

# CSS Minification Best Practices

CSS minification techniques, shorthand properties, selector optimization, and tools for reducing CSS file size.

## What Minification Removes

- Whitespace, newlines, indentation
- Comments (`/* ... */`)
- Redundant semicolons
- Trailing zeros: `0.5` → `.5`
- Unnecessary units: `0px` → `0`
- Duplicate properties (keeps last value)
- Browser vendor prefix ordering (keeps needed ones)

## Shorthand Properties

Longhand (verbose)	Shorthand (compact)
<code>margin-top/right/bottom/left: 10px</code>	<code>margin: 10px</code>
<code>margin: 10px 10px 10px 10px</code>	<code>margin: 10px</code>
<code>margin: 10px 20px 10px 20px</code>	<code>margin: 10px 20px</code>
<code>padding: 5px 10px 5px 10px</code>	<code>padding: 5px 10px</code>
<code>border-width/style/color</code>	<code>border: 1px solid #000</code>
<code>background-color: #ffffff</code>	<code>background-color: #fff</code>
<code>font-size/line-height/family</code>	<code>font: 16px/1.5 sans-serif</code>

## Color Shorthand

Original	Minified
<code>#ffffff</code>	<code>#fff</code>
<code>#000000</code>	<code>#000</code>
<code>#aabbcc</code>	<code>#abc</code>
<code>#112233</code>	<code>#123</code>
<code>rgb(0,0,0)</code>	<code>#000</code>
<code>white</code>	<code>#fff</code>

## Before & After Example

```
/* Before: 230 bytes */
.button {
  display: inline-block;
  padding-top: 10px;
  padding-right: 20px;
  padding-bottom: 10px;
  padding-left: 20px;
  background-color: #ffffff;
  border: 1px solid #000000;
  color: #333333;
  font-size: 16px;
}

/* After: 92 bytes (60% smaller) */
.button{display:inline-block;padding:10px 20px;background:#fff;border:1px solid #000;color:#333;font-size:16px}
```

## Popular Minification Tools

Tool	Use case
<a href="https://toolpilot.dev/tools/css-minifier/">toolpilot.dev/tools/css-minifier/</a>	Online, instant, no install
clean-css	Node.js CLI and API
cssnano	PostCSS plugin for build pipelines
Lightning CSS	Rust-based, fastest (used by Vite)
Tailwind CSS (purge)	Removes unused utility classes