BS ISO 14289-2:2024

BSI Standards Publication

Document management applications — Electronic document file format enhancement for accessibility

Part 2: Use of ISO 32000-2 (PDF/UA-2)

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

National foreword

This British Standard is the UK implementation of ISO 14289-2:2024.

The UK participation in its preparation was entrusted to Technical Committee IDT/1, Document Management Applications.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2024
Published by BSI Standards Limited 2024

ISBN 978 0 539 17396 3

ICS 35.240.30; 37.100.99

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2024.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

International Standard

ISO 14289-2

First edition
2024-03

Document management applications — Electronic document file format enhancement for accessibility —

Part 2:
Use of ISO 32000-2 (PDF/UA-2)

Applications de la gestion de documents — Amélioration de format du fichier du document électronique pour l'accessibilité —

Partie 2: Utilisation de l'ISO 32000-2 (PDF/UA-2)

Reference number
ISO 14289-2:2024(en)

© ISO 2024

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

COPYRIGHT PROTECTED DOCUMENT

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

Contents

Page

Foreword ... **v**
Introduction ... **vi**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Notation ... **2**
5 Version identification ... **2**
6 Conformity requirements ... **3**
6.1 General ... 3
6.2 Conforming files ... 3
7 Accessible PDF ... **4**
7.1 Principles ... 4
7.2 Using other standards in the PDF/UA context ... 5
7.2.1 Accessibility standards ... 5
7.2.2 Declarations ... 5
7.2.3 Other PDF subset standards ... 5
8 File format requirements ... **5**
8.1 General ... 5
8.2 Logical structure ... 6
8.2.1 General ... 6
8.2.2 Real content ... 6
8.2.3 Logical content order ... 7
8.2.4 Structure types ... 7
8.2.5 Additional requirements for specific structure types ... 8
8.2.6 Structure attributes ... 18
8.3 Artifacts ... 19
8.3.1 General ... 19
8.3.2 Use of the Artifact structure element ... 19
8.4 Text representation for content ... 20
8.4.1 General ... 20
8.4.2 Unicode mapping in tagged PDF ... 20
8.4.3 Replacements and alternatives for text ... 20
8.4.4 Declaring natural language ... 20
8.4.5 Fonts ... 20
8.5 Real content without textual semantics ... 23
8.5.1 General ... 23
8.5.2 Use of ActualText ... 23
8.6 Text string objects ... 24
8.7 Optional content ... 24
8.8 Intra-document destinations ... 24
8.9 Annotations ... 24
8.9.1 General ... 24
8.9.2 Semantics and content ... 25
8.9.3 Order ... 29
8.9.4 Alternative descriptions ... 30
8.10 Forms ... 30
8.10.1 General ... 30
8.10.2 Context ... 31
8.10.3 Fields ... 32
8.10.4 Non-interactive forms ... 33
8.11 Metadata ... 34
8.11.1 General ... 34

© ISO 2024 – All rights reserved

AVA Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

8.11.2 Interactive aspects ... 34
8.12 Navigation ... 34
8.12.1 General ... 34
8.12.2 Outlines ... 34
8.12.3 Page labels ... 34
8.12.4 Article threads ... 34
8.13 Actions ... 34
8.13.1 General ... 34
8.13.2 ECMAScript actions ... 34
8.13.3 URI actions ... 35
8.14 Use of embedded files ... 35
8.14.1 Descriptions for embedded files ... 35
8.14.2 Use of associated files ... 35

Annex A (informative) **Example PDF Declaration** ... **36**

Annex B (informative) **Examples of attribute usage** ... **37**

Bibliography ... **42**

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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 Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Document file formats, EDMS systems and authenticity of information.*

A list of all parts in the ISO 14289 series can be found on the ISO website.

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.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

Introduction

The Portable Document Format (PDF) is a digital format for representing documents. PDF files can be created natively in PDF form, converted from other electronic formats, or digitized from paper. Businesses, governments, libraries, archives, and other institutions and individuals around the world use PDF to represent considerable bodies of important information. These PDF files should be made accessible to users with disabilities.

The primary purpose of the ISO 14289 series, known as PDF/UA, is to define how electronic files in the PDF format can be represented in a manner that allows them to be accessible. The accessibility of a PDF document depends on the inclusion of a variety of semantic information such as (but not limited to):

— machine-readable text presented in a declared language;

— appropriate semantic structures for elements such as paragraphs, lists, tables and headings;

— the organization of semantic structures in logical reading order;

— descriptive metadata, such as alternate descriptions for images.

This document is intended as a companion standard to be used in conjunction with ISO 32000-2 (PDF 2.0). Other standards can also be relevant for the purpose of achieving accessibility.

This document does not replace ISO 14289-1. ISO 14289-1 provides normative guidance based on ISO 32000-1; this document provides normative guidance based on ISO 32000-2.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

Document management applications — Electronic document file format enhancement for accessibility —

Part 2: Use of ISO 32000-2 (PDF/UA-2)

1 Scope

This document specifies how to use the Portable Document Format (PDF) specified in ISO 32000-2 to construct accessible digital documents using PDF technology.

This document does not specify:

— processes for converting paper or electronic documents to the PDF/UA format;

— technical design, user interface, implementation, or operational details of presentation;

— physical methods of storing these documents such as media and storage conditions;

— required computer hardware and/or operating systems;

— requirements specific to content (beyond facilitating programmatic access and textual representation);

— requirements applying to specific classes (e.g. invoices, reports, etc.) of documents.

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 14289-1, *Document management applications — Electronic document file format enhancement for accessibility — Part 1: Use of ISO 32000-1 (PDF/UA-1)*

ISO 32000-2:2020, *Document management — Portable document format — Part 2: PDF 2.0*

ISO/TS 32005, *Document management — Portable Document Format — PDF 1.7 and 2.0 structure namespace inclusion in ISO 32000-2*

W3C *Digital Publishing WAI-ARIA Module 1.0 (DPUB-ARIA), W3C Recommendation, 14 December* 2017, https://www.w3.org/TR/dpub-aria-1.0/

PDF Association, *PDF Declarations*, September 5, 2019, https://www.pdfa.org/resource/pdf-declarations/

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 14289-2:2024

3.1
assistive technology
AT
hardware or software added to, or incorporated within, a system that increases accessibility for an individual

[SOURCE: ISO 9241-171:2008, 3.5, modified — the example has been removed.]

3.2
PDF 1.7 namespace
standard structure namespace for PDF 1.7

[SOURCE: ISO/TS 32005:2023, 3.1]

3.3
PDF 2.0 namespace
standard structure namespace for PDF 2.0

[SOURCE: ISO/TS 32005:2023, 3.2]

3.4
real content
graphics objects, annotations and form fields representing material intentionally introduced by a document's author and necessary for an *assistive technology* (3.1) user to understand that document's content

Note 1 to entry: Text, images and paths are all examples of "graphics objects" in PDF files.

Note 2 to entry: The purpose of distinguishing between real and other content is to identify specific objects that the author intended for consumption by a human.

3.5
structure attribute
entry containing additional information contained within an attribute object

Note 1 to entry: This term is introduced in ISO 32000-2:2020, 14.7.6.

3.6
unique PDF 1.7 element
standard structure element whose type is defined solely in the *PDF 1.7 namespace* (3.2)

[SOURCE: ISO/TS 32005:2023, 3.5]

3.7
artifact marked content sequence
artifact defined solely by a marked content sequence, and not defined by a structure element

4 Notation

Token characters, text string characters, PDF operators, operands, PDF keywords, the names of keys in PDF dictionaries, and other predefined names are written according to the same convention in ISO 32000-2:2020, Clause 4, and as defined in ISO 32000-2:2020, 7.2 and 7.9.2 (token characters and text string characters, respectively).

5 Version identification

The PDF/UA version of a file shall be specified in the value of the **Metadata** entry in the document catalog dictionary using the PDF/UA identification schema defined in this clause.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

Table 1 defines the PDF/UA identifier using the namespace URI “http://www.aiim.org/pdfua/ns/id/”. The required schema namespace prefix is **pdfuaid**.

NOTE Namespace URIs are intended to be unique strings, and not expected to be resolved as URLs. This URI is retained for compatibility reasons.

Table 1 — PDF/UA identification schema

Property	Value type	Category	Description
pdfuaid:part	*Open choice of integer*	Internal	(Required) PDF/UA part identifier
pdfuaid:rev	*Open choice of integer*	Internal	(Required) Four-digit year of the date of publication or revision

The value of **pdfuaid:part** shall be *2* for PDF files conforming with this document.

The value of **pdfuaid:rev** shall be the four digits of the year of publication or revision.

The values of the **pdfuaid:part** and **pdfuaid:rev** properties do not determine conformity with this document by themselves; these criteria are specified in Clause 6.

6 Conformity requirements

6.1 General

The ISO 14289 series define a file format for representing electronic documents commonly known as “PDF/UA”. This document addresses the accessibility of PDF files conforming to ISO 32000-2 (PDF 2.0).

NOTE 1 The proper mechanism by which a file can presumptively identify itself as being a PDF/UA file of a given conformity level is described in Clause 5.

NOTE 2 Regardless of the version number present in the conforming file, conformity requirements specified in this document are based on ISO 32000-2 (PDF 2.0).

6.2 Conforming files

Beyond the requirements in Clause 8 and PDF/UA version identification as defined in Clause 5, conformity with this document requires that:

— a file shall adhere to all requirements of ISO 32000-2;

— a file shall adhere to all requirements of ISO/TS 32005;

— a file should not contain any feature that is deprecated in ISO 32000-2;

— a file may include any valid ISO 32000-2 feature that is not explicitly forbidden by this document;

— a file should not contain features described in specifications prior to ISO 32000-2 which are not explicitly defined or identified in ISO 32000-2 or this document;

— an embedded file, if necessary to the understanding of the document, shall be accessible according to objectively verifiable standards, e.g. WCAG 2.2.[5] If such an embedded file is a PDF file, it shall conform to the ISO 14289 series.

NOTE 1 Embedded files referenced from the containing file, for use by a human reader, can be necessary to the understanding of the document. See 8.14.

NOTE 2 Discouraging deprecated features aligns this document with ISO 19005-4.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

NOTE 3 Conformance with ISO/TS 32005 is required because, while ISO 32000-2 did not deprecate any structure types defined in PDF 1.7, ISO 32000-2:2020, Annex L provided containment rules only for structure types defined in the PDF 2.0 namespace. ISO/TS 32005 expands these containment rules to cover both the PDF 2.0 namespace and those elements unique to the PDF 1.7 namespace. By adhering to the requirements of ISO/TS 32005, it is possible to include both PDF 2.0 and PDF 1.7 structure types in files that conform to this document.

A file may declare its support for and conformity with PDF extensions to ISO 32000-2:2020 by use of an Extensions dictionary as specified in ISO 32000-2:2020, 7.12.

NOTE 4 Use of extensions can potentially negatively impact accessibility, compatibility and consistency of files when consumed by different processors.

Although other accessibility standards provide guidance on accessible content, this document deliberately avoids requirements related to content. Conformity to PDF/UA alone does not ensure that the content of a document is accessible. Cases not covered by PDF/UA include:

— where authors have used colour or contrast in an inaccessible manner;

— where ECMAScript present in the file can generate inaccessible results;

— where text content is potentially inaccessible to those with certain cognitive impairments;

— whether a particular content item is real content or artifact content.

NOTE 5 Requirements governing author's creative choices, (e.g. requirements for plain language), or the use of specific degrees of colour-contrast, are out of scope for this document. For such requirements, authors can refer to WCAG 2.2[5] and other applicable standards such as ISO 24495-1.

7 Accessible PDF

7.1 Principles

The degree to which document content can be described as accessible depends on the extent to which the semantic significance and context of each element of content is readily available to as many people and PDF processors as possible.

Accessible PDF files adhere to the RISE principles:

— Reliable: Files comply to the greatest possible extent with applicable specifications to facilitate robustness in processing across a wide range of use cases and software.

— Interoperable: Elements of content can be readily exchanged between computing systems without loss of semantics.

— Suitable: Suitability for the widest range of PDF processing applications and use-cases within the intended user population, taking account of special abilities, variations in capabilities, diversity in tasks, and differing environmental, economic and social circumstances.

— Equitable: Equitable solutions provide the same means of use for all users: identical whenever possible; equivalent when not.

NOTE These principles have been adapted from ISO 9241-171:2008 and are consistent with WCAG's POUR principles.[5]

In PDF, access to content is provided by the structures of the file, the software reading the file, and by the assistive technology consuming the software's output. The content of a document is considered accessible if real content as specified in ISO 32000-2:2020, 14.8.2.2 is represented with text or has a text-based equivalent presented in logical reading order with appropriate semantics. This document establishes how to apply these principles to a PDF file; it addresses the way content is encoded within a conforming PDF/UA file but does not regulate the document’s content itself, as seen in the following examples.

EXAMPLE 1 The maximum number of characters in a line of text is unregulated.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

EXAMPLE 2 Specific colours, colour-combinations, or contrast ratios are unregulated.

EXAMPLE 3 The choice to use plain language or other language is unregulated.

EXAMPLE 4 The size of fonts is unregulated.

7.2 Using other standards in the PDF/UA context

7.2.1 Accessibility standards

Diverse content requirements (e.g. the examples provided in 7.1) can be addressed with other specifications. 7.2.2 describes a means of claiming conformity with one or more such specifications.

7.2.2 Declarations

Many standards and regulations related to accessibility go beyond the requirements of PDF/UA. To facilitate claims of conformity with such standards, a PDF/UA conforming document may, in addition to the PDF/UA identification schema specified in Clause 5, include PDF Declarations. An example PDF Declaration is provided in Annex A.

EXAMPLE 1 A PDF Declaration can serve as the author's statement attesting that:

— all of a given file's content conforms to a specific accessibility standard (such as WCAG 2.2, Level AA);[5]

— all images and figures have been checked for appropriate alternate descriptions;

— the file has been certified to be accessible when using a specific PDF/UA processor.

Files in conformity with this document may leverage the PDF Declarations mechanism to include conformity claims for the entire file, for portions of the file (even specific objects), or both.

EXAMPLE 2 A PDF Declaration can serve as the author's statement attesting that an individual movie embedded in a PDF/UA file conforms to WCAG 2.2 Level AA.[5]

NOTE 1 It is expected that the file, portion, or object to which a PDF Declaration applies fully conforms to the standards to which they are declaring conformity.

NOTE 2 The PDF Association's list of PDF Declarations is fully extensible. Other PDF Declarations can be defined there and elsewhere.

An embedded file that is not PDF, if necessary to the understanding of the document, shall have an associated PDF Declaration in accordance with PDF Declarations, indicating its conformance to an appropriate accessibility standard. The PDF Declaration, as specified in PDF Declarations, shall be included through the Metadata entry in its file specification dictionary. Any embedded files may have PDF Declarations associated with them.

7.2.3 Other PDF subset standards

A file in conformity with this document may also conform to other ISO subset standards based on ISO 32000-2 (PDF 2.0) including ISO 19005-4 (PDF/A-4) and ISO 15930-9 (PDF/X-6).

8 File format requirements

8.1 General

Conformity with this document imposes requirements and restrictions beyond those specified in ISO 32000-2 and ISO/TS 32005. Clause 8 specifies these additional requirements and restrictions.

Beyond requirements for aspects of logical structure, consistent and accurate rendering is also important to meet the objectives of this document. Accordingly, 8.4.5 includes requirements matching those of the corresponding clause in ISO 19005-4 (PDF/A-4) and ISO 15930-9 (PDF/X-6).

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

8.2 Logical structure

8.2.1 General

Conformity with this document depends on the correct use of semantically appropriate structure elements enclosing the document's content, along with the structure elements' properties and structure attributes (additional information attached to the structure element).

8.2.2 Real content

All real content, as specified in ISO 32000-2:2020, 14.8.2.2, shall be enclosed within semantically appropriate structure elements using appropriate attributes according to the definitions for each structure type (name objects that identify the nature of the structure element), as defined in ISO 32000-2:2020, 14.8 and ISO/TS 32005.

NOTE 1 The concept of real content is defined in ISO 32000-2:2020, 14.8.2.2.1.

NOTE 2 ISO/TS 32005 defines the permitted PDF 1.7 structure elements and their inclusion rules in relation to the PDF 2.0 structure elements as defined in ISO 32000-2.

NOTE 3 Some structure elements with types such as **Div** and **Span** have no intrinsic semantics. **Div** is used to apply attributes to groups of structure elements and their descendants (including their respective contents), while **Span** is used to apply attributes to content.

NOTE 4 Whether attributes are appropriate depends on context and content properties (see 8.2.6).

EXAMPLE 1 The **Placement** attribute is appropriate on a **Figure** structure element whose content is inline in a paragraph.

EXAMPLE 2 The **Placement** attribute is optional when a **Figure** is placed in a block flow between two paragraphs.

EXAMPLE 3 The **Placement** attribute with a value of *Block* is appropriate for an **FENote** structure element placed in the block flow, whereas the **Placement** attribute with a value of *Inline* is appropriate for an **FENote** occurring inline contained within a **P** structure element.

EXAMPLE 4 The **TextDecorationType** attribute with a value of *LineThrough* is appropriate for a structure element enclosing struck text.

EXAMPLE 5 The **TextPosition** attribute with a value of *Sup* is appropriate for superscript characters.

Tagging shall reflect the semantics of the document's real content regardless of how the real content was laid out, paginated, or encoded by an authoring tool. Real content that is typically represented by a single semantic structure element with intrinsic semantics shall not be represented by several such structure elements of the same structure type.

EXAMPLE 6 A single table spanning two or more pages is correctly enclosed in a single **Table** structure element.

NOTE 5 It is incorrect to have a single table spanning two or more pages enclosed in multiple **Table** structure elements.

EXAMPLE 7 A single paragraph that spans two or more pages or columns is correctly enclosed within a single **P** structure element.

NOTE 6 It is incorrect to have multiple lines of a single paragraph enclosed within two or more **P** structure elements.

NOTE 7 How content is encoded within a content stream does not indicate the semantically appropriate structure element(s). Unlike ISO 14289-1, this document clearly specifies that the use of images or vector-based drawings does not always require a **Figure** structure element.

EXAMPLE 8 An image solely used to represent text with no illustrative purpose can be enclosed in a **Span** structure element with appropriate **ActualText**, as opposed to a **Figure** structure element.

Content that is not considered real content shall be an artifact in accordance with 8.3.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

8.2.3 Logical content order

The logical content order of structure elements and their contents according to ISO 32000-2:2020, 14.8.2.5 shall be semantically correct.

NOTE 1 This requirement is equivalent to WCAG 2.2, Success Criterion 1.3.2.[5]

NOTE 2 This document does not impose any understanding of what "semantically correct" logical content order means to any given author. Two common example approaches to ordering real content are to follow the order of the geographical page layout appropriate to the language or script (e.g. top-down, left-right in some languages), or to order the most important real content first. The author chooses the approach and thus establishes the intended logical content order for the document.

EXAMPLE 1 The correct logical content order, in a trifold brochure in English, with its title on the right-hand panel of a landscape page, would typically locate the title content before the rest of the brochure in the structure tree.

Artifact content intended to be consumed in a single unit shall be enclosed within a single **Artifact** structure element or artifact marked content sequence.

NOTE 3 **Artifact** structure elements and artifact marked content sequences are specified in ISO 32000-2:2020, 14.8.2.2.2.

EXAMPLE 2 Textual content in a page footer would usually be identified as a single artifact.

EXAMPLE 3 Page numbers.

If artifact content has a semantic order, the ordering of that content within the artifact shall match the semantic order.

In some artifacts, some of the content has semantic order and some does not. Some artifact content, particularly drawing content, does not have a semantic order.

EXAMPLE 4 Paths comprising table borders have no semantic order.

EXAMPLE 5 Page numbers with a background have a partial semantic order in that the order of the digits of the page number is semantic, but the relative order of the background to the page number is not.

8.2.4 Structure types

All structure elements shall belong to, or be role mapped to, at least one of the following namespaces specified in ISO 32000-2:2020, 14.8.6:

— the PDF 1.7 namespace;

— the PDF 2.0 namespace;

— the MathML namespace.

Other namespaces may be used by files in conformity with this document, but all structure elements in such namespaces shall have their structure types role mapped as described in this subclause. Such role mapping may be transitive through other namespaces.

A structure element with no explicit namespace may be present. Such a structure element shall have, after any role mapping, a structure type matching one of the unique PDF 1.7 element types and as restricted by this document.

NOTE 1 The default standard structure namespace in ISO 32000-2 is defined as the PDF 1.7 namespace.

NOTE 2 8.2.5.14 restricts the use of the **Note** structure type from the default standard structure namespace, and it is therefore not permitted despite being a unique PDF 1.7 element.

Within a given explicitly provided namespace, structure types shall not be role mapped to other structure types in the same namespace.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024

If custom structure types are role mapped, either directly or transitively, to standard structure types, they shall conform to the requirements for the standard structure types to which they are role mapped, including the containment rules specified in ISO/TS 32005:2023, Clause 7.

EXAMPLE A custom structure type mapped to a **Caption** standard structure type would incur all requirements for the **Caption** structure type, including its permitted location in the structure tree with respect to the structure element enclosing the captioned content and the element's permitted descendants.

8.2.5 Additional requirements for specific structure types

8.2.5.1 General

ISO 32000-2:2020, 14.8.4 and ISO/TS 32005:2023, 5.5 describe the full list of standard structure types for the PDF 2.0 namespace and PDF 1.7 namespace, respectively, and provide both requirements and examples of their use.

Usage of the standard structure types shall be in accordance with the requirements specified in both ISO 32000-2:2020, 14.7.4.2 and ISO/TS 32005 for the PDF 2.0 namespace and PDF 1.7 namespace.

8.2.5.2 to 8.2.5.33 provide additional requirements for specific structure types.

NOTE 8.2.5.2 to 8.2.5.33 appear in the order in which the structure types occur in ISO 32000-2. If a structure type does not appear in 8.2.5.2 to 8.2.5.33, then no additional requirements apply beyond those specified in ISO 32000-2 and ISO/TS 32005.

Requirements specific to structure attributes are addressed in 8.2.6.

8.2.5.2 Document and DocumentFragment

The structure tree root (defined in ISO 32000-2:2020, 14.7.2) shall contain a single **Document** structure element as its only child, as specified in ISO 32000-2:2020, Annex L and ISO/TS 32005. The namespace for that element shall be specified as the PDF 2.0 namespace, in accordance with ISO 32000-2:2020, 14.8.6.

NOTE 1 PDF/UA-2-conforming files cannot solely conform to PDF 1.7 because this subclause requires that the **Document** structure element is in the PDF 2.0 namespace.

When a document encloses content from another document that is either a logical document or logical document fragment as specified in ISO 32000-2:2020, 14.8.4.3, that content should be enclosed in either a **Document** structure element or a **DocumentFragment** structure element, respectively.

The **DocumentFragment** structure type shall only be used when the author's intent is to identify real content as originating in another document.

EXAMPLE Excerpts from documents included inside another document.

NOTE 2 **DocumentFragment** is inappropriate for content (e.g. some quotations) whose semantic intent does not rely on identification as an extract from another document.

NOTE 3 Because the content is a fragment of another document, it is possible that heading levels do not align with the overall document and would not be expected to impact subsequent heading levels. However, headings in that fragment would be self-consistent and not multiple subsets of another document, as described in ISO 32000-2:2020, 14.8.4.3.

8.2.5.3 Part

When a grouping of content has semantic purpose unrelated to the document's headings hierarchy, it should be enclosed within a **Part** structure element. ISO 32000-2:2020, Table 365 provides examples distinguishing the use of **Part** from the use of the **Sect** structure type.

© ISO 2024 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 14289-2:2024