CSS Print Profile

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Retired NOTE
The CSS Working Group has discontinued work on this document.

Abstract

This specification defines a subset of *CSS Level 2 Revision 1* [CSS21] and *CSS Paged Media Level 3* [PAGEMEDIA] for printing to low-cost devices. It is designed for printing in situations where it is not feasible or desirable to install a printer-specific driver, and for situations were some variability in the output is acceptable.

This profile is designed to work in conjunction with *XHTML-Print* [XHTMLPRINT] and defines a minimum level of conformance as well as an extension set that provides stronger layout control for the printing of mixed text and images, tables and image collections.

This profile is obsolete. Please see the latest CSS Snapshot for the specifications that make up CSS.

Status of this Document

knowledge of a patent which the individual believes contains Essential Claim(s) must disclose the information in accordance with section 6 of the W3C Patent Policy.

Relative to the previous Candidate Recommendation, this version adds two new features ('object-fit' and 'object-position'), synchronizes this profile with changes to XHTML-Print, removes redundancies with CSS Paged Media Level 3 and makes miscellaneous clarifications and editorial improvements.

Relative to the previous Working Draft, this version updates the names and behavior of 'object-fit' and 'object-position' to match the Candidate Recommendation of CSS Images and Replaced Content Level 3 (and adds a mapping allowance), and updates references to CSS Paged Media Level 3 and CSS2.1.

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1. Overview

All sections of this document are normative unless noted as informative.

This document specifies a profile of the *Cascading Style Sheets, level 2, revision 1* (CSS 2.1) specification [CSS21] along with the *CSS Paged Media Level 3* [PAGEMEDIA] and *CSS Images Level 3* [IMAGES]

CSS 2.1 specifies how developers can author style sheets for presenting documents across multiple devices and media types. While this is very important, it is also important that authors have an understanding of what features are supported on these different devices. Likewise, it is important that similar devices operate in a similar manner. Otherwise, authors could need to develop style sheets for each version of each device -- raising the cost of content development and decreasing interoperability.

The CSS Print Profile specifies a conformance profile for printing in environments where it is not feasible or desirable to use a printer-specific driver. An example of such an environment is printing to low-cost printers from mobile phones. The profile identifies a minimum set of properties, values, selectors, and cascading rules to support these use scenarios. This profile was designed in conjunction with *XHTML-Print* ([XHTMLPRINT]) for low cost printers that may not have a full-page buffer and that generally print from top-to-bottom.

This profile also contains an enhanced layout extension set which supports more exacting page layouts and orientations. These features provide sufficient richness to print, for example, photo album pages from a digital still camera or print-targeted television content.

Conformance to this profile means that a user agent supports, at a minimum, the features defined in this specification. This subject is addressed in Section 2, Conformance below.

2. Conformance

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY" and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 (see [RFC2119]). However, for readability, these words do not appear in all uppercase letters in this specification.

The primary role of a profile is to define a subset of features that provides a minimal guarantee of interoperability. In the case of the CSS Print Profile, this guarantee is that a conforming user agent will support the features defined in this specification following the CSS 2.1 conformance clause ([CSS21] Section 3.2), recast and summarized below:

1. A CSS Print Profile conforming user agent (PP-UA or more simply "printer") *shall* support the *all* and *print* CSS 2.1 media types. A printer *may* support other CSS 2.1 media types, as well.
2. For each source document, a printer *shall* attempt to retrieve all associated style sheets that are appropriate for the supported media types. A failure to retrieve a style sheet due to problems such as a loss of network connection *should not* stop the printer from processing the document.
3. A printer *shall* parse the style sheets according to this specification. In particular, the printer *shall* recognize all CSS Print Profile at-rules, blocks, declarations, and selectors. If a printer encounters a property that applies for a supported media type, the printer *shall* parse the value according to the property definition. This means that the printer *shall* accept all valid values and *may* ignore declarations with invalid values. A printer *shall* ignore rules that apply to unsupported media types.
4. For each element in a document tree, the printer *shall* assign a value for every applicable property according to the property's definition and the rules of cascading and inheritance.
5. If the source document comes with alternate style sheets (such as with the "alternate" keyword in HTML 4.01 [HTML4]), the printer *may* ignore the style sheet or treat it in some implementation dependent manner.

As with CSS 2.1, there are qualifications to this conformance clause:

1. Values *may* be approximated when *required* by the printer.
2. The inability of a printer to implement part of this specification due to the limitations of a particular device (e.g., a printer cannot render colors on a monochrome page) *shall not* imply non-conformance.

It is *recommended* that authors use this conformance profile to take advantage of forward compatibility. Authors *may* use style properties with an understanding that the cascading rules are processed correctly and that unknown properties and values are ignored. For example:

```
body {
  background-position: center center;
  background-position: 45% 55%;
}
```

A printer that can accept percentage values for the background-position property will process the first background-position declaration and then replace that value with the second background-position declaration. A printer that cannot accept percentage values will process the first background-position declaration and ignore the second background-position declaration.

2.1. Enhanced Layout Extension Conformance

Some print applications require a more exacting page layout than is available from a minimally conforming printer (*e.g.,* photo album pages or pages from a digital TV). The Enhanced Layout Extension increases the number of properties that a conforming printer *must* support and thereby the requirements of its memory and performance capabilities. These added CSS constructs are indicated with a "*must*" or an increased range of values, in the CSS Print-Enhanced columns below.

Printers supporting the Enhanced Layout Extension *may* also support an *optional*, discoverable (via some means outside the scope of this document) Enhanced Layout Extension indicator.

3. Selectors

In CSS 2.1, pattern matching rules determine which style rules apply to elements in the document tree [CSS21].

Consideration is given to low-cost printers that might not be able to store all the attributes of each element, but only keep the few that are necessary. Therefore, only Enhanced Layout Extension conforming printers *must* support attribute selectors.

The following table summarizes CSS Print Profile selector syntax. In addition to the selectors marked "*must*" in the CSS Print or CSS Print-Enhanced columns, the CSS Print Profile includes the CSS 2.1 grouping mechanism (See [CSS21] Section 5.2.1).

Pattern	Meaning	Selector type	CSS Print	CSS Print-Enhanced
*	Matches any element	Universal selector	*must*	*must*
E	Matches any E element (i.e., any element of type E)	Type selectors	*must*	*must*
E F	Matches any F element that is a descendant of an E element	Descendant selectors	*must*	*must*
E > F	Matches any F element that is a child of an element E	Child selectors	*must*	*must*
E[foo]	Matches any E element with the "foo" attribute set (whatever the value).	Attribute selectors	*may*	*must*
E[foo="warning"]	Matches any E element whose "foo" attribute value is exactly equal to "warning".	Attribute selectors	*may*	*must*
E[foo~="warning"]	Matches any E element whose "foo" attribute value is a list of space-separated values, one of which is exactly equal to "warning".	Attribute selectors	*may*	*must*
E.classid	The same as E[class~=classid]	Class selectors	*must*	*must*
E#myid	Matches any E element id equal to "myid".	ID selectors	*must*	*must*
@page :first	Specifies style for the first page of a document	Page pseudo-classes	*must*	*must*

3.1 At-rules

The following table summarizes CSS Print Profile at-rule syntax.

at-rule	Function	CSS Print	CSS Print-Enhanced
@import	Imports an external style sheet.	*may*	*must*
@charset	Defines character set for the style sheet.	*must*	*must*
@media	Groups a set of style rules to apply	*must*	*must*

		only to one or more particular media.		
@page	Defines a (optionally named) page formatting context.	*must*	*must*
@bottom-left-corner, @bottom-left, @bottom-center, @bottom-right, @bottom-right-corner	Defines areas on the page within the running footer in the page's bottom margin [PAGEMEDIA]	*must*	*must*
@top-left-corner, @top-left, @top-center, @top-right, @top-right-corner	Defines areas on the page within the running header in the page's top margin [PAGEMEDIA]	*must*	*must*

4. Properties

As with selectors, the properties a printer *must* support are similar to those that a mobile device *must* support ([CSSMOBILE], Properties) with the exception of those that don't apply to the page or are specifically targeted at media other than the page.

In some cases the allowable values for a printer are a subset of the full range of values to match the reduced memory and performance capabilities of a low-cost printer.

The following table summarizes CSS Print Profile properties and property values. Refer to *CSS Paged Media Level 3* [PAGEMEDIA] for the definition of the 'size' properties, *CSS Image Values and Replaced Content Level 3* [IMAGES] for the definition of the 'image-orientation', 'object-fit', and 'object-position' properties, and CSS 2.1 [CSS21] for the definition of all other properties and values.

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'background'	background-color | inherit	['background-color' || 'background-image' || 'background-repeat' || 'background-position'] | inherit	['background-color' || 'background-image' || 'background-repeat' || 'background-attachment' || 'background-position'] | inherit	see individual properties
'background-color'	*must*	*must*	<color> | transparent | inherit	transparent
'background-image'	*may*	*must*	<uri> | none | inherit	none
'background-position'	*may*	*must*	[[<percentage> | <length>] {1,2} | [[top | center | bottom] || [left | center | right]]] | inherit	0% 0%

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'background-repeat'	*may*	*must*	repeat | repeat-x | repeat-y | no-repeat | inherit	repeat
'border'	*may*	*must*	[<border-width> || <border-style> || [<color> | transparent]] | inherit	see individual properties
'border-collapse'	*may*	*must*	collapse | separate | inherit	collapse
'border-color'	*may*	*must*	[<color> | transparent] {1,4} | inherit	see individual properties
'border-spacing'	*may*	*must*	<length> <length>? | inherit	0
'border-style'	*may*	none, solid	<border-style> {1,4} | inherit	see individual properties
'border-top' 'border-right' 'border-bottom' 'border-left'	*may*	*must*	[<border-width> || <border-style> || [<color> | transparent]] | inherit	see individual properties
'border-top-color' 'border-right-color' 'border-bottom-color' 'border-left-color'	*may*	*must*	<border-color> | transparent | inherit	the value of the 'color' property
'border-top-style' 'border-right-style' 'border-bottom-style' 'border-left-style'	*may*	none, solid	<border-style> | inherit	none
'border-top-width' 'border-right-width' 'border-bottom-width' 'border-left-width'	*may*	*must*	<border-width> | inherit	medium
'border-width'	*may*	*must*	<border-width>{1,4} | inherit	see individual properties

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'bottom'	*may*	*must*	<length> | <percentage> | auto | inherit	auto
'caption-side'	*may*	*must*	top | bottom | left | right | inherit	top
'clear'	*may*	*must*	none | left | right | both | inherit	none
'clip'	*may*	*must*	<shape> | auto | inherit	auto
'color'	*must*	*must*	<color> | inherit	depends on user agent
'content'	inherit | [<string> | counter(pages±)]+	inherit | [<string> | counter(pages±)]+	[<string> | <uri> | <counter> | attr(X) | open-quote | close-quote | no-open-quote | no-close-quote]+ | inherit	empty string
'counter-increment'	"pages"±	"pages"±	[<identifier> <integer>]+ | none | inherit	none
'counter-reset'	*must*	*must*	[<identifier> <integer>?]+ | none | inherit	none
'display'	*may*	inline | block | list-item | none |inherit	inline | block | list-item | run-in | compact | marker | table | inline-table | table-row-group | table-header-group | table-footer-group | table-row | table-column-group | table-column | table-cell | table-caption | none | inherit	inline
'object-fit'	*may*	*must*	fill | none | cover | contain	fill

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'font'	[['font-style' || 'font-weight']? 'font-size' [/ 'line-height']? 'font-family'] | inherit	[['font-style' || 'font-variant' || 'font-weight']? 'font-size' [/ 'line-height']? 'font-family'] | inherit	[['font-style' || 'font-variant' || 'font-weight']? 'font-size' [/ 'line-height']? 'font-family'] | caption | icon | menu | message-box | small-caption | status-bar | inherit	see individual properties
'font-family'	*must**	*must**	[[<family-name> | <generic-family>],]* [<family-name> | <generic-family>] | inherit	depends on user agent
'font-size'	*must **	*must **	<absolute-size> | <relative-size> | <length> | <percentage> | inherit	medium
'font-style'	*must**	*must **	normal | italic | oblique | inherit	normal
'font-variant'	*may*	*must*	normal | small-caps | inherit	normal
'font-weight'	*must **	*must **	normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | inherit	normal
'height'	*must*	*must*	<length> | <percentage> | auto | inherit	auto
'image-orientation'	*may*	*must*	<angle> | auto	auto
'left'	*may*	*must*	<length> | <percentage> | auto | inherit	auto
'letter-spacing'	*may*	*must*	normal | <length> | inherit	normal

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'line-height'	*must*	*must*	normal | <number> | <length> | <percentage> | inherit	normal
'list-style'	*may*	*must*	['list-style-type' || 'list-style-position' || 'list-style-image'] | inherit	see individual properties
'list-style-image'	*may*	*must*	<uri> | none | inherit	none
'list-style-position'	*must*	*must*	inside | outside | inherit	outside
'list-style-type'	disc, decimal, lower-alpha, upper-alpha, none and inherit	disc, decimal, lower-alpha, upper-alpha, none and inherit	disc | circle | square | decimal | decimal-leading-zero | lower-roman | upper-roman | lower-greek | lower-alpha | lower-latin | upper-alpha | upper-latin | hebrew | armenian | georgian | cjk-ideographic | hiragana | katakana | hiragana-iroha | katakana-iroha | none | inherit	disc
'margin'	*must*	*must*	<margin-width>{1,4} | inherit	see individual properties
'margin-top' 'margin-right' 'margin-bottom' 'margin-left'	*must*	*must*	<margin-width> | inherit	0
'object-position'	*may*	*must*	[[<percentage> | <length>] {1,2} | [[top | center | bottom] || [left | center | right]]]	50% 50%
'float'	*may*	*must*	left | right | none | inherit	none

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'orphans'	*may*	*must*	<integer> | inherit	2
'overflow'	*may*	*must*	visible | hidden | scroll | auto | inherit	visible
'padding'	*may*	*must*	<padding-width>{1,4} | inherit	see individual properties
'padding-top' 'padding-right' 'padding-bottom' 'padding-left'	*may*	*must*	<padding-width> | inherit	0
'page'	*must*	*must*	<identifier> | auto	auto
'page-break-after'	auto | always | inherit	auto | always | inherit	auto | always | avoid | left | right | inherit	auto
'page-break-before'	auto | always | inherit	auto | always | inherit	auto | always | avoid | left | right | inherit	auto
'page-break-inside'	*must*	*must*	avoid | auto | inherit	auto
'position'	*may*	*must* ‡	static | relative | absolute | fixed | inherit	static
'right'	*may*	*must*	<length> | <percentage> | auto | inherit	auto
'size'	[<length>{1,2}| letter | legal | ledger | A4 | A5 | A3 | B4 | B5] | auto | portrait | inherit	[<length>{1,2} | letter | legal | ledger | A4 | A5 | A3 | B4 | B5] | auto | portrait | landscape | inherit	[<length>{1,2} | letter | legal | ledger | A4 | A5 | A3 | B4 | B5] | auto | portrait | landscape | inherit	auto
'table-layout'	*may*	*must*	auto | fixed | inherit	auto
'text-align'	left | center | inherit	left | right | center | inherit	left | right | center | justify | <string> | inherit	depends on user agent and writing direction
'text-decoration'	none, underline, and inherit	none, underline, and inherit	none | [underline || overline || line-through || blink] | inherit	none
'text-indent'	*must*	*must*	<length> | <percentage> | inherit	0

Name	CSS Print	CSS Print-Enhanced	CSS Values	Initial value
'text-transform'	*may*	*must*	capitalize | uppercase | lowercase | none | inherit	none
'top'	*may*	*must*	\<length\> | \<percentage\> | auto | inherit	auto
'vertical-align'	*may*	*must*[1]	baseline | sub | super | top | text-top | middle | bottom | text-bottom | \<percentage\> | \<length\> | inherit	baseline
'visibility'	*may*	*must*	visible | hidden | collapse | inherit	inherit
'white-space'	*must*	*must*	normal | pre | nowrap | inherit	normal
'widows'	*may*	*must*	\<integer\> | inherit	2
'width'	*must*	*must*	\<length\> | \<percentage\> | auto | inherit	auto

Table Note:

† Only the single identifier "pages" that represents the current page number is *required*.

* It is *recommended* that a printer minimally support "serif," "sans-serif," and "monospace" font families.

** The supported values *should* be appropriate to the fonts available to the printer.

‡ The printer *may* ignore positioned elements that are placed on the page before the position of the current element in the normal flow.

[1] Vertical alignment is undefined across page boundaries.

Image Rendering Properties

A previous Working Draft of this document defined 'fit' and 'fit-position' properties.

To support legacy content using these properties, implementations of the CSS Print Profile MAY alias the 'object-fit' and 'object-position' properties as defined below:

Property/Value	Alias
'object-fit'	'fit'
none	hidden
cover	slice
contain	meet
'object-position'	'fit-position'

Additionally, implementations MAY override initial value of 'object-position' (which is '50% 50%') to be '0% 0%' by adding an appropriate rule to the UA style sheet, if that is required for compatibility with existing content. Similarly, if inheritance is required, then that may also be indicated by UA style sheet rule.

The following rule positions all images with 'object-fit' values other than 'fill' to be top-left aligned:

```
* { object-position: top left; }
```

The following rules also cause 'object-position' to inherit.

```
* { object-position: inherit; }
:root { object-position: top left; }
```

5. CSS Syntax

The CSS Print Profile uses the same syntax as specified in *Cascading Style Sheets, Level 2, revision 1* (CSS 2.1) [CSS21]. The CSS Print Profile uses a subset of the values used in CSS 2.1. Specifically:

1. The printer *shall* support integer and real numbers ([CSS21], Section 4.3.1).
2. The printer *shall* support the following lengths ([CSS21], Section 4.3.2):
   - px
   - em
   - ex
   - in
   - cm
   - mm
   - pt
   - pc
   The printer *may* support other lengths.
3. The printer *shall* support percentage values ([CSS21], Section 4.3.3).
4. The printer *shall* support URI values ([CSS21], Section 4.3.4).
5. The printer *shall* support a "pages" counter value that tracks page numbers ([CSS21], Section 4.3.5).
6. The printer *shall* support the following color values:
   - The 16 colors defined in HTML 4.01 [HTML4]
   - A numerical RGB specification ([CSS21], Section 4.3.6)
   The printer *may* support other color values. The printer *may* support user preferences for colors ([CSS 2.1], Section 18.2).
7. The printer *may* support user preferences for fonts ([CSS 2.1], Section 18.3).

Similarly, the CSS Print Profile requires that conforming user agents support the character encoding mechanisms specified in CSS 2.1 [CSS21]. Specifically:

1. The printer *shall* support priorities specified in CSS 2.1 [CSS21] to determine a document's character encoding.
2. The printer *shall* support the CSS 2.1 @charset rules. However, if the character set specified by the @charset rule of a external style sheet is not supported by the printer, the style sheet will be ignored.

6. Assigning Property Values, Cascading, and Inheritance

In general, the CSS Print Profile uses the same cascading rules as in CSS 2.1. Specifically:

1. The printer *shall* assign values as described in CSS 2.1 ([CSS21], Section 6.1).
2. The printer *shall* support inheritance as described in CSS 2.1 ([CSS21], Section 6.2).
3. A printer supporting Enhanced Layout Extension conformance *shall* support the CSS 2.1 @import rules as specified in CSS 2.1 ([CSS21], Section 6.3).
4. The printer *shall* support author style sheets. The printer *may* support user or user-agent style sheets ([CSS21], Section 6.4).
5. The printer *shall* support all CSS 2.1 cascading mechanisms ([CSS21] Sections 6.4.1-6.4.4).

7. Media Types

A CSS Print Profile conforming user agent *shall* be able to process media-dependent style sheets as specified in CSS 2.1 ([CSS21], Section 7). Specifically:

1. The printer *shall* support the CSS 2.1 @media rules as specified in CSS 2.1 ([CSS21], Section 7).
2. The printer *shall* accept and process style sheets that target the `print` media type.
3. The printer *shall* accept and process style sheets that target the `all` media type.
4. The printer *shall* accept style sheets that contain other (non-print) media-dependent style sheets.
5. The printer *may* process other media types (such as `projection` or `handheld`).

8. CSS Print Profile Properties and User Agent interactions

The following sections relax or otherwise modify the conformance requirements.

8.1 Nested Floats, Divs, and Absolutely Positioned Boxes

Authors are cautioned that the nesting of floats, divs, and absolutely positioned boxes within themselves, each other, and table cells should be used carefully, since the nesting depth of these constructs is printer and implementation dependent.

8.2 Page Breaks

If `page-break-inside: avoid` is specified for a long element and the printer is unable to buffer the entire element before committing it to paper, it *should* force a page break to occur before the long element and begin the element starting at the top of the next page. If the long element starts at the top of a page and exceeds the page length, the printer *shall* print as much as possible on the first page and then resume that element on the next and subsequent pages as *required* to preserve the content. A printer *may* perform scaling to fit the long element on a single page; but this is not recommended unless the scaling required is minimal.

8.3 Page Size

Due to a printer's mechanical limitations, the actual printable area of the page is often less than the page size. However, a printer *should* be guided by the page size value supplied by the CSS size property when choosing the media to print on.

See http://www.w3.org/TR/css3-page/#renderingpages in *CSS3 Paged Media* [PAGEMEDIA] for a discussion of fitting contents to media sheets.

8.4 Default Style Sheets

This entire section is informative.

Appendix D of *Cascading Style Sheets, Level 2, revision 1* ([CSS21], Appendix D) provides a sample style sheet. This sheet uses several properties that are not required of a conforming printer, even ones supporting the enhanced layout extensions (section 2.1).

8.5.1 Default Style Sheet Guidelines for printers

Developers of printers that do not implement the enhanced layout facilities are encouraged but not required to adhere to the following implementation guidelines that address unsupported properties. These guidelines are presented to promote consistency between printer implementations.

> The guidelines below are annotated to show derivation of the guideline from the *Cascading Style Sheets, Level 2, revision 1* [CSS21] style sheet. Ed.

1. The `address, blockquote, body, dd, div, dl, dt, h1, h2, h3, h4, h5, h6, hr, object, ol, p, pre,` and `ul` elements should be treated as if their display property were set to `block`.
2. The `li` element should be treated as if its display property were set to `list-items`.
3. The table elements, `table, tr, td, th,` and `caption`, should have their standard meaning and display treatments: `table, table-row, table-cell,` and `table-caption`.

4. The elements `base`, `br`, `html`, `head`, `link`, `meta`, `param`, `style` and `title` should be treated as if their display property were set to `none`.

5. The remaining elements, `a`, `abbr`, `acronym`, `b`, `big`, `cite`, `code`, `dfn`, `em`, `form`, `i`, `img`, `input`, `kbd`, `option`, `samp`, `small`, `select`, `strong`, `sub`, `sup`, `textarea`, `tt`, and `var`, should be treated as if their display property were set to `inline`. A display property of `inline` for the elements `img`, `input`, `select`, and `textarea` allows document authors a flexibility not available if their display property were `block`.

> The above guidelines come from the following portion of the CSS 2.1 default style sheet:

```
ADDRESS, BLOCKQUOTE, BODY, DD, DIV, DL, DT, FIELDSET, FORM,
FRAME, FRAMESET, H1, H2, H3, H4, H5, H6, IFRAME, NOFRAMES,
OBJECT, OL, P, UL, APPLET, CENTER, DIR, HR, MENU,
               { display: block }
LI             { display: list-item }
HEAD           { display: none }
TABLE          { display: table }
TR             { display: table-row }
THEAD          { display: table-header-group }
TBODY          { display: table-row-group }
TFOOT          { display: table-footer-group }
COL            { display: table-column }
COLGROUP       { display: table-column-group }
TD, TH         { display: table-cell }
CAPTION        { display: table-caption }
```
> Ed.

6. The edges of the content of `body` element should have 0.1 inch wide inset from the left, top, right, and bottom of the printable area of the page. Margin calculations will start from these offsets.

> The .1 inch figure comes from the calculation that 8 px divided by 75px/inch (a normal display resolution) is about .1 inches.

```
BODY           { padding: 8px;
                 line-height: 1.33 }
```
> Ed.

7. The content of the `sub` element should be treated as if its vertical-align property were set to `sub`. Similarly, the content of the `sup` element should be treated as if its vertical-align property were set to `sup`.

```
SUB            { vertical-align: sub }
SUP            { vertical-align: super }
```
> Ed.

8. The `hr` element should be treated as if its area, as defined by its height and width, were outlined by a one pixel thick, solid line. The default line should be one pixel high and the width of the containing box.

```
HR             { border: 1px inset }
```
> Ed.

9. The lower case letters of the content of the `abbr` and `acronym` elements should be rendered as scaled capital letters, at approximately 75% of their size at the current font size. Upper case letters will be unchanged. Printers may also choose to simply render lower case letters as upper case letters without scaling.

> The 75% figure above is only one way to approximate small-caps. The printer is free to use its own rendering of small-caps.

```
ABBR, ACRONYM  { font-variant: small-caps;
                 letter-spacing: 0.1em }
```
> Ed.

10. Page break avoidance both inside and after is removed for the elements `h1`, `h2`, `h3`, `h4`, `h5`, and `h6`. Therefore, the printer is not required to move the content of these elements from the bottom of one page to the top of the next.

```
H1, H2, H3,
```

Ed.

11. The printer need not avoid page breaks before the `ul`, `ol`, and `dl` elements.

Ed.

12. The printer may choose its own, fixed value for the padding properties of elements where the *Cascading Style Sheets, Level 2, revision 1* box model ([CSS21], Section 8) applies.
13. The content of all elements, except `hr`, should be treated as if the element's border-style property were set to `none`.
14. The content of all elements may be treated as if the element's overflow property were set to `visible` and the clip property set to `auto`.

This guideline suggests consistent behavior among implementations. Ed.

15. The content of all elements may be treated as if the element's positioning property were set to `static`.

Elements should be treated as if they are in the normal flow. Ed.

16. Tables should be treated as if the table-layout property were set to `fixed`.

This guideline promotes consistency since
  - the table-layout property is not mandated
  - There isn't a CSS default style sheet rule for this property

Ed.

The following style sheet is a modification of the sample sheet in Appendix D of *Cascading Style Sheets, Level 2, revision 1* ([CSS21], Appendix D) and depends on the above guidelines.

```
th                   { font-weight: bolder; text-align: center }
caption              { text-align: center }
body                 { line-height: 1.33 }
h1                   { font-size: 2em; margin: .67em 0 }
h2                   { font-size: 1.5em; margin: .83em 0 }
h3                   { font-size: 1.17em; margin: 1em 0 }
h4, p,
blockquote, ul,
form,
ol, dl               { margin: 1.33em 0 }
h5                   { font-size: .83em; line-height: 1.17em; margin: 1.67em 0 }
h6                   { font-size: .67em; margin: 2.33em 0 }
h1, h2, h3, h4,
h5, h6, b,
strong               { font-weight: bolder }
blockquote           { margin-left: 40px; margin-right: 40px }
i, cite, em,
var, address         { font-style: italic }
pre, tt, code,
kbd, samp            { font-family: monospace }
pre                  { white-space: pre }
big                  { font-size: 1.17em }
small, sub, sup      { font-size: .83em }
ol, ul, dd           { margin-left: 40px }
ol                   { list-style-type: decimal }
ol ul, ul ol,
ul ul, ol ol         { margin-top: 0; margin-bottom: 0 }
br         { content: "\A" }

@media print {
  @page          { margin: 10% }
  blockquote,
  pre            { page-break-inside: avoid }
}
```

8.5.2 Default Style Sheet Guidelines for Enhanced Layout printers

Developers of printers conforming to the [enhanced layout extensions](#) (section 2.1) *must* implement more of *Cascading Style Sheets, Level 2, revision 1* [CSS21] than conforming printers, although the set of properties and their values is still less than complete.

Developers of printers are encouraged but not required to adhere to the following implementation guidelines that address unsupported properties.

1. The table elements, `table`, `tr`, `td`, `th`, and `caption`, should have their standard meaning and display treatments: `table`, `table-row`, `table-cell`, and `table-caption`.
2. The rendering of the hr element is implementation dependent since support of the `inset` value of the border-style property is not required.
3. Page break avoidance both inside and after is removed for the elements `h1`, `h2`, `h3`, `h4`, `h5`, and `h6`. Therefore, the printer need not be concerned with moving the content of these elements from the bottom of one page to the top of the next.
4. The printer need not avoid page breaks before the `ul`, `ol`, and `dl` elements.

The following style sheet is a modification of the sample sheet in [Appendix D](#) of [CSS21] and depends on the above guidelines.

```
address,
blockquote,
body, dd, div,
dl, dt,
form,
h1, h2, h3, h4,
h5, h6,
object, ol, p,
ul,
hr, pr e          { display: block }
li                { display: list-item }
head              { display: none }
th                { font-weight: bolder; text-align: center }
caption           { text-align: center }
body              { padding: 8px; line-height: 1.33 }
h1                { font-size: 2em; margin: .67em 0 }
h2                { font-size: 1.5em; margin: .83em 0 }
h3                { font-size: 1.17em; margin: 1em 0 }
h4, p,
blockquote, ul,
form,
ol, dl,           { margin: 1.33em 0 }
h5                { font-size: .83em; line-height: 1.17em; margin: 1.67em 0 }
h6                { font-size: .67em; margin: 2.33em 0 }
h1, h2, h3, h4,
h5, h6, b,
strong            { font-weight: bolder }
blockquote        { margin-left: 40px; margin-right: 40px }
i, cite, em,
var, address      { font-style: italic }
pre, tt, code,
kbd, samp         { font-family: monospace }
pre               { white-space: pre }
big               { font-size: 1.17em }
small, sub, sup { font-size: .83em }
hr                { border: 1px   }
ol, ul, dd        { margin-left: 40px }
ol                { list-style-type: decimal }
ol ul, ul ol,
ul ul, ol ol      { margin-top: 0; margin-bottom: 0 }
br         { content: "\A" }

@media print {
  @page           { margin: 10% }
  blockquote,
  pre             { page-break-inside: avoid }
}
```

9. Acknowledgements

This section is informative.

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This specification is based on the specification of the same name, *CSS Print Profile* [CSSPP] from the Printer Working Group, a program of and through the IEEE Industry Standards and Technology Organization, Inc. The editor wishes to express her gratitude to all those who contributed to it.

Appendix A. References

A.1 Normative References

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A.2 Informative References

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