Meet Extended Audio Description \(Prerecorded\)](#)

(Level AAA)

Where pauses in foreground audio are insufficient to allow [audio descriptions](#) to convey the sense of the video, [extended audio description](#) is provided for all [prerecorded video](#) content in [synchronized media](#).

Success Criterion 1.2.8 Media Alternative (Prerecorded)

[Understanding Media Alternative \(Prerecorded\)](#) |
[How to Meet Media Alternative \(Prerecorded\)](#)

(Level AAA)

An [alternative for time-based media](#) is provided for all [prerecorded synchronized media](#) and for all prerecorded [video-only](#) media.

Success Criterion 1.2.9 Audio-only (Live)

[Understanding Audio-only \(Live\)](#) |
[How to Meet Audio-only \(Live\)](#)

(Level AAA)

An [alternative for time-based media](#) that presents equivalent information for [live audio-only](#) content is provided.

Guideline 1.3 Adaptable

[Understanding Adaptable](#) |
[How to Meet Adaptable](#)

Create content that can be presented in different ways (for example simpler layout) without losing information or structure.

Success Criterion 1.3.1 Info and Relationships

[Understanding Info and Relationships](#) |
[How to Meet Info and Relationships](#)

(Level A)

Information, [structure](#), and [relationships](#) conveyed through [presentation](#) can be [programmatically determined](#) or are available in text.

Success Criterion 1.3.2 Meaningful Sequence

[Understanding Meaningful Sequence](#) |
[How to Meet Meaningful Sequence](#)

(Level A)

When the sequence in which content is presented affects its meaning, a [correct reading sequence](#) can be [programmatically determined](#).

Success Criterion 1.3.3 Sensory Characteristics

[Understanding Sensory Characteristics](#) |
[How to Meet Sensory Characteristics](#)

(Level A)

Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, color, size, visual location, orientation, or sound.

Note

For requirements related to color, refer to [Guideline 1.4](#).

Success Criterion 1.3.4 Orientation

[Understanding Orientation](#) |
[How to Meet Orientation](#)

(Level AA)

Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is [essential](#).

Note

Examples where a particular display orientation may be essential are a bank check, a piano application, slides for a projector or television, or virtual reality content where content is not necessarily restricted to landscape or portrait display orientation.

Success Criterion 1.3.5 Identify Input Purpose

[Understanding Identify Input Purpose](#) |
[How to Meet Identify Input Purpose](#)

(Level AA)

The purpose of each input field collecting information about the user can be [programmatically determined](#) when:

- The input field serves a purpose identified in the [Input Purposes for user interface components section](#); and
- The content is implemented using technologies with support for identifying the expected meaning for form input data.

Success Criterion 1.3.6 Identify Purpose

[Understanding Identify Purpose](#) |
[How to Meet Identify Purpose](#)

(Level AAA)

In content implemented using markup languages, the purpose of [user interface components](#), icons, and [regions](#) can be [programmatically determined](#).

Guideline 1.4 Distinguishable

[Understanding Distinguishable](#) |
[How to Meet Distinguishable](#)

Make it easier for users to see and hear content including separating foreground from background.

Success Criterion 1.4.1 Use of Color

[Understanding Use of Color](#) |
[How to Meet Use of Color](#)

(Level A)

Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

Note

This success criterion addresses color perception specifically. Other forms of perception are covered in [Guideline 1.3](#) including programmatic access to color and other visual presentation coding.

Success Criterion 1.4.2 Audio Control

[Understanding Audio Control](#) |
[How to Meet Audio Control](#)

(Level A)

If any audio on a Web page plays automatically for more than 3 seconds, either a [mechanism](#) is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level.

Note

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether or not it is used to meet other success criteria) must meet this success criterion. See [Conformance Requirement 5: Non-Interference](#).

Success Criterion 1.4.3 Contrast (Minimum)

[Understanding Contrast \(Minimum\)](#) |
[How to Meet Contrast \(Minimum\)](#)

(Level AA)

The visual presentation of [text](#) and [images of text](#) has a [contrast ratio](#) of at least 4.5:1, except for the following:

Large Text

[Large-scale](#) text and images of large-scale text have a contrast ratio of at least 3:1;

Incidental

Text or images of text that are part of an inactive [user interface component](#), that are [pure decoration](#), that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.

Logotypes

Text that is part of a logo or brand name has no contrast requirement.

Success Criterion 1.4.4 Resize Text

[Understanding Resize Text](#) |
[How to Meet Resize Text](#)

(Level AA)

Except for [captions](#) and [images of text](#), [text](#) can be resized without [assistive technology](#) up to 200 percent without loss of content or functionality.

Success Criterion 1.4.5 Images of Text

[Understanding Images of Text](#) |
[How to Meet Images of Text](#)

(Level AA)

If the technologies being used can achieve the visual presentation, [text](#) is used to convey information rather than [images of text](#) except for the following:

Customizable

The image of text can be [visually customized](#) to the user's requirements;

Essential

A particular presentation of text is [essential](#) to the information being conveyed.

Note

Logotypes (text that is part of a logo or brand name) are considered essential.

Success Criterion 1.4.6 Contrast (Enhanced)

[Understanding Contrast \(Enhanced\)](#) |
[How to Meet Contrast \(Enhanced\)](#)

(Level AAA)

The visual presentation of [text](#) and [images of text](#) has a [contrast ratio](#) of at least 7:1, except for the following:

Large Text

[Large-scale](#) text and images of large-scale text have a contrast ratio of at least 4.5:1;

Incidental

Text or images of text that are part of an inactive [user interface component](#), that are [pure decoration](#), that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.

Logotypes

Text that is part of a logo or brand name has no contrast requirement.

Success Criterion 1.4.7 Low or No Background Audio

[Understanding Low or No Background Audio](#) |
[How to Meet Low or No Background Audio](#)

(Level AAA)

For [prerecorded audio-only](#) content that (1) contains primarily speech in the foreground, (2) is not an audio [CAPTCHA](#) or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true:

No Background

The audio does not contain background sounds.

Turn Off

The background sounds can be turned off.

20 dB

The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.

Note

Per the definition of "decibel," background sound that meets this requirement will be approximately four times quieter than the foreground speech content.

Success Criterion 1.4.8 Visual Presentation

[Understanding Visual Presentation](#) |
[How to Meet Visual Presentation](#)

(Level AAA)

For the visual presentation of [blocks of text](#), a [mechanism](#) is available to achieve the following:

- Foreground and background colors can be selected by the user.

- Width is no more than 80 characters or glyphs (40 if CJK).
- Text is not justified (aligned to both the left and the right margins).
- Line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing.
- Text can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text [on a full-screen window](#).

Note 1

Content is not required to use these values. The requirement is that a mechanism is available for users to change these presentation aspects. The mechanism can be provided by the browser or other user agent. Content is not required to provide the mechanism.

Note 2

Writing systems for some languages use different presentation aspects to improve readability and legibility. If a presentation aspect in this success criterion is not used in a writing system, content in that writing system does not need to use that presentation setting and can conform without it. Authors are encouraged to follow guidance for improving readability and legibility of text in their writing system.

Success Criterion 1.4.9 Images of Text (No Exception)

[Understanding Images of Text \(No Exception\)](#) |
[How to Meet Images of Text \(No Exception\)](#)

(Level AAA)

[Images of text](#) are only used for [pure decoration](#) or where a particular presentation of [text](#) is [essential](#) to the information being conveyed.

Note

Logotypes (text that is part of a logo or brand name) are considered essential.

Success Criterion 1.4.10 Reflow

[Understanding Reflow](#) |
[How to Meet Reflow](#)

(Level AA)

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:

- Vertical scrolling content at a width equivalent to 320 [CSS pixels](#);
- Horizontal scrolling content at a height equivalent to 256 [CSS pixels](#).

Except for parts of the content which require two-dimensional layout for usage or meaning.

Note 1

320 CSS pixels is equivalent to a starting viewport width of 1280 CSS pixels wide at 400% zoom. For web content which is designed to scroll horizontally (e.g., with vertical text), 256 CSS pixels is equivalent to a starting viewport height of 1024 CSS pixels at 400% zoom.

Note 2

Examples of content which requires two-dimensional layout are images required for understanding (such as maps and diagrams), video, games, presentations, data tables (not individual cells), and interfaces where it is necessary to keep toolbars in view while manipulating content. It is acceptable to provide two-dimensional scrolling for such parts of the content.

Success Criterion 1.4.11 Non-text Contrast

[Understanding Non-text Contrast](#) |
[How to Meet Non-text Contrast](#)

(Level AA)

The visual [presentation](#) of the following have a [contrast ratio](#) of at least 3:1 against adjacent color(s):

User Interface Components

Visual information required to identify [user interface components](#) and [states](#), except for inactive components or where the appearance of the component is determined by the user agent and not modified by the author;

Graphical Objects

Parts of graphics required to understand the content, except when a particular presentation of graphics is [essential](#) to the information being conveyed.

Success Criterion 1.4.12 Text Spacing

[Understanding Text Spacing](#) |
[How to Meet Text Spacing](#)

(Level AA)

In content implemented using markup languages that support the following [text style properties](#), no loss of content or functionality occurs by setting all of the following and by changing no other style property:

- Line height (line spacing) to at least 1.5 times the font size;
- Spacing following paragraphs to at least 2 times the font size;
- Letter spacing (tracking) to at least 0.12 times the font size;

- Word spacing to at least 0.16 times the font size.

Exception: Human languages and scripts that do not make use of one or more of these text style properties in written text can conform using only the properties that exist for that combination of language and script.

Note 1

Content is not required to use these text spacing values. The requirement is to ensure that when a user overrides the authored text spacing, content or functionality is not lost.

Note 2

Writing systems for some languages use different text spacing settings, such as paragraph start indent. Authors are encouraged to follow locally available guidance for improving readability and legibility of text in their writing system.

Success Criterion 1.4.13 Content on Hover or Focus

[Understanding Content on Hover or Focus](#) |
[How to Meet Content on Hover or Focus](#)

(Level AA)

Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true:

Dismissible

A [mechanism](#) is available to dismiss the additional content without moving pointer hover or keyboard focus, unless the additional content communicates an [input error](#) or does not obscure or replace other content;

Hoverable

If pointer hover can trigger the additional content, then the pointer can be moved over the additional content without the additional content disappearing;

Persistent

The additional content remains visible until the hover or focus trigger is removed, the user dismisses it, or its information is no longer valid.

Exception: The visual presentation of the additional content is controlled by the user agent and is not modified by the author.

Note 1

Examples of additional content controlled by the user agent include browser tooltips created through use of the HTML [title attribute](#) [[HTML](#)].

Note 2

Custom tooltips, sub-menus, and other nonmodal popups that display on hover and focus are examples of additional content covered by this criterion.

Note 3

This criterion applies to content that appears in addition to the triggering component itself. Since hidden components that are made visible on keyboard focus (such as links used to skip to another part of a page) do not present additional content they are not covered by this criterion.

2. Operable

User interface components and navigation must be operable.

Guideline 2.1 Keyboard Accessible

[Understanding Keyboard Accessible](#) |
[How to Meet Keyboard Accessible](#)

Make all functionality available from a keyboard.

Success Criterion 2.1.1 Keyboard

[Understanding Keyboard](#) |
[How to Meet Keyboard](#)

(Level A)

All [functionality](#) of the content is operable through a [keyboard interface](#) without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints.

Note 1

This exception relates to the underlying function, not the input technique. For example, if using handwriting to enter text, the input technique (handwriting) requires path-dependent input but the underlying function (text input) does not.

Note 2

This does not forbid and should not discourage providing mouse input or other input methods in addition to keyboard operation.

Success Criterion 2.1.2 No Keyboard Trap

[Understanding No Keyboard Trap](#) |
[How to Meet No Keyboard Trap](#)

(Level A)

If keyboard focus can be moved to a component of the page using a [keyboard interface](#), then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.

Note

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See [Conformance Requirement 5: Non-Interference](#).

Success Criterion 2.1.3 Keyboard (No Exception)

[Understanding Keyboard \(No Exception\)](#) |
[How to Meet Keyboard \(No Exception\)](#)

(Level AAA)

All [functionality](#) of the content is operable through a [keyboard interface](#) without requiring specific timings for individual keystrokes.

Success Criterion 2.1.4 Character Key Shortcuts

[Understanding Character Key Shortcuts](#) |
[How to Meet Character Key Shortcuts](#)

(Level A)

If a [keyboard shortcut](#) is implemented in content using only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true:

Turn off

A [mechanism](#) is available to turn the shortcut off;

Remap

A mechanism is available to remap the shortcut to include one or more non-printable keyboard keys (e.g., Ctrl, Alt);

Active only on focus

The keyboard shortcut for a [user interface component](#) is only active when that component has focus.

Guideline 2.2 Enough Time

[Understanding Enough Time](#) |
[How to Meet Enough Time](#)

Provide users enough time to read and use content.

Success Criterion 2.2.1 Timing Adjustable

[Understanding Timing Adjustable](#) |
[How to Meet Timing Adjustable](#)

(Level A)

For each time limit that is set by the content, at least one of the following is true:

Turn off

The user is allowed to turn off the time limit before encountering it; or

Adjust

The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or

Extend

The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; or

Real-time Exception

The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or

Essential Exception

The time limit is [essential](#) and extending it would invalidate the activity; or

20 Hour Exception

The time limit is longer than 20 hours.

Note

This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with [Success Criterion 3.2.1](#) which puts limits on changes of content or context as a result of user action.

Success Criterion 2.2.2 Pause, Stop, Hide

[Understanding Pause, Stop, Hide](#) |
[How to Meet Pause, Stop, Hide](#)

(Level A)

For moving, [blinking](#), scrolling, or auto-updating information, all of the following are true:

Moving, blinking, scrolling

For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to [pause](#), stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is [essential](#); and

Auto-updating

For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

Note 1

For requirements related to flickering or flashing content, refer to [Guideline 2.3](#).

Note 2

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See [Conformance Requirement 5: Non-Interference](#).

Note 3

Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so.

Note 4

An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken.

Success Criterion 2.2.3 No Timing

[Understanding No Timing](#) |
[How to Meet No Timing](#)

(Level AAA)