

Elevation

An elevation system explains how to use shadows and outlines to show elevation or interactivity of UI components.

About elevation systems

On a physical surface, when an object is elevated under a light source, it casts a shadow. The farther away the object from the surface, the wider and blurrier this shadow becomes.

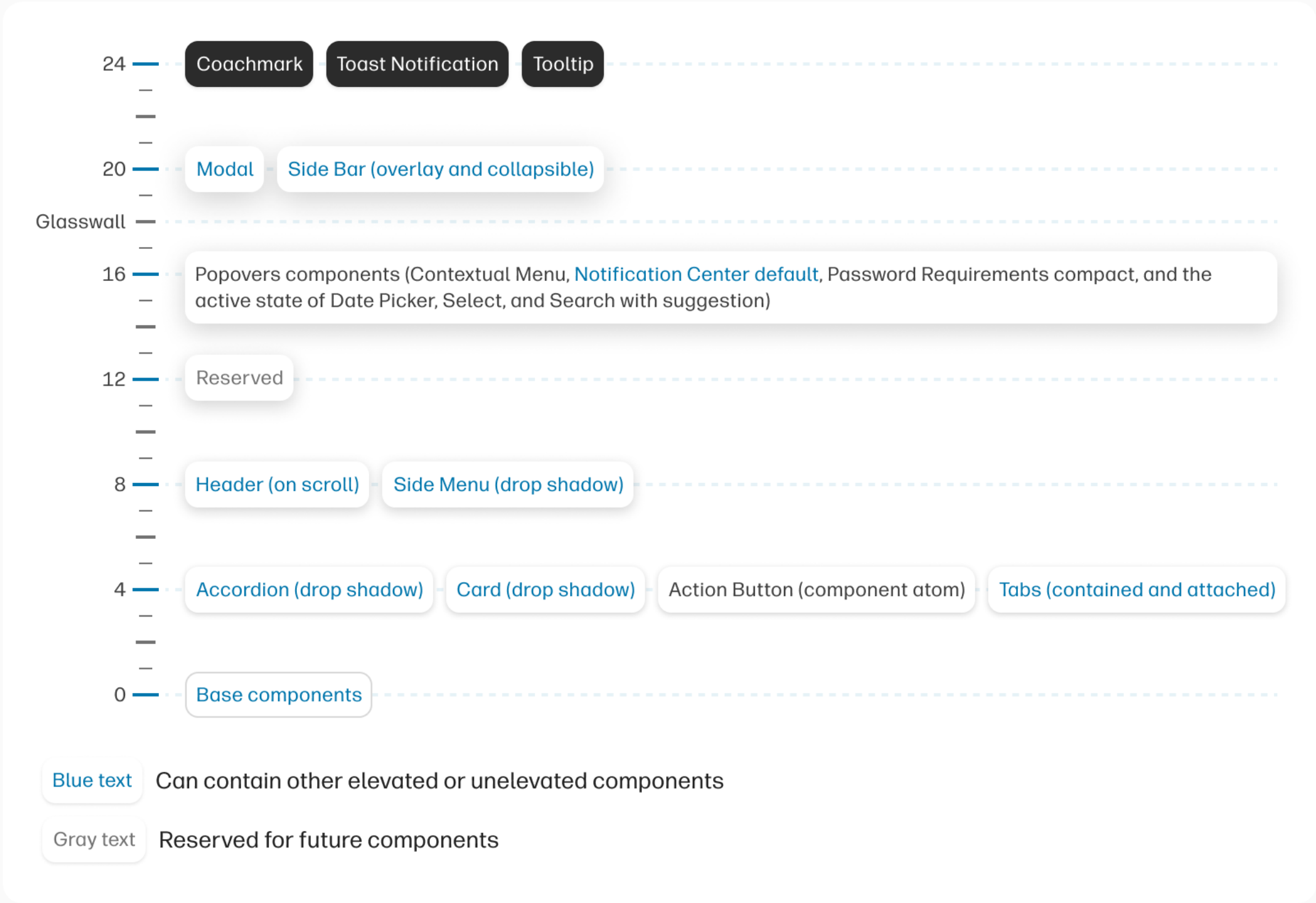
In UI design, an elevation system provides guidance on how to use different shadows to show component elevation from the screen, which creates visual depth in the UI.

In high contrast mode, instead of shadows, **Material** uses color outlines to show a component's interactivity. For more information about high contrast mode, [visit Modes](#).

Elevation system map

Material's elevation system comprises eight levels in total: seven numbered levels, from 0 to 24 in increments of 4, and a separate level for glasswall. At each higher level, the components cast a wider shadow as they are elevated farther from the surface.

Some components can contain other elevated or unelevated components.



Elevation system shadow formulas

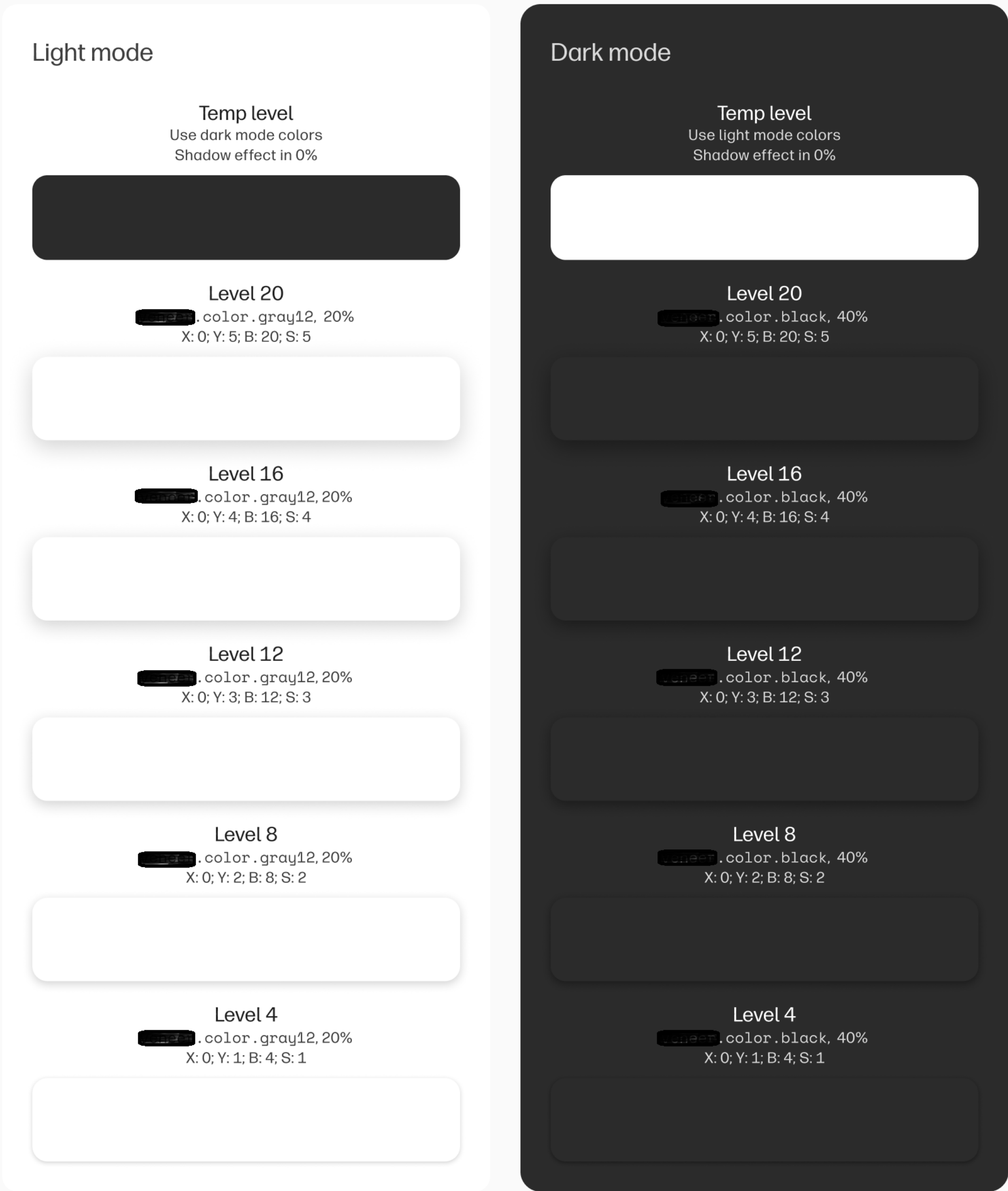
Each numbered level from 4 to 20 follows these formulas for its shadow:

- Blur value:** level number (4, 8, 12, 16, 20)
 - The level numbers follow the [4dp grid and spacing guidance](#)
- X-axis:** 0
- Y-axis:** Blur value/4
- Spread:** Blur value/4

Level 24 is a temporary level for dismissible components. In light and dark modes, these components use the opposite mode colors and have no shadow effect.

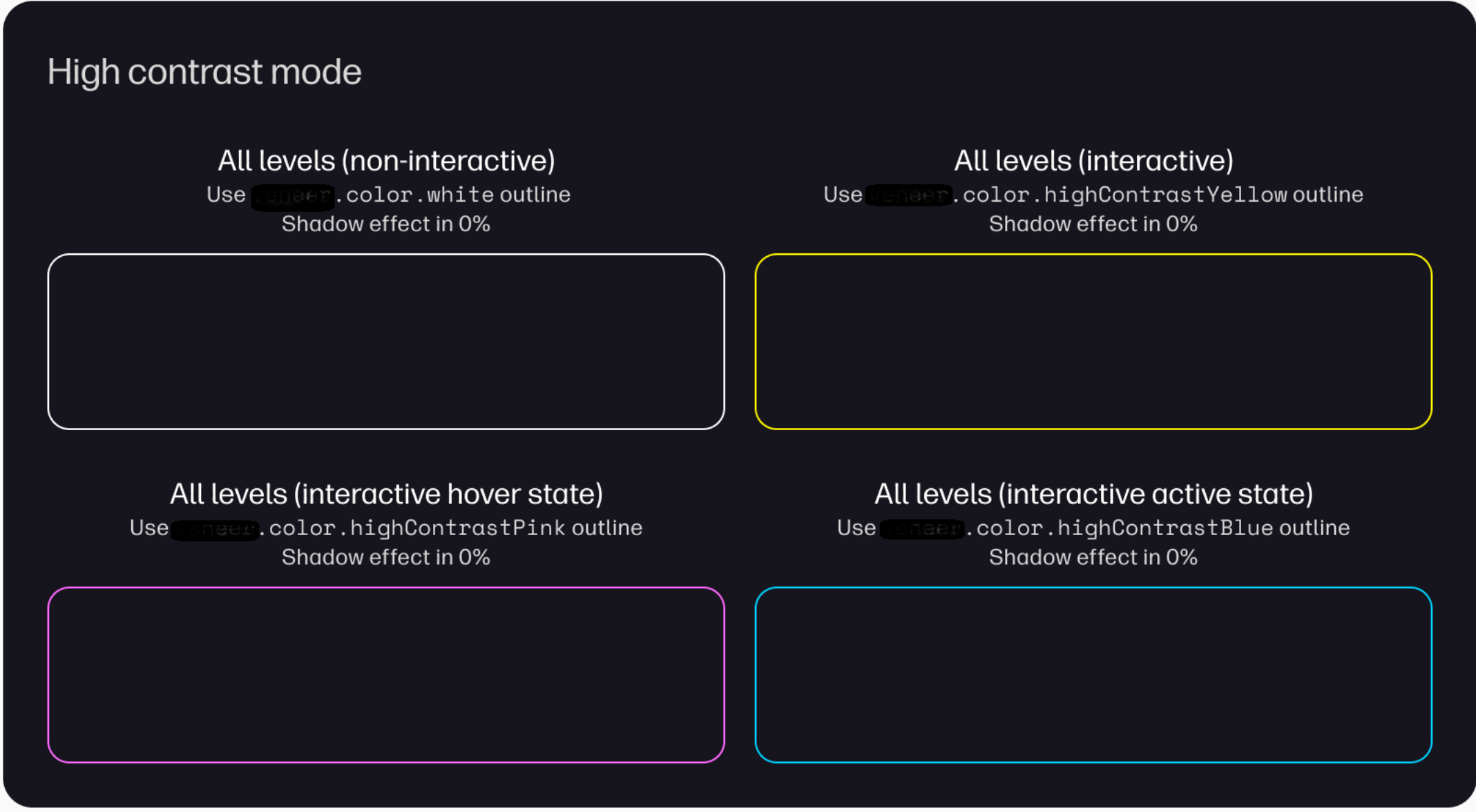
Light and dark modes

The shadow opacity and colors are different for light and dark modes. Light mode uses **Material**.color.gray12 (#212121) with 20% opacity to present a more natural shadow. Dark mode uses **Material**.color.black (#000000) with 40% opacity. A darker color with higher opacity makes the shadow stand out against a dark background.



High contrast mode

High contrast mode takes a unique approach to the elevation system. To comply with accessibility guidelines, high contrast mode uses varying color outlines to reflect a component's interactivity instead of using shadows to show elevation.



Components in high contrast mode have no shadow effect. Their interactivity is illustrated by 4 outline colors:

- Non-interactive:** **Material**.color.white
- Interactive:** **Material**.color.highContrastYellow
- Interactive, hover state:** **Material**.color.highContrastPink
- Interactive, pressed/active state:** **Material**.color.highContrastBlue

High contrast mode
Learn how **Material** sets its high contrast mode's logic and colors to improve accessibility.

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