Apache FOP Compliance Page

Table of contents

1 W3C XSL-FO 1.0 Standard

One of FOP's design goals is conformance to the W3C XSL-FO 1.0 standard, which specifies three levels of "conformance": basic, extended, and complete. Although FOP does not currently conform to any of these levels, it is nevertheless a useful work-in-progress for many applications. The information presented here demonstrates FOP's progress toward the goal of conformance, which progress consists of implementation of specific objects and properties in the standard. The information presented is useful not only to the developers as a sort of "to do" list, but also for setting proper expectations for users and potential users.

In the tables below, "yes" (green background) indicates conformance, "no" (red background) indicates a lack of conformance, "partial" (greyish background) indicates partial conformance, and "na" indicates that the item is "not applicable" to FOP usually because FOP supports only visual media.

1.1 XSL-FO Object Support

- **Declarations and Pagination and Layout Formatting Objects:** root, declarations, color-profile, page-sequence, layout-master-set, page-sequence-master, single-page-master-reference, repeatable-page-master-reference, repeatable-page-master-alternatives, conditional-page-master-reference, simple-page-master, region-body, region-before, region-after, region-start, region-end, flow, static-content, title
- **Block Formatting Objects:** block, block-container
- **Inline Formatting Objects:** bidi-override, character, initial-property-set, external-graphic, instream-foreign-object, inline, inline-container, leader, page-number, page-number-citation
- **Table Formatting Objects:** table-and-caption, table, table-column, table-caption, table-header, table-footer, table-body, table-row, table-cell
- **List Formatting Objects:** list-block, list-item, list-item-body, list-item-label
- **Link and Multi Formatting Objects:** basic-link, multi-switch, multi-case, multi-toggle, multi-properties, multi-property-set
- **Formatting Objects for Bookmarks:** bookmark-tree, bookmark, bookmark-title
- **Out-of-line Formatting Objects:** float, footnote, footnote-body
- **Other Formatting Objects:** wrapper, marker, retrieve-marker

1.2 XSL-FO Property Support

- **Common Accessibility Properties:** source-document, role
- **Common Absolute Position Properties:** absolute-position, top, right, bottom, left
- **Common Aural Properties:** azimuth, cue-after, cue-before, elevation, pause-after, pause-before, pitch, pitch-range, play-during, richness, speak, speak-header, speak-numeral, speak-punctuation, speech-rate, stress, voice-family, volume
- **Common Border, Padding, and Background Properties:** background-attachment, background-color, background-image, background-repeat, background-position-horizontal, background-position-vertical, border-before-color, border-before-style, border-before-width, border-after-color, border-after-style, border-after-width, border-start-color, border-start-style, border-start-width, border-end-color, border-end-style, border-end-width, border-top-color, border-top-style, border-top-width, border-bottom-color, border-bottom-style, border-bottom-width, border-left-color, border-left-

style, border-left-width, border-right-color, border-right-style, border-right-width, padding-before, padding-after, padding-start, padding-end, padding-top, padding-bottom, padding-left, padding-right

- **Common Font Properties:** font-family, font-selection-strategy, font-size, font-stretch, font-size-adjust, font-style, font-variant, font-weight
- **Common Hyphenation Properties:** country, language, script, hyphenate, hyphenation-character, hyphenation-push-character-count, hyphenation-remain-character-count
- **Common Margin Properties - Block:** margin-top, margin-bottom, margin-left, margin-right, space-before, space-after, start-indent, end-indent
- **Common Margin Properties - Inline:** space-end, space-start
- **Common Relative Position Properties:** relative-position
- **Area Alignment Properties:** alignment-adjust, alignment-baseline, baseline-shift, display-align, dominant-baseline, relative-align
- **Area Dimension Properties:** block-progression-dimension, content-height, content-width, height, inline-progression-dimension, max-height, max-width, min-height, min-width, scaling, scaling-method, width
- **Block and Line-related Properties:** hyphenation-keep, hyphenation-ladder-count, last-line-end-indent, line-height, line-height-shift-adjustment, line-stacking-strategy, linefeed-treatment, white-space-treatment, text-align, text-align-last, text-indent, white-space-collapse, wrap-option
- **Character Properties:** character, letter-spacing, suppress-at-line-break, text-decoration, text-shadow, text-transform, treat-as-word-space, word-spacing
- **Color-related Properties:** color, color-profile-name, rendering-intent
- **Float-related Properties:** clear, float, intrusion-displace
- **Keeps and Breaks Properties:** break-after, break-before, keep-together, keep-with-next, keep-with-previous, orphans, widows
- **Layout-related Properties:** clip, overflow, reference-orientation, span
- **Leader and Rule Properties:** leader-alignment, leader-pattern, leader-pattern-width, leader-length, rule-style, rule-thickness
- **Properties for Dynamic Effects Formatting Objects:** active-state, auto-restore, case-name, case-title, destination-placement-offset, external-destination, indicate-destination, internal-destination, show-destination, starting-state, switch-to, target-presentation-context, target-processing-context, target-stylesheet
- **Properties for Markers:** marker-class-name, retrieve-class-name, retrieve-position, retrieve-boundary
- **Properties for Number to String Conversion:** format, grouping-separator, grouping-size, letter-value
- **Pagination and Layout Properties:** blank-or-not-blank, column-count, column-gap, extent, flow-name, force-page-count, initial-page-number, master-name, master-reference, maximum-repeats, media-usage, odd-or-even, page-height, page-position, page-width, precedence, region-name
- **Table Properties:** border-after-precedence, border-before-precedence, border-collapse, border-end-precedence, border-separation, border-start-precedence, caption-side, column-number, column-width, empty-cells, ends-row, number-columns-repeated, number-columns-spanned, number-rows-spanned, starts-row, table-layout, table-omit-footer-at-break, table-omit-header-at-break
- **Writing-mode-related Properties:** direction, glyph-orientation-horizontal, glyph-orientation-vertical, text-altitude, text-depth, unicode-bidi, writing-mode

- **Miscellaneous Properties:** content-type, id, provisional-label-separation, provisional-distance-between-starts, ref-id, score-spaces, src, visibility, z-index
- **Shorthand Properties:** background, background-position, border, border-bottom, border-color, border-left, border-right, border-style, border-spacing, border-top, border-width, cue, font, margin, padding, page-break-after, page-break-before, page-break-inside, pause, position, size, vertical-align, white-space, xml:lang

1.3 XSL-FO Core Function Library Support

- **Number Functions:** floor, ceiling, round, min, max, abs
- **Color Functions:** rgb, rgb-icc, system-color
- **Font Functions:** system-font
- **Property Value Functions:** inherited-property-value, label-end, body-start, from-parent, from-nearest-specified-value, from-table-column, proportional-column-width, merge-property-values

2 XSL-FO Object Support Table (§6)

The following is a summary of FOP's current support for the standard XSL-FO objects.

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
Declarations and Pagination and Layout Formatting Objects (§6.4)							
root	Basic	§6.4.2	yes	yes	yes	yes	
declarations	Basic	§6.4.3	no	no	no	no	
color-profile	Extended	§6.4.4	no	no	no	no	
page-sequence	Basic	§6.4.5	yes	yes	yes	yes	
layout-master-set	Basic	§6.4.6	yes	yes	yes	yes	
page-sequence-master	Basic	§6.4.7	yes	yes	yes	yes	
single-page-master-reference	Basic	§6.4.8	yes	yes	yes	yes	
repeatable-page-master-reference	Basic	§6.4.9	yes	yes	yes	yes	
repeatable-page-master-alternatives	Extended	§6.4.10	yes	yes	yes	yes	

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
conditional-page-master-reference	Extended	§6.4.11	yes	yes	yes	yes	
simple-page-master	Basic	§6.4.12	yes	partial	partial	partial	• [0.94 and later] The page width may not change among pages of the same page-sequence unless a forced break is inserted.
region-body	Basic	§6.4.13	yes	yes	yes	yes	
region-before	Extended	§6.4.14	yes	yes	yes	yes	
region-after	Extended	§6.4.15	yes	yes	yes	yes	
region-start	Extended	§6.4.16	yes	yes	yes	yes	
region-end	Extended	§6.4.17	yes	yes	yes	yes	
flow	Basic	§6.4.18	yes	yes	yes	yes	
static-content	Extended	§6.4.19	yes	yes	yes	yes	
title	Extended	§6.4.20	no	no	no	no	
Block Formatting Objects (§6.5)							
block	Basic	§6.5.2	yes	yes	yes	yes	
block-container	Extended	§6.5.3	partial	partial	partial	partial	• [0.20.5] Only works as direct child of fo:flow. • [0.20.5] For

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
							absolute positioning, use 'position="absolute" 'absolute-position="absolute" is not implemented), and specify all four of "left", "top", "width" and "height" • [0.94 and later] No known restrictions.
Inline Formatting Objects (§6.6)							
bidi-override	Extended	§6.6.2	no	no	no	no	
character	Basic	§6.6.3	yes	yes	yes	yes	
initial-property-set	Extended	§6.6.4	no	no	no	no	
external-graphic	Basic	§6.6.5	yes	yes	yes	yes	
instream-foreign-object	Extended	§6.6.6	yes	yes	yes	yes	• Built-in support for SVG only, additional namespaces through optional extensions.
inline	Basic	§6.6.7	yes	yes	yes	yes	
inline-container	Extended	§6.6.8	no	no	no	no	
leader	Basic	§6.6.9	partial	yes	yes	yes	

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
page-number	Basic	§6.6.10	yes	yes	yes	yes	
page-number-citation	Extended	§6.6.11	partial	partial	partial	partial	• [0.20.5] Only works for table of contents without any problems. The case where the page number doesn't fit on a line isn't handled, and any text on the same line and after the page-number might not appear exactly where you want it to. • [0.94 and later] After the page number is known, no relayout is performed. The appearance may be

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
							suboptimal depending on the use case.
Table Formatting Objects (§6.7)							
table-and-caption	Basic	§6.7.2	no	no	no	no	
table	Basic	§6.7.3	partial	partial	partial	partial	• [0.20.5] Only border-collapse="separate" • [All] No support for auto layout yet
table-column	Basic	§6.7.4	partial	yes	yes	yes	• [0.20.5] You must explicitly specify column widths.
table-caption	Extended	§6.7.5	no	no	no	no	
table-header	Basic	§6.7.6	yes	yes	yes	yes	
table-footer	Extended	§6.7.7	yes	yes	yes	yes	
table-body	Basic	§6.7.8	yes	yes	yes	yes	
table-row	Basic	§6.7.9	yes	yes	yes	yes	
table-cell	Basic	§6.7.10	partial	yes	yes	yes	
List Formatting Objects (§6.8)							
list-block	Basic	§6.8.2	yes	yes	yes	yes	
list-item	Basic	§6.8.3	yes	yes	yes	yes	
list-item-body	Basic	§6.8.4	yes	yes	yes	yes	
list-item-label	Extended	§6.8.5	yes	yes	yes	yes	

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
Link and Multi Formatting Objects (§6.9)							
basic-link	Extended	§6.9.2	yes	yes	yes	yes	• both internal and external supported
multi-switch	Extended	§6.9.3	no	no	no	no	
multi-case	Basic	§6.9.4	no	no	no	no	
multi-toggle	Extended	§6.9.5	no	no	no	no	
multi-properties	Extended	§6.9.6	no	no	no	no	
multi-property-set	Extended	§6.9.7	no	no	no	no	
Formatting Objects for Bookmarks (§6.11 in XSL 1.1 WD)							
bookmark-tree (since XSL 1.1)	Extended	§6.11.1 in XSL 1.1 WD	no	yes	yes	yes	• [0.20.5] Uses the proprietary fox:outline extension.
bookmark (since XSL 1.1)	Extended	§6.11.2 in XSL 1.1 WD	no	yes	yes	yes	• [0.20.5] Uses the proprietary fox:outline extension.
bookmark-title (since XSL 1.1)	Extended	§6.11.3 in XSL 1.1 WD	no	partial	partial	partial	• [0.20.5] Uses the proprietary fox:outline extension. • [0.94 and later] color, font-style and font-weight are not supported, yet.

Object Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (stable)	develop-ment	
Out-of-line Formatting Objects (§6.10)							
float	Extended	§6.10.2	no	no	no	no	
footnote	Extended	§6.10.3	yes	partial	partial	partial	• [0.20.5] Footnotes sometimes overlap with the main content • [0.94 and later] Restrictions with multi-column documents.
footnote-body	Extended	§6.10.4	yes	yes	yes	yes	
Other Formatting Objects (§6.11)							
wrapper	Basic	§6.11.2	yes	partial	partial	partial	• [0.94 and later] Only works as expected with inline-level content.
marker	Extended	§6.11.3	yes	yes	yes	yes	
retrieve-marker	Extended	§6.11.4	yes	yes	yes	yes	

3 XSL-FO Property Support Table (§7)

The following is a summary of FOP's current support for the standard XSL-FO properties.

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop- ment	
Common Accessibility Properties (§7.4)							
source- document	Basic	§7.4.1	na	na	na	na	
role	Basic	§7.4.2	na	na	na	na	
Common Absolute Position Properties (§7.5)							
absolute- position	Complete	§7.5.1	no	yes	yes	yes	• [0.20.5] Use shorthand position="absolute" as a workaround. • [0.94 and later] No restrictions. The 0.20.5 work- around is not supported.
top	Extended	§7.5.2	yes	yes	yes	yes	
right	Extended	§7.5.3	yes	yes	yes	yes	
bottom	Extended	§7.5.4	yes	yes	yes	yes	
left	Extended	§7.5.5	yes	yes	yes	yes	
Common Aural Properties (§7.6)							
azimuth	Basic	§7.6.1	na	na	na	na	
cue-after	Basic	§7.6.2	na	na	na	na	
cue-before	Basic	§7.6.3	na	na	na	na	
elevation	Basic	§7.6.4	na	na	na	na	
pause-after	Basic	§7.6.5	na	na	na	na	
pause-before	Basic	§7.6.6	na	na	na	na	
pitch	Basic	§7.6.7	na	na	na	na	
pitch-range	Basic	§7.6.8	na	na	na	na	
play-during	Basic	§7.6.9	na	na	na	na	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
richness	Basic	§7.6.10	na	na	na	na	
speak	Basic	§7.6.11	na	na	na	na	
speak-header	Basic	§7.6.12	na	na	na	na	
speak-numeral	Basic	§7.6.13	na	na	na	na	
speak-punctuation	Basic	§7.6.14	na	na	na	na	
speech-rate	Basic	§7.6.15	na	na	na	na	
stress	Basic	§7.6.16	na	na	na	na	
voice-family	Basic	§7.6.17	na	na	na	na	
volume	Basic	§7.6.18	na	na	na	na	
Common Border, Padding, and Background Properties (§7.7)							
background-attachment	Extended	§7.7.1	no	no	no	no	
background-color	Basic	§7.7.2	yes	partial	yes	yes	• [0.94] not yet implemented for table-column, table-body, table-header and table-footer.
background-image	Extended	§7.7.3	yes	partial	yes	yes	• [0.94] not yet implemented for table-column, table-body, table-header and

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							table-footer.
background-repeat	Extended	§7.7.4	no	yes	yes	yes	
background-position-horizontal	Extended	§7.7.5	no	partial	partial	partial	[0.94 and later] Ignored when background-repeat set to "repeat" or "repeat-x"
background-position-vertical	Extended	§7.7.6	no	partial	partial	partial	[0.94 and later] Ignored when background-repeat set to "repeat" or "repeat-y"
border-before-color	Basic	§7.7.7	yes	yes	yes	yes	
border-before-style	Basic	§7.7.8	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-before-width	Basic	§7.7.9	yes	partial	yes	yes	• [0.94] .conditionali not supported on fo:table-cell
border-after-color	Basic	§7.7.10	yes	yes	yes	yes	
border-after-style	Basic	§7.7.11	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-after-width	Basic	§7.7.12	yes	partial	yes	yes	• [0.94] .conditionali not supported on fo:table-cell

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
border-start-color	Basic	§7.7.13	yes	yes	yes	yes	
border-start-style	Basic	§7.7.14	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-start-width	Basic	§7.7.15	yes	yes	yes	yes	
border-end-color	Basic	§7.7.16	yes	yes	yes	yes	
border-end-style	Basic	§7.7.17	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-end-width	Basic	§7.7.18	yes	yes	yes	yes	
border-top-color	Basic	§7.7.19	yes	yes	yes	yes	
border-top-style	Basic	§7.7.20	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-top-width	Basic	§7.7.21	yes	yes	yes	yes	
border-bottom-color	Basic	§7.7.22	yes	yes	yes	yes	
border-bottom-style	Basic	§7.7.23	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-bottom-width	Basic	§7.7.24	yes	yes	yes	yes	
border-left-color	Basic	§7.7.25	yes	yes	yes	yes	
border-left-style	Basic	§7.7.26	partial	yes	yes	yes	• [0.20.5] only "solid" works

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
border-left-width	Basic	§7.7.27	yes	yes	yes	yes	
border-right-color	Basic	§7.7.28	yes	yes	yes	yes	
border-right-style	Basic	§7.7.29	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-right-width	Basic	§7.7.30	yes	yes	yes	yes	
padding-before	Basic	§7.7.31	partial	yes	yes	yes	• [0.20.5] only one value allowed • [0.20.5] only implemented for blocks • [0.20.5] can't be used to make extra space (use indents + spaces instead) • [0.20.5] can be used to control how much the background-color extends beyond the content rectangle
padding-after	Basic	§7.7.32	partial	yes	yes	yes	• [0.20.5] same

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							limitations as padding-before
padding-start	Basic	§7.7.33	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
padding-end	Basic	§7.7.34	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
padding-top	Basic	§7.7.35	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
padding-bottom	Basic	§7.7.36	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
padding-left	Basic	§7.7.37	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
padding-right	Basic	§7.7.38	partial	yes	yes	yes	• [0.20.5] same limitations as padding-before
Common Font Properties (§7.8)							

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
font-family	Basic	§7.8.2	partial	partial	partial	partial	• [0.20.5] font-family lists are not supported, use a single font-family name • [0.94 and later] font-family lists are allowed but glyph based font selection is not supported
font-selection-strategy	Complete	§7.8.3	no	no	no	no	
font-size	Basic	§7.8.4	partial	yes	yes	yes	• [0.20.5] "smaller" and "larger" not implemented
font-stretch	Extended	§7.8.5	no	no	no	no	
font-size-adjust	Extended	§7.8.6	no	no	no	no	
font-style	Basic	§7.8.7	partial	yes	yes	yes	• [0.20.5] "normal" is not supported
font-variant	Basic	§7.8.8	yes	no	no	no	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
font-weight	Basic	§7.8.9	partial	partial	partial	partial	• [0.20.5] "normal", "bolder" and "lighter" are not supported • [0.94 and later] TODO <relative> font weights
Common Hyphenation Properties (§7.9)							
country	Extended	§7.9.1	yes	yes	yes	yes	• [0.94 and earlier] Only used for controlling hyphenation. • [trunk] For PDF output: Only 2-letter codes from ISO 3166 are supported properly to identify the natural language!
language	Extended	§7.9.2	yes	yes	yes	yes	• [0.94 and earlier] Only used for controlling hyphenation.

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							• [trunk] For PDF output: Only 2-letter codes from ISO 639 are supported properly to identify the natural language!
script	Extended	§7.9.3	no	no	no	no	
hyphenate	Extended	§7.9.4	yes	yes	yes	yes	
hyphenation-character	Extended	§7.9.5	yes	yes	yes	yes	
hyphenation-push-character-count	Extended	§7.9.6	yes	yes	yes	yes	
hyphenation-remain-character-count	Extended	§7.9.7	yes	yes	yes	yes	
Common Margin Properties - Block (§7.10)							
margin-top	Basic	§7.10.1	partial	yes	yes	yes	• [0.20.5] only on pages and regions
margin-bottom	Basic	§7.10.2	partial	yes	yes	yes	• [0.20.5] only on pages and regions
margin-left	Basic	§7.10.3	partial	yes	yes	yes	• [0.20.5] only on pages

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							and regions
margin-right	Basic	§7.10.4	partial	yes	yes	yes	• [0.20.5] only on pages and regions
space-before	Basic	§7.10.5	partial	partial	partial	partial	• [0.20.5] space-before.optimum supported • [0.94 and later] Space adjustment may not fully work everywhere, yet.
space-after	Basic	§7.10.6	partial	partial	partial	partial	• [0.20.5] space-after.optimum supported • [0.94 and later] Space adjustment may not fully work everywhere, yet.
start-indent	Basic	§7.10.7	yes	yes	yes	yes	
end-indent	Basic	§7.10.8	yes	yes	yes	yes	
Common Margin Properties - Inline (§7.11)							
space-end	Basic	§7.11.1	no	no	no	no	
space-start	Basic	§7.11.2	no	no	no	no	
Common Relative Position Properties (§7.12)							

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
relative-position	Extended	§7.12.1	no	no	no	no	
Area Alignment Properties (§7.13)							
alignment-adjust	Basic	§7.13.1	no	yes	yes	yes	
alignment-baseline	Basic	§7.13.2	no	yes	yes	yes	
baseline-shift	Basic	§7.13.3	partial	yes	yes	yes	• [0.20.5] Only values "super" and "sub" have been implemented.
display-align	Extended	§7.13.4	partial	partial	partial	partial	• [0.20.5] Implemented only for table-cell and block-container. • [0.20.5] For table-cell, the "height" attribute must be set for the parent table-row; setting the height of the table or the table-cell results in vertical

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							centering having no effect. • [0.94 and later] TODO Check e-g, i-f-o.
dominant-baseline	Basic	§7.13.5	no	yes	yes	yes	
relative-align	Extended	§7.13.6	no	no	no	no	
Area Dimension Properties (§7.14)							
block-progression-dimension	Basic	§7.14.1	no	yes	yes	yes	
content-height	Extended	§7.14.2	no	yes	yes	yes	
content-width	Extended	§7.14.3	no	yes	yes	yes	
height	Basic	§7.14.4	yes	yes	yes	yes	
inline-progression-dimension	Basic	§7.14.5	no	yes	yes	yes	
max-height	Complete	§7.14.6	no	no	no	no	
max-width	Complete	§7.14.7	no	no	no	no	
min-height	Complete	§7.14.8	no	no	no	no	
min-width	Complete	§7.14.9	no	no	no	no	
scaling	Extended	§7.14.10	no	yes	yes	yes	
scaling-method	Extended	§7.14.11	no	no	no	no	
width	Basic	§7.14.12	yes	yes	yes	yes	
Block and Line-related Properties (§7.15)							
hyphenation-keep	Extended	§7.15.1	no	no	no	no	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
hyphenation-ladder-count	Extended	§7.15.2	no	yes	yes	yes	
last-line-end-indent	Extended	§7.15.3	no	yes	yes	yes	
line-height	Basic	§7.15.4	yes	yes	yes	yes	
line-height-shift-adjustment	Extended	§7.15.5	no	yes	yes	yes	
line-stacking-strategy	Basic	§7.15.6	no	partial	partial	partial	• [0.94 and later] value "line-height" not supported
linefeed-treatment	Extended	§7.15.7	no	yes	yes	yes	
white-space-treatment	Extended	§7.15.8	no	partial	partial	partial	• [0.94 and later] inline elements may interfere with correct handling of this property in some cases
text-align	Basic	§7.15.9	partial	partial	partial	partial	• Only start, end, center and justify are supported
text-align-last	Extended	§7.15.10	partial	partial	partial	partial	• Only start,

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							end, center and justify are supported
text-indent	Basic	§7.15.11	yes	yes	yes	yes	
white-space-collapse	Extended	§7.15.12	yes	yes	yes	yes	
wrap-option	Basic	§7.15.13	yes	partial	partial	partial	• [0.94 and later] Only supported on fo:block.
Character Properties (§7.16)							
character	Basic	§7.16.1	yes	yes	yes	yes	
letter-spacing	Extended	§7.16.2	yes	yes	yes	yes	
suppress-at-line-break	Extended	§7.16.3	no	no	no	no	
text-decoration	Extended	§7.16.4	yes	yes	yes	yes	
text-shadow	Extended	§7.16.5	no	no	no	no	
text-transform	Extended	§7.16.6	no	yes	yes	yes	
treat-as-word-space	Extended	§7.16.7	no	no	no	no	
word-spacing	Extended	§7.16.8	no	yes	yes	yes	
Color-related Properties (§7.17)							
color	Basic	§7.17.1	yes	yes	yes	yes	
color-profile-name	Extended	§7.17.2	no	no	no	no	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
rendering-intent	Extended	§7.17.3	no	no	no	no	
Float-related Properties (§7.18)							
clear	Extended	§7.18.1	no	no	no	no	
float	Extended	§7.18.2	no	no	no	no	
intrusion-displace	Extended	§7.18.3	no	no	no	no	
Keeps and Breaks Properties (§7.19)							
break-after	Basic	§7.19.1	yes	partial	yes	yes	• [0.94] Doesn't work on the last row of a table
break-before	Basic	§7.19.2	yes	partial	yes	yes	• [0.94] Doesn't work on the first row of a table • [0.94] When set on the first child of an fo:table-cell, the border-before is still painted on the previous page
keep-together	Extended	§7.19.3	partial	partial	partial	partial	• [0.20.5] works only in table rows • [0.94 and

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							later] \<integer\> values are not supported.
keep-with-next	Basic	§7.19.4	partial	partial	partial	partial	• [0.20.5] works only in table rows • [0.94 and later] works on all implemented block-level FOs, but not on inline-level FOs. • [0.94 and later] \<integer\> values are not supported.
keep-with-previous	Basic	§7.19.5	partial	partial	partial	partial	• [0.20.5] works only in table rows • [0.94] works on all implemented FOs, except list- and table-related and inline-

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							level FOs. • [0.95] works on all implemented FOs, except list- and inline-level FOs. • [0.94 and later] \<integer\> values are not supported.
orphans	Basic	§7.19.6	no	yes	yes	yes	
widows	Basic	§7.19.7	no	yes	yes	yes	
Layout-related Properties (§7.20)							
clip	Extended	§7.20.1	no	no	no	no	
overflow	Basic	§7.20.2	no	yes	yes	yes	
reference-orientation	Extended	§7.20.3	no	yes	yes	yes	• [0.20.5] Workaround for page-orientation (portrait vs. landscape) is to swap the page-width and page-height properties. • [0.20.5] Workaround for block-

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							container is to use SVG.
span	Extended	§7.20.4	yes	yes	yes	yes	
Leader and Rule Properties (§7.21)							
leader-alignment	Extended	§7.21.1	partial	no	no	no	• [0.20.5] not value "page" • [0.94 and later] Not supported
leader-pattern	Basic	§7.21.2	partial	yes	yes	yes	• [0.20.5] not value "use-content" • [0.94 and later] Value "use-content" does not work in all circumstances.
leader-pattern-width	Extended	§7.21.3	yes	yes	yes	yes	
leader-length	Basic	§7.21.4	partial	yes	yes	yes	• [0.20.5] leader-length.minimum is not used at all
rule-style	Basic	§7.21.5	yes	yes	yes	yes	
rule-thickness	Basic	§7.21.6	yes	yes	yes	yes	
Properties for Dynamic Effects Formatting Objects (§7.22)							

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
active-state	Extended	§7.22.1	no	no	no	no	
auto-restore	Extended	§7.22.2	no	no	no	no	
case-name	Extended	§7.22.3	no	no	no	no	
case-title	Extended	§7.22.4	no	no	no	no	
destination-placement-offset	Extended	§7.22.5	no	no	no	no	
external-destination	Basic	§7.22.6	yes	yes	yes	yes	
indicate-destination	Extended	§7.22.7	no	no	no	no	
internal-destination	Extended	§7.22.8	yes	yes	yes	yes	
show-destination	Extended	§7.22.9	no	no	no	no	
starting-state	Extended	§7.22.10	no	partial	partial	partial	• [0.94 and later] support for starting-state on fo:bookmark
switch-to	Extended	§7.22.11	no	no	no	no	
target-presentation-context	Extended	§7.22.12	no	no	no	no	
target-processing-context	Extended	§7.22.13	no	no	no	no	
target-stylesheet	Extended	§7.22.14	no	no	no	no	
Properties for Markers (§7.23)							
marker-class-name	Extended	§7.23.1	no	yes	yes	yes	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
retrieve-class-name	Extended	§7.23.2	no	yes	yes	yes	
retrieve-position	Extended	§7.23.3	no	yes	yes	yes	
retrieve-boundary	Extended	§7.23.4	no	yes	yes	yes	
Properties for Number to String Conversion (§7.24)							
format	Basic	§7.24.1	no	yes	yes	yes	
grouping-separator	Extended	§7.24.2	no	no	no	no	
grouping-size	Extended	§7.24.3	no	no	no	no	
letter-value	Basic	§7.24.4	no	no	no	no	
Pagination and Layout Properties (§7.25)							
blank-or-not-blank	Extended	§7.25.1	yes	yes	yes	yes	
column-count	Extended	§7.25.2	yes	yes	yes	yes	
column-gap	Extended	§7.25.3	yes	yes	yes	yes	
extent	Extended	§7.25.4	yes	yes	yes	yes	
flow-name	Basic	§7.25.5	yes	yes	yes	yes	
force-page-count	Extended	§7.25.6	no	yes	yes	yes	
initial-page-number	Basic	§7.25.7	yes	yes	yes	yes	
master-name	Basic	§7.25.8	yes	yes	yes	yes	
master-reference	Basic	§7.25.9	yes	yes	yes	yes	
maximum-repeats	Extended	§7.25.10	yes	yes	yes	yes	
media-usage	Extended	§7.25.11	no	no	no	no	
odd-or-even	Extended	§7.25.12	yes	yes	yes	yes	
page-height	Basic	§7.25.13	yes	yes	yes	yes	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
page-position	Extended	§7.25.14	partial	yes	yes	yes	• [0.20.5] "last" isn't implemented!
page-width	Basic	§7.25.15	yes	yes	yes	yes	
precedence	Extended	§7.25.16	no	yes	yes	yes	
region-name	Basic	§7.25.17	yes	yes	yes	yes	
Table Properties (§7.26)							
border-after-precedence	Basic	§7.26.1	no	no	no	no	
border-before-precedence	Basic	§7.26.2	no	no	no	no	
border-collapse	Extended	§7.26.3	partial	yes	yes	yes	• [0.94 and later] Some small limitations
border-end-precedence	Basic	§7.26.4	no	no	no	no	
border-separation	Extended	§7.26.5	no	yes	yes	yes	
border-start-precedence	Basic	§7.26.6	no	no	no	no	
caption-side	Complete	§7.26.7	no	no	no	no	
column-number	Basic	§7.26.8	no	yes	yes	yes	
column-width	Basic	§7.26.9	partial	yes	yes	yes	• [0.20.5] "percentage" not implemented. Workaround is to use the XSL-FO "proportional-column-

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop- ment	
							width" function.
empty-cells	Extended	§7.26.10	no	no	no	no	
ends-row	Extended	§7.26.11	no	yes	yes	yes	
number- columns- repeated	Basic	§7.26.12	no	yes	yes	yes	
number- columns- spanned	Basic	§7.26.13	yes	yes	yes	yes	
number- rows- spanned	Basic	§7.26.14	yes	yes	yes	yes	
starts-row	Extended	§7.26.15	no	yes	yes	yes	
table-layout	Extended	§7.26.16	no	no	no	no	
table-omit- footer-at- break	Extended	§7.26.17	yes	yes	yes	yes	
table-omit- header-at- break	Extended	§7.26.18	yes	yes	yes	yes	
Writing-mode-related Properties (§7.27)							
direction	Basic	§7.27.1	no	no	no	no	
glyph- orientation- horizontal	Extended	§7.27.2	no	no	no	no	
glyph- orientation- vertical	Extended	§7.27.3	no	no	no	no	
text-altitude	Extended	§7.27.4	no	no	no	no	
text-depth	Extended	§7.27.5	no	no	no	no	
unicode-bidi	Extended	§7.27.6	no	no	no	no	
writing- mode	Basic	§7.27.7	no	no	no	no	
Miscellaneous Properties (§7.28)							

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
content-type	Extended	§7.28.1	no	no	no	no	
id	Basic	§7.28.2	yes	partial	partial	partial	• [0.94 and later] IDs on table-header, table-footer, table-body, table-row, table-and-caption, table-caption, inline-container and bidi-override are not available, yet.
provisional-label-separation	Basic	§7.28.3	yes	yes	yes	yes	
provisional-distance-between-starts	Basic	§7.28.4	yes	yes	yes	yes	
ref-id	Extended	§7.28.5	yes	yes	yes	yes	
score-spaces	Extended	§7.28.6	no	no	no	no	
src	Basic	§7.28.7	yes	yes	yes	yes	
visibility	Extended	§7.28.8	no	no	no	no	
z-index	Extended	§7.28.9	no	no	no	no	
Shorthand Properties (§7.29)							
background	Complete	§7.29.1	no	no	no	no	

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
background-position	Complete	§7.29.2	no	yes	yes	yes	
border	Complete	§7.29.3	no	yes	yes	yes	
border-bottom	Complete	§7.29.4	yes	yes	yes	yes	
border-color	Complete	§7.29.5	partial	yes	yes	yes	• [0.20.5] only one value allowed
border-left	Complete	§7.29.6	yes	yes	yes	yes	
border-right	Complete	§7.29.7	yes	yes	yes	yes	
border-style	Complete	§7.29.8	partial	yes	yes	yes	• [0.20.5] only "solid" works
border-spacing	Complete	§7.29.9	no	yes	yes	yes	
border-top	Complete	§7.29.10	yes	yes	yes	yes	
border-width	Complete	§7.29.11	yes	yes	yes	yes	
cue	Complete	§7.29.12	na	na	na	na	
font	Complete	§7.29.13	no	partial	partial	partial	• [0.94 and later] Enum values other than "inherit" not yet supported.
margin	Complete	§7.29.14	partial	yes	yes	yes	• [0.20.5] only on pages and regions
padding	Complete	§7.29.15	partial	yes	yes	yes	• [0.20.5] only one value allowed

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							• [0.20.5] only implemented for blocks • [0.20.5] can't be used to make extra space (use indents + spaces instead) • [0.20.5] can be used to control how much the background-color extends beyond the content rectangle
page-break-after	Complete	§7.29.16	no	yes	yes	yes	
page-break-before	Complete	§7.29.17	no	yes	yes	yes	
page-break-inside	Complete	§7.29.18	no	yes	yes	yes	
pause	Complete	§7.29.19	na	na	na	na	
position	Complete	§7.29.20	partial	yes	yes	yes	• [0.20.5] "inherit" not handled
size	Complete	§7.29.21	no	no	no	no	
vertical-align	Complete	§7.29.22	partial	partial	partial	partial	• [0.20.5] Only

Property Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
							works as a shorthand for baseline-shift property. • [0.94 and later] Percentages are not supported, yet.
white-space	Complete	§7.29.23	no	yes	yes	yes	
xml:lang	Complete	§7.29.24	no	yes	yes	yes	[0.95] Very basic parsing; no validation of the specified value.

4 XSL-FO Core Function Library Support Table (§5.10)

The following is a summary of FOP's current support for the XSL-FO Core Function Library.

Function Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
Number Functions (§5.10.1)							
floor	Basic	§5.10.1	yes	yes	yes	yes	
ceiling	Basic	§5.10.1	yes	yes	yes	yes	
round	Basic	§5.10.1	yes	yes	yes	yes	
min	Basic	§5.10.1	yes	yes	yes	yes	
max	Basic	§5.10.1	yes	yes	yes	yes	
abs	Basic	§5.10.1	yes	yes	yes	yes	
Color Functions (§5.10.2)							
rgb	Basic	§5.10.2	yes	yes	yes	yes	

Function Name	XSL-FO Conformance Level	Citation	Support in FOP				Comments
			0.20.5 (ancient)	0.94 (stable)	0.95 (beta)	develop-ment	
rgb-icc	Basic	§5.10.2	no	yes	yes	yes	
system-color	Basic	§5.10.2	no	yes	yes	yes	
Font Functions (§5.10.3)							
system-font	Basic	§5.10.3	no	no	no	no	
Property Value Functions (§5.10.4)							
inherited-property-value	Basic	§5.10.4	yes	yes	yes	yes	
label-end	Basic	§5.10.4	yes	yes	yes	yes	
body-start	Basic	§5.10.4	yes	yes	yes	yes	
from-parent	Basic	§5.10.4	yes	yes	yes	yes	
from-nearest-specified-value	Basic	§5.10.4	yes	yes	yes	yes	
from-table-column	Basic	§5.10.4	no	yes	yes	yes	
proportional-column-width	Basic	§5.10.4	yes	yes	yes	yes	
merge-property-values	Basic	§5.10.4	no	no	no	no	