
**Digital publishing — EPUB
accessibility — Conformance and
discoverability requirements for EPUB
publications**

*Edition numérique — EPUB accessibilité — Exigences de conformité
et de découverte pour EPUB publications*

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 34, *Document description and processing languages*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document, EPUB accessibility, addresses two key needs in the EPUB® ecosystem:

- discoverability of the accessible qualities of EPUB publications;
- evaluation and certification of accessible EPUB publications.

The provision of accessibility metadata facilitates informed decisions about the usability of an EPUB publication. Consumers can review the qualities of the content and decide whether an EPUB publication is appropriate for their needs, regardless of whether it meets the bar of being certified broadly accessible. At a minimum, all EPUB publications that conform to this document meet the accessibility metadata requirements described in [Clause 6](#).

Although it has always been possible to create EPUB publications with a high degree of accessibility, this document also sets formal requirements for content to be certified as accessible. These requirements provide authors a clear set of guidelines to evaluate their content against and allow certification of quality. An accessible EPUB publication is one that meets the accessibility requirements as described in [Clause 7](#).

The document also establishes how to identify content that is optimized for specific user needs so cannot meet broad accessibility requirements. The requirements for optimized publications are described in [Clause 8](#).

This document does not target a single version of EPUB. It is designed to be applicable to EPUB publications that conform to any version or profile (e.g. EPUB 2⁵¹ or ISO/IEC 23736-1), including future versions of the standard.

Ideally, these guidelines will be instructive in evaluating any digital publication built on Open Web technologies, although ensuring such application is outside the scope of this document.

NOTE For additional background on the decisions that went into this document, refer to EPUB Accessibility Frequently Asked Questions^[6].

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Digital publishing — EPUB accessibility — Conformance and discoverability requirements for EPUB publications

1 Scope

This document specifies content conformance requirements for verifying the accessibility of EPUB publications. It also specifies accessibility metadata requirements for the discoverability of EPUB publications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15836-2, *Information and documentation — The Dublin Core metadata element set — Part 2: DCMI Properties and classes*

ISO/IEC 23736-2, *Information technology — Digital publishing — EPUB 3.0.1 — Part 2: Publications*

ISO/IEC 40500, *Information technology — W3C Web Content Accessibility Guidelines (WCAG) 2.0*

RFC 3987, Internationalized Resource Identifiers (IRIs). M Duerst, et al. January 2005. Available at <https://tools.ietf.org/html/rfc3987>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 23736-2 and ISO/IEC 40500 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Success techniques

This document takes an abstract approach to the accessibility requirements for EPUB publications, similar to how WCAG 2.0 (ISO/IEC 40500) separates its accessibility guidelines from the techniques to achieve them. This approach allows the guidelines to remain stable even as the format evolves.

To facilitate this approach, the companion EPUB Accessibility Techniques^[Z] document outlines conformance techniques. These techniques explain how to meet the requirements of this document for different versions of EPUB.

5 Application to older versions

This document is designed to be applicable to any EPUB publication, even if the content conforms to an older version of EPUB that does not refer to this document (e.g. EPUB 2^[5]).

Authors of such EPUB publications are encouraged to create content in conformance with the accessibility and discoverability requirements of this document. Upgrading to the latest version of EPUB to get access to the most advanced accessibility features and techniques is also encouraged.

6 Discoverability

6.1 General

Unlike web pages, EPUB publications are designed to be distributed through many channels for personal consumption — a model that has made EPUB a successful format for ebooks and other types of digital publications. A consequence of this model, however, is that specific details about the accessibility of a publication need to travel with it.

An online bookstore aggregating content from publishers and authors, for example, does not know the production quality that went into each submission unless the publisher informs them through metadata.

Ensuring that the accessible qualities of an EPUB publication can be discovered by any interested party is therefore a primary concern. Users need to be able to gauge the usability of an EPUB publication when they purchase, borrow or otherwise obtain it, a determination that requires knowing the affordances made to meet the accessibility requirements.

Similarly, content that does not meet the accessibility requirements of this document does not necessarily fail to meet the needs of individual users.

Only through the provision of rich metadata can a user decide if the content is suitable for them.

6.2 Package metadata

All EPUB publications shall include accessibility metadata in the package document that exposes their accessible properties, regardless of whether the publications also meet the accessibility (Clause 7) or optimization (Clause 8) requirements.

EPUB publications shall include the following accessibility metadata:

- Access modes — a human sensory perceptual system or cognitive faculty necessary to process or perceive the content (e.g. textual, visual, auditory, tactile).
- Accessibility features — features and adaptations that contribute to the overall accessibility of the content (e.g. alternative text, extended descriptions, captions).
- Accessibility hazards — any potential hazards that the content presents (e.g. flashing, motion simulation, sound).
- Accessibility summary — a human-readable summary of the overall accessibility, which includes a description of any known deficiencies (e.g. lack of extended descriptions, specific hazards).

EPUB publications should include the following accessibility metadata:

- Sufficient access modes — a set of one or more access modes sufficient to consume the content without significant loss of information. An EPUB publication can have more than one set of sufficient access modes for its consumption depending on the types of content it includes (i.e. unlike access modes, this property takes into account any affordances for content that is not broadly accessible, such as the inclusion of transcripts for audio content).

EPUB publications may include the following accessibility metadata:

- Accessibility application programming interfaces (APIs) — to indicate the resource is compatible with the specified accessibility API. This property is typically only used to indicate that the use of scripting in an EPUB publication follows Accessible Rich Internet Applications (WAI-ARIA) 1.1^[3]

authoring practices, as compatibility with operating system accessibility APIs is a concern for reading systems.

- Accessibility controls — input methods that can be used to access the content (e.g. keyboard, mouse).

Authors may include additional accessibility metadata not specified in this subclause.

NOTE See Discovery Metadata Techniques in EPUB Accessibility Techniques^[Z] for more information on these properties and how to include them in different versions of EPUB. See also DIST-002: Include accessibility metadata in distribution records in EPUB Accessibility Techniques^[Z] for more information on including accessibility metadata in other formats.

6.3 Linked metadata records

Accessibility metadata can also be included in linked records (see ISO/IEC 23736-2) (i.e. metadata records referenced from `link` elements), but the inclusion of such metadata solely in a linked record does not satisfy the discoverability requirements of this document.

7 Accessible publications

7.1 General

EPUB is built on the Open Web Platform, with HTML, CSS, JavaScript and SVG, the core technologies used for content authoring. The use of these technologies means that EPUB publications can be authored with a high degree of accessibility simply through the proper application of established web accessibility techniques.

The primary source for the production of accessible web content is the W3C Web Content Accessibility Guidelines (WCAG) 2.0 (ISO/IEC 40500). This document leverages the extensive work done in WCAG 2.0 to establish benchmarks for accessible content, and the same four high-level content principles — perceivable, operable, understandable and robust — are central to creating EPUB publications that are accessible.

This clause defines how to apply the conformance criteria defined in WCAG 2.0 and addresses qualities unique to EPUB publications.

EPUB publications authored to comply with the requirements in this clause will have a high degree of accessibility for users with a wide variety of reading needs and preferences.

7.2 Relationship to WCAG

WCAG 2.0 (ISO/IEC 40500) and its associated techniques (WCAG 2.0 techniques) provide extensive coverage of issues and solutions for web content accessibility — from tables to embedded multimedia to rich semantics. They represent the foundation that this document builds upon.

This document does not repeat the requirements or techniques introduced in those documents, as it risks breaking compatibility between the two standards (e.g. putting guidance out of sync, or in conflict). At the same time, although the requirements are not individually called out, it does not diminish their importance in creating EPUB publications that are accessible.

This document instead defines how to apply WCAG 2.0 to an EPUB publication — which is a collection of web documents as opposed to a single page (7.3.2.1) — and adds an additional set of requirements (7.4). These requirements are no more or less important than those covered in WCAG 2.0; they are simply necessary to follow for EPUB publications. (The relationship to WCAG 2.0 is explained for each requirement in its respective subclause.)

The same is true of the techniques in the EPUB Accessibility Techniques^[Z] document. It provides coverage of techniques that are unique to EPUB publications, or that need clarification in the context of an EPUB publication. It does not mean that the rest of the WCAG techniques are not applicable.

As a result, although this clause can be read without deep knowledge of WCAG 2.0 conformance, to implement the accessibility requirements of this document will require an understanding of WCAG 2.0.

Because this document adds requirements that are not a part of WCAG 2.0, an EPUB publication can conform to WCAG 2.0 without conforming to this document.

7.3 WCAG conformance

7.3.1 WCAG conformance requirements

EPUB publications shall meet WCAG 2.0 Level A (ISO/IEC 40500) to be conformant with this document, but it is recommended that they meet Level AA.

NOTE Although this document only requires Level A conformance, local and national laws can influence the level of conformance an EPUB publication has to meet to be considered accessible. Level AA conformance is often cited as the benchmark for accessibility in legal frameworks and policies, for example. Additionally, any procurer or distributor of EPUB publications can demand higher conformance requirements than the baseline defined here.

7.3.2 Evaluating WCAG conformance

7.3.2.1 Page and publication

The WCAG 2.0 principles focus on the evaluation of individual web pages, but an EPUB publication more closely resembles what WCAG 2.0 refers to as a set of web pages: "[a] collection of Web pages that share a common purpose" (ISO/IEC 40500).

Consequently, when evaluating the accessibility of an EPUB publication, individual pages — or content documents, as they are known in EPUB 3 — cannot be reviewed in isolation. Rather, their overall accessibility as parts of a larger work also shall be evaluated.

For example, it is not sufficient for individual EPUB content documents to have a logical reading order if the publication presents them in the wrong order. Likewise, including a title for every EPUB content document is complementary to providing a title for the publication: the overall accessibility is affected if either is missing.

The WCAG 2.0 guidelines for content to be perceivable, operable, understandable and robust therefore shall be evaluated against the full EPUB publication, not only to each content document within it.

More information about applying these guidelines to EPUB publications is available in the EPUB Accessibility Techniques^[2].

7.3.2.2 Applying the conformance criteria

When evaluating an EPUB publication, the WCAG 2.0 conformance criteria (ISO/IEC 40500) are applied as follows:

- When determining compliance with a conformance level, the EPUB publication as a whole shall meet the conformance requirements of the level claimed.
- Authors shall not use EPUB's fallback mechanisms to provide a conforming alternate version, as there is no reliable way for users to access such fallbacks. If fallbacks are used, both the primary content and its fallback(s) shall meet the requirements for the conformance level claimed. EPUB-specific fallback mechanisms include manifest fallbacks, bindings and content switching via the `epub:switch` element.
- When determining compliance with the "Full Pages" requirement (i.e. that parts of a page cannot be excluded when making a conformance claim), the entirety of each EPUB content document shall achieve the conformance level and every content document in the EPUB publication shall meet the stated conformance level.

7.4 EPUB requirements

7.4.1 Page navigation

7.4.1.1 Objective

Provide navigation to static page break locations.

7.4.1.2 Understanding this objective

Statically paginated content is still ubiquitous, as print continues to be the most consumed medium for books both among the general reading public and in educational settings. Print is not the only source of static pagination either: static page boundaries are also present in fixed-layout digital publications.

As a result, a non-visual reader in an environment where statically paginated content is used is disadvantaged relative to his or her peers by not being able to easily locate the same locations in the publication (e.g. if a teacher instructs students to all turn to a specific page).

The inclusion of page boundary locations helps bridge this disparity by ensuring that those using reflowable media are not disadvantaged by their choice.

Providing page navigation also helps in reflowable publications that do not have a statically paginated equivalent. The default pagination of these publications by reading systems is not static, since it changes depending on the viewport size and user's font settings. As a result, coordinating locations among users of the same EPUB publication can be complicated without static references.

7.4.1.3 Meeting this objective (standards.iteh.ai)

Authors should include page navigation in an EPUB publication whenever any of the following cases is true:

- the EPUB publication is identified as the dynamically paginated equivalent of a statically paginated publication (e.g. included in a print/digital bundle);
- the EPUB publication is offered as an alternative to a statically paginated publication in an environment where the use of both versions can be reasonably predicted (e.g. education);
- the EPUB publication and a statically paginated publication are generated from a workflow that allows the retention of page break locations across formats.

Authors may include page navigation in reflowable EPUB publications without statically paginated equivalents.

A conformant EPUB publication shall meet the following criteria when it includes page navigation:

- It shall provide a means of locating the page break locations.
- It may include page break markers.
- It shall identify the source of the page breaks.

In addition, if page numbers are read aloud in a synchronized text-audio playback of the content (e.g. EPUB 3 media overlays), authors shall identify the page numbers in the markup that controls the playback.

See page markers in EPUB Accessibility Techniques^[Z] for more information on the inclusion of page navigation in EPUB publications.