

A person wearing glasses is looking at a slide. The slide has a dark background with a faint image of a harbor with many cranes in the background. The main text is enclosed in a white rectangular box with a thin black border.

# Focus States

**4 Official Criteria to Follow**

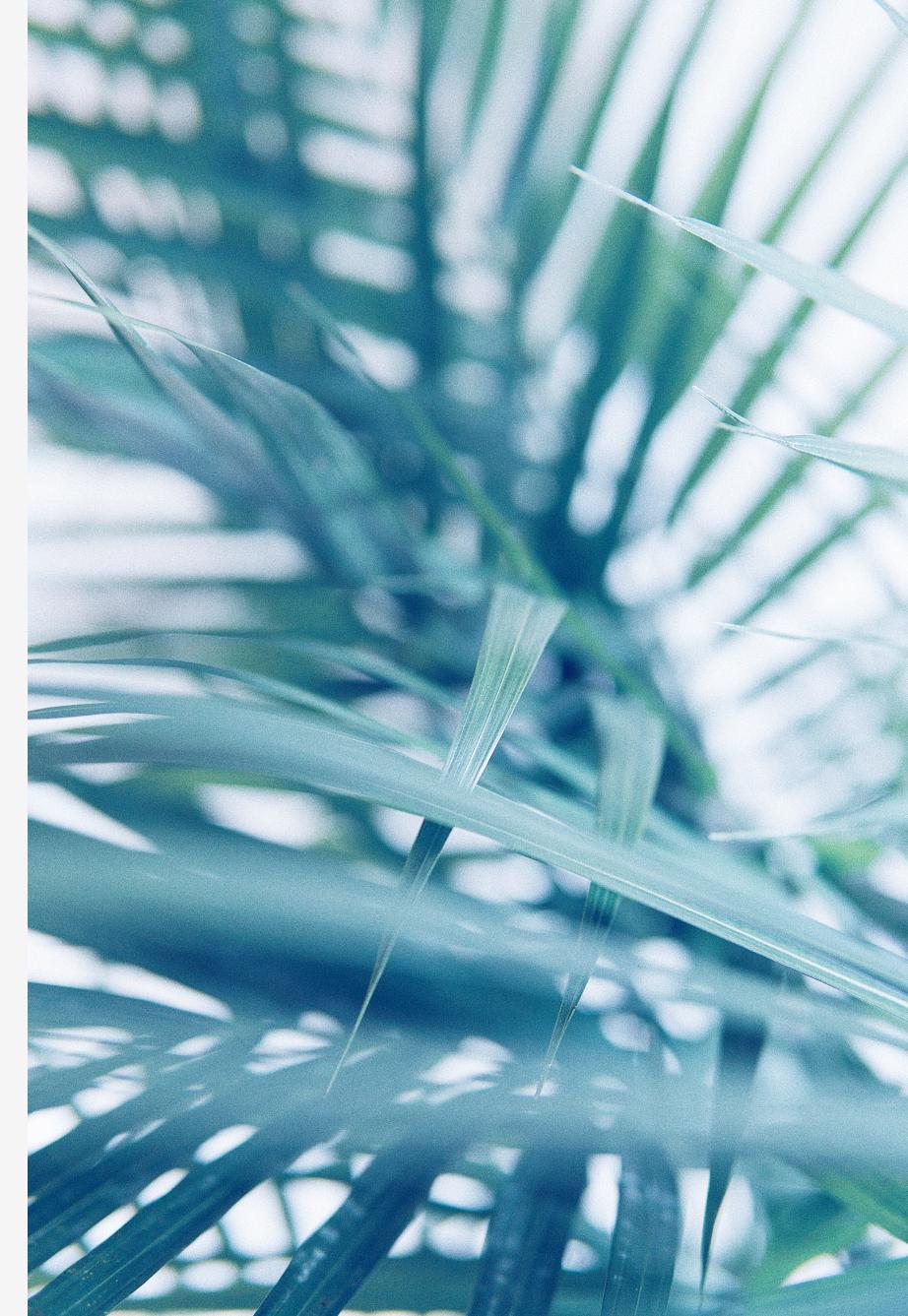
**+ 1 Bonus Rule**

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**WCAG says that when UI components receive keyboard focus, the subsequent**

**4 criteria need  
to be true for  
accessibility  
compliance**

“Rules” #1 - #4





## RULE 01

# Minimum Area

“The focus indicator area is *at least* as large as either: the area of a 1 CSS pixel thick perimeter of the unfocused component [for an outline], or the area of a 4 CSS pixel thick line along the shortest side of a minimum bounding box of the unfocused component, and no thinner than 2 CSS pixels [for a shape]. —[WCAG, Success Criterion 2.4.11: Focus Appearance \(Minimum\)](#)

**To say that simplistically**, whatever you’re using to indicate focus (a solid border, a dashed outline, a glow, a frame corner), make it **sizeable** enough so everyone can see it — e.g. for outlines, make them greater than 1 CSS px, and for dashed lines even thicker.

**Note:** If you need to use complex mathematics to work out if a focus indicator is large enough, it is probably a sign that you should use a larger and more proportional indicator that will provide a more visible change.

## RULE 02

# Contrasting Area (Change of Contrast)

“The focus indicator area has a contrast ratio of *at least* 3:1 between its colors in the focused and unfocused states. —[WCAG, Success Criterion 2.4.11: Focus Appearance \(Minimum\)](#)

**To say that simplistically, this is about color contrast;** there needs to be a 3:1+ color contrast ratio between the focused and unfocused states.

**Pro Tip:** When an interactive element changes to include a focus indicator (an outline, glow, etc.), that change can always be measured as a change of color contrast. E.g. a button on a white background has a blue outline added. The outline now occupies the space that was previously white. The change is from white to blue.

**Note:** The greater the change of contrast between states, the easier it is for users to see it. We (product creators) are encouraged to make the change of color contrast as great as possible.

A large, high-resolution photograph of ocean waves crashing against dark, mossy rocks. The water is a vibrant turquoise-green, and the white foam of the waves creates a textured, dynamic pattern against the dark stones.

## RULE 03

# Adjacent Contrast

“Where the focus indicator area is adjacent to the component, it has a contrast ratio of *at least* 3:1 against the component **or** a thickness of *at least* 2 CSS pixels. —[WCAG, Success Criterion 2.4.11: Focus Appearance \(Minimum\)](#)

**To say that simplistically, this is about color independence;** there needs to be a 3:1+ color contrast ratio between the focus indicator and the adjacent colors. (If not, then there should be what looks like a size/thickness change, such as an input field’s stroke visually looking 2px thicker than its original thickness.)



A photograph of a modern apartment building with a white facade and blue-framed balconies. The building has a unique, angular design with multiple levels and overhanging sections. The balconies feature glass railings and small potted plants. The sky is clear and blue.

RULE 04

# Not Fully Obscured

“The item with focus is not entirely hidden by author-created content. Typical types of content that can overlap focused items are sticky footers, sticky headers, or non-modal dialogues. As a user tabs through the page, these layers of content can obscure the focused item, including the focus indicator. —[WCAG, Success Criterion 2.4.11: Focus Appearance \(Minimum\)](#)

***To say that simplistically***, a “visible focus state” isn’t so visible if it gets covered up by other stuff on the page, eh! :)



## BONUS RULE 05

# Befitting Signifiers

The presentation (styling, micro animation, etc.) used to indicate the focus state, should use befitting signifiers to accurately communicate its meaning to users. (Signifiers are: Signals that communicate an element's intended use. They can be visual, auditory, tactile, etc.)

**To say that simplistically,** if an interactive element is supposed to be visually indicating that it's focused, does it in fact look focused? Or does it look like another state or another element? Usability testing can answer this. (Usability is good for people *with* and *without* disabilities.)

**Note:** As of yet, there is no specific WCAG page to cite for this one. However, Don Norman, co-founder of the Nielsen Norman Group (a source of authority on usability) provides a reputable and reliable source we can reference [about Signifiers: jnd.org/signifiers\\_not\\_affordances](http://jnd.org/signifiers_not_affordances).

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# 10 pass & fail Examples

## NOTE:

I have not included examples of rule #4 (Not Fully Obscured) since achieving it is fairly self-explanatory.



## EXAMPLE 1: PASS

# Solid black outline

### Minimum Area

A solid outline, greater than 1 CSS px, around the whole component would pass the size requirement. These examples have a 3px outline (approximately). This focus styling (on these examples) passes.

### Contrasting Area (Change of Contrast)

For the contrast requirement, the area around these interactive elements is white, so a change from that white background to the black outline that now occupies that space, must meet or exceed 3:1. At 21:1, this passes.

### Adjacent Contrast

The black outline should contrast with the element it's touching at 3:1+. The bright blue (of the primary buttons and selected radio buttons) is 4.27:1 against the black outline. (Also, it exceeds 2px.) This passes. **Caution:** Because the black outline touches everything it encircles, you'd have to check the colors in every instance; very tedious; leave a gap instead (an example of this follows).

### Befitting Signifiers

A thick outline (of some sort) has classically been used to signify the focus state. Therefore it would not be unexpected. This passes.

Default

Focused

Default

Focused

I'm a Focused link, aloha!

I'm a Default link, hola!

Default Field:

Focused Field:

Default

Focused

Default

Focused

Notice: The focus outline is around the entire clickable area. We make both the radio circle **and** label clickable, because we're not jerks 😊

## EXAMPLE 2: FAIL

# Blue outline & glow

### Minimum Area

The blue outline is solid, it goes around the entire element, and at 2px (not counting the glow) it exceeds the 1px requirement. This passes the size requirement.

### Contrasting Area (Change of Contrast)

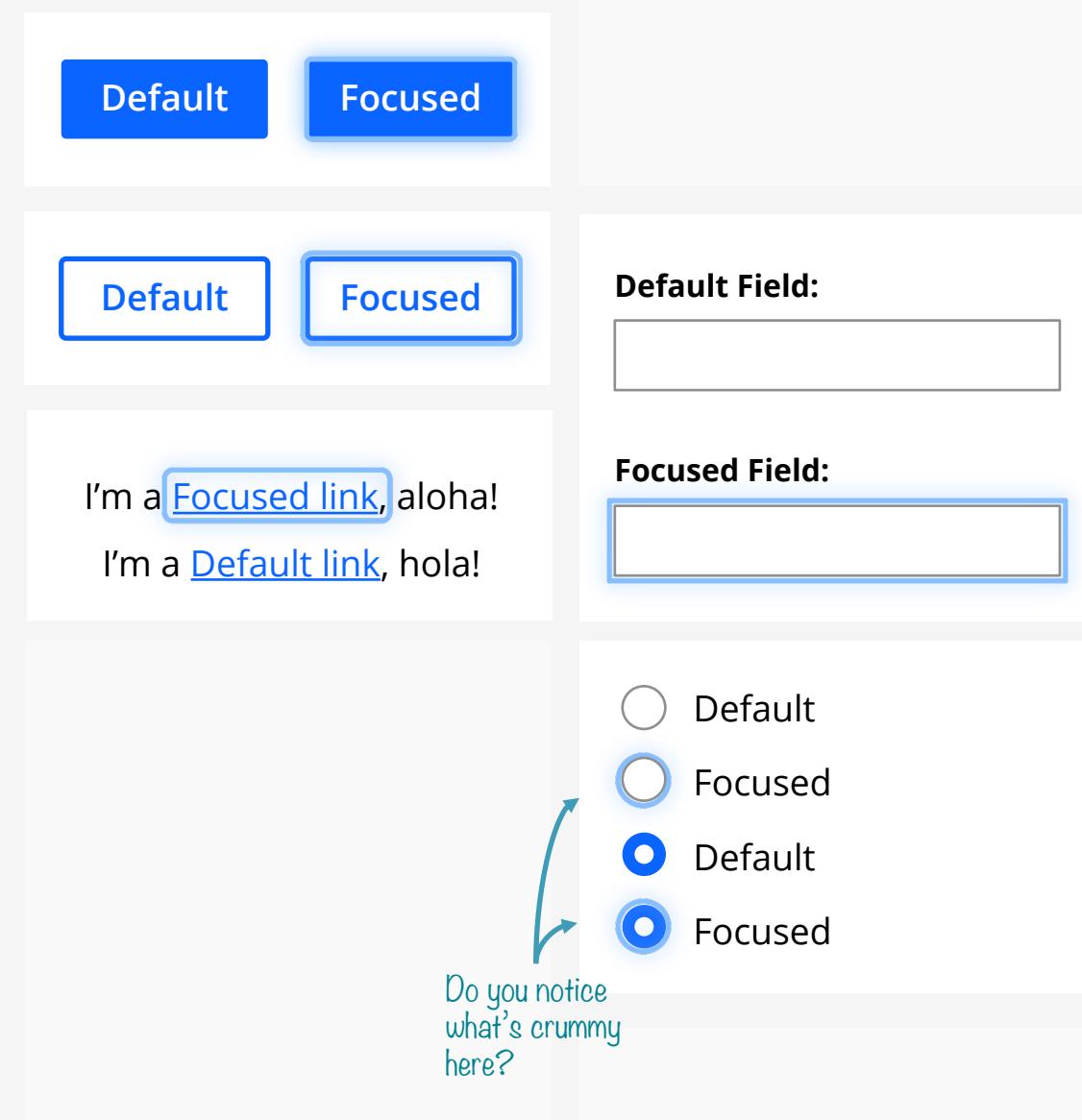
The change is from a white background to a light-blue outline. The contrast between those two colors is 1.92:1. Because it does not exceed 3:1, this fails.

### Adjacent Contrast

Where the light-blue focus outline touches a white element, it fails to meet/exceed 3:1 (it's only 1.92:1). Where the light-blue touches a cobalt-blue element, it also fails to meet/exceed 3:1 (it's only 2.54:1).

### Befitting Signifiers

This is a big ol' winner in the signifier category. How many focus states have you seen styled with a glowing blue aura like this, right! This styling is heavily associated with focus states (thanks in no small part to browsers' default focus states). Too bad it's not accessible.



## EXAMPLE 3: PASS

# Black outline, blue glow

### Minimum Area

The focus indicator is a 2px solid black outline that also has a blue glow. This passes the size requirement. (I had the black outline at 1px, but it was difficult to see against the blue buttons and input field borders. And as I explain in a moment, we are disregarding the blue glow.)

### Contrasting Area (Change of Contrast)

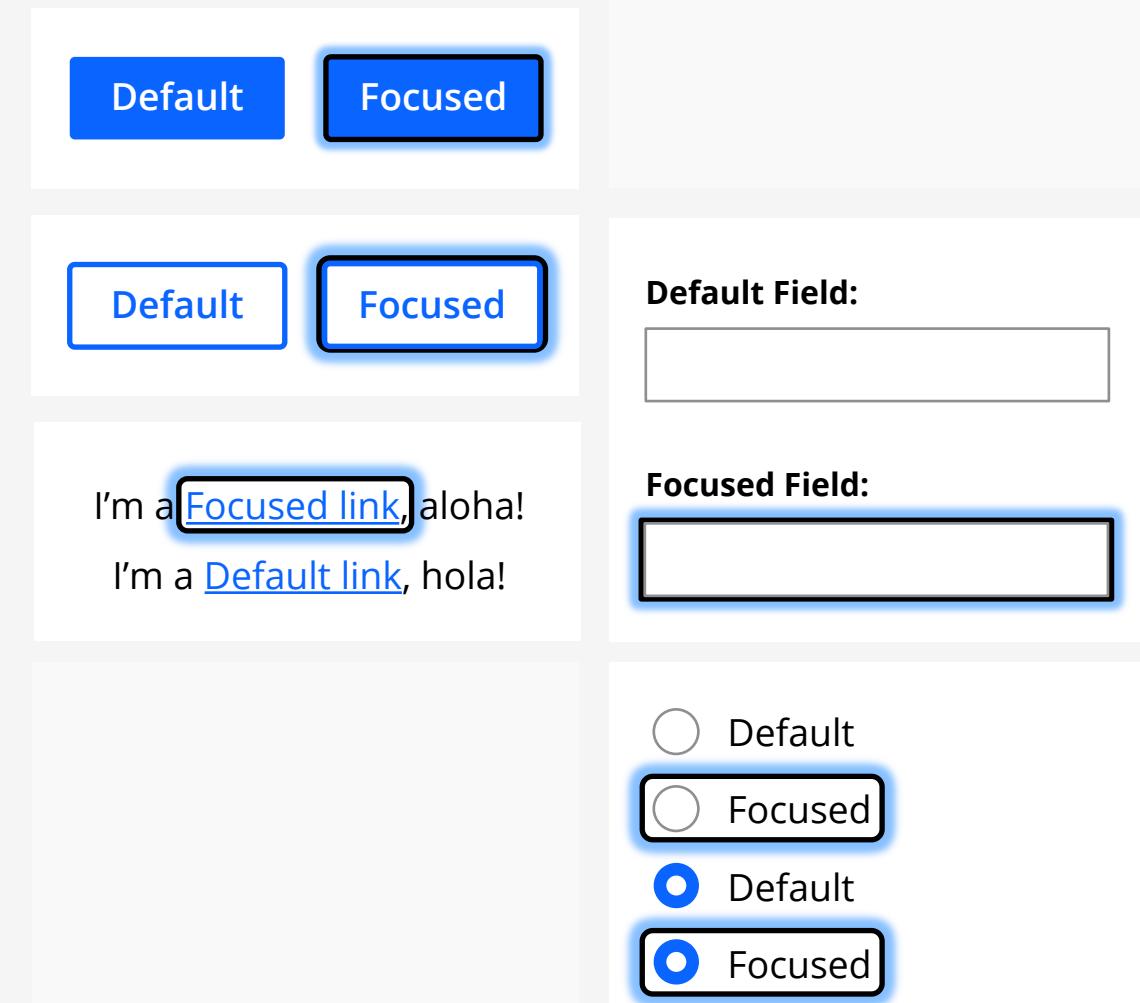
The white space around the elements changes to a black outline & blue glow. White to black exceeds 3:1 and passes. White to blue does not meet 3:1 and fails. We disregard the blue glow (consider it decoration). But the black outline alone is sufficient, so it enables this to pass.

### Adjacent Contrast

The black outline should contrast with the element it's touching at 3:1+. Since the blue glow failed color contrast, we are still disregarding it (turn it off in your design to help you judge this). Black against bright-blue is 4.27:1, pass. Black against the very-dark-gray border of the input field, fail. To compensate, the focus indicator (black outline) needs to be at least 2px thick to distinguish it. For this reason, the black outline is 2px throughout, not 1px.

### Befitting Signifiers

Do we include the glow in our assessment of Befitting Signifiers? No, we disregard it here as well. We imagine ourselves as having low vision or color blindness — We don't pick and choose when to not see the blue glow. So we assess Befitting Signifiers based on the 2px black outline alone. And as explained in a previous example, it passes.



## EXAMPLE 4: PASS

# Outline with a gap

### Minimum Area

Two examples here: The first set of buttons has a cyan outline, the second set has a cobalt outline. For both, the 1.5px solid blue outline (with a soft glow) is greater than the required 1 CSS px thickness (around the entire component) and therefore passes the size requirement.

**Note:** the gap needs to be 1 CSS px or larger to be noticeable and count as a “gap”.

### Contrasting Area (Change of Contrast)

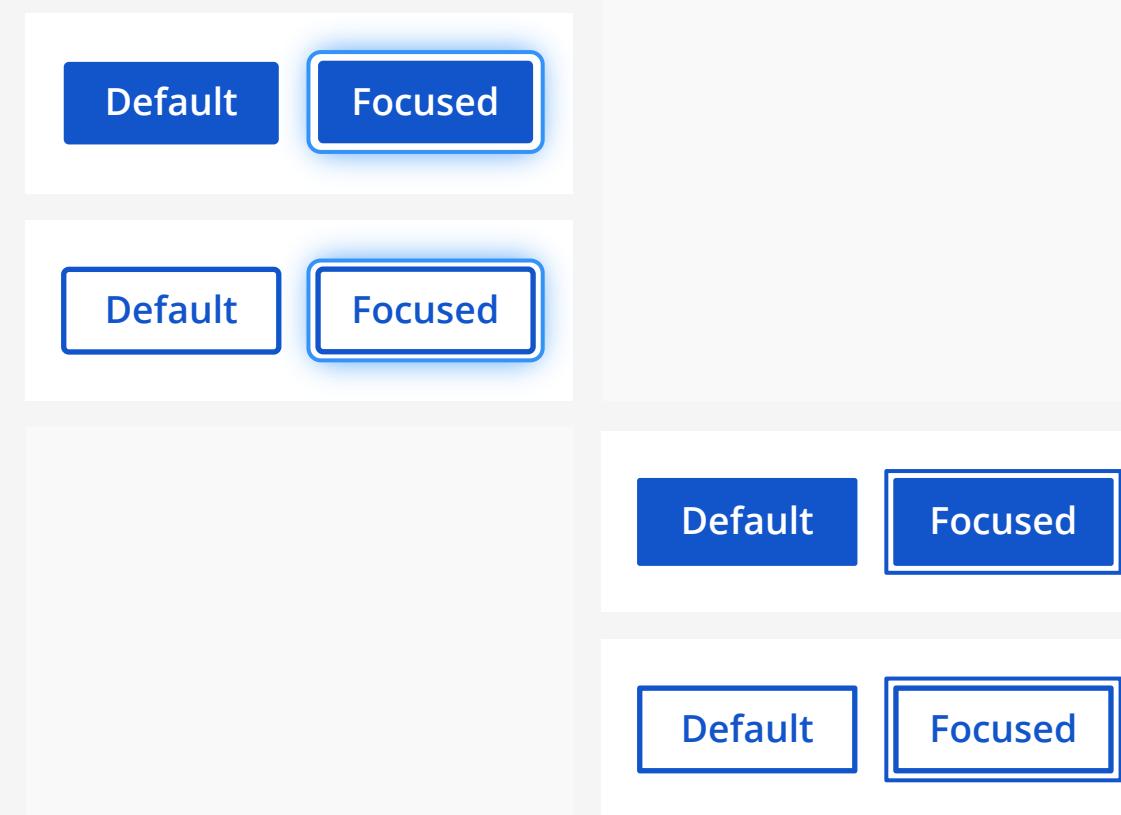
In the first set of buttons, the change is from white to cyan — at 3.14:1 this passes (it meets/exceeds 3:1). In the second set of buttons, the change is from white to cobalt — at 6.58:1 it also passes. (Again, we disregard the decorative glow.)

### Adjacent Contrast

Thanks to the gap between the outline and the element it surrounds, and the background color showing through the gap, we now only have to measure adjacent contrast against one color — white (for all interactive elements). Both cyan (top pair of examples) and cobalt (bottom pair of examples) against white exceed 3:1. Both examples pass.

### Befitting Signifiers

An outline is a classic signifier for the focus state. This passes.



## EXAMPLE 5: PASS

# 2-color double outline

### Minimum Area

The double-outline has a white inner stroke and a blue outer stroke, each 1.5px thick (exceeding the required 1px for solid lines). It also has a gap between the outline and the element that exceeds the necessary 1px to be noticeable. Overall, this passes the size req.

### Contrasting Area (Change of Contrast)

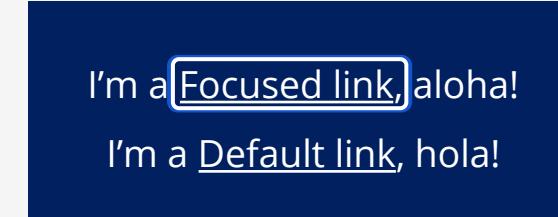
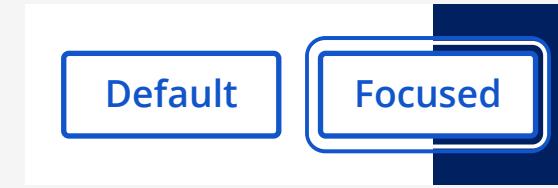
The change is from a white or dark-blue background to a white & blue double outline. When the white outline is visually consumed by the background, the blue outline carries the weight — white to blue exceeds 3:1 and passes. When the blue outline is visually consumed by the background, the white outline carries the weight — dark-blue to white exceeds 3:1 and passes. **A similar styling strategy:** a 2px+ dashed line, but instead of alternating between dashes and gaps, it's alternating between blue and white dashes (no gaps).

### Adjacent Contrast

White against blue or blue against white, they exceed 3:1 and pass. Since we've used a gap between the outline and the element it surrounds, we've saved this styling from failing. For example, without the gap the white buttons (on the dark background) would have visually consumed the white outline, and the dark background would have consumed the blue outline, leaving no noticeable focus outline, thereby failing. And same problem if the inner outline was blue instead of white, it would just fail on the blue buttons instead.

### Befitting Signifiers

Outlines are expected signifiers of focus. This passes.



Default Field:

Focused Field:

- Default
- Focused
- Default
- Focused

## EXAMPLE 6: FAIL

# Thin dashed outline

### Minimum Area

A 1 CSS px dashed outline around the whole component fails the size requirement, as it is roughly 50% of the surface area of a solid line. (In most browsers a dashed line will have roughly half the number of pixels due to gaps.)

### Contrasting Area (Change of Contrast)

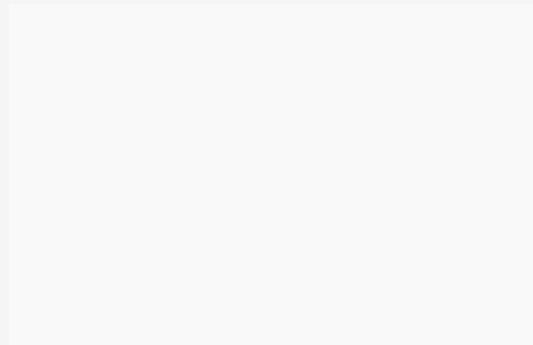
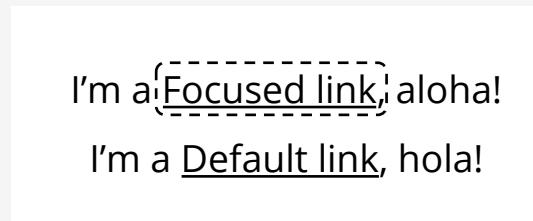
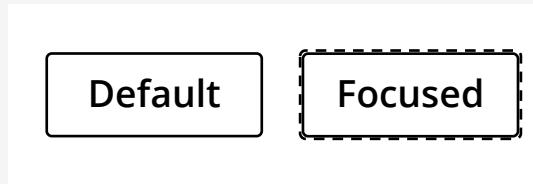
A change from the white background to the black dashed outline that now occupies that space, exceeds the required 3:1. This passes.

### Adjacent Contrast

In every instance, the black dashed outline needs to contrast with the element it's touching at 3:1+. In these examples, it passes against some and fails against others (e.g. the selected radio buttons, the secondary buttons.) It's tedious to check this on an entire website's worth of interactive elements, so a gap is recommended.

### Befitting Signifiers

A dashed outline is another common signifier of focus. This particular dashed line is hard to see. But dashed lines in general pass Befitting Signifiers.



Default Field:

Focused Field:

Default

Focused

Default

Focused

## EXAMPLE 7: PASS

# Thick dashed outline

### Minimum Area

The page background is dark blue with white text and interactive elements. When focus lands on an element, it's outlined with a bright yellow, 3px, dashed line. This passes the size requirement for dashed lines.

### Contrasting Area (Change of Contrast)

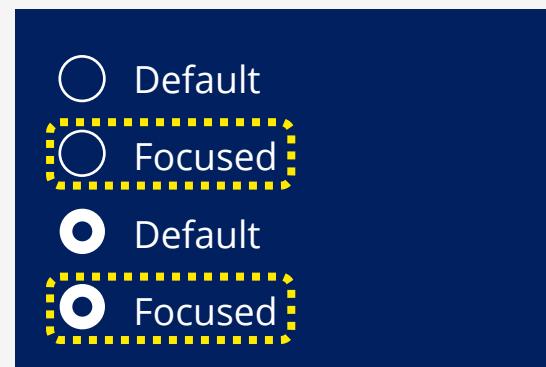
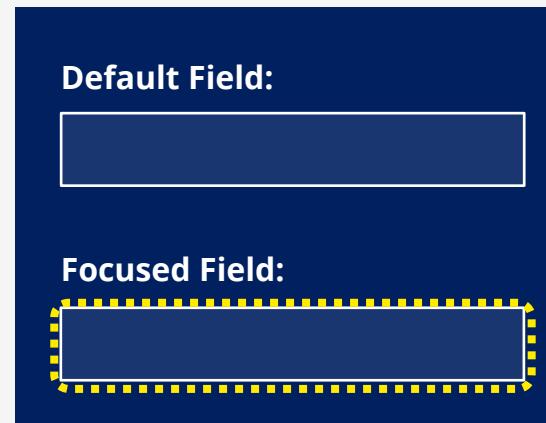
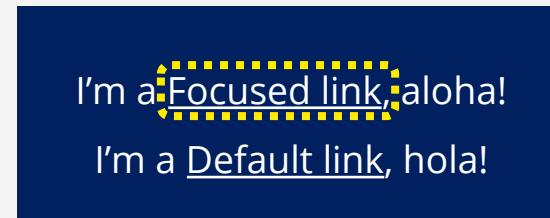
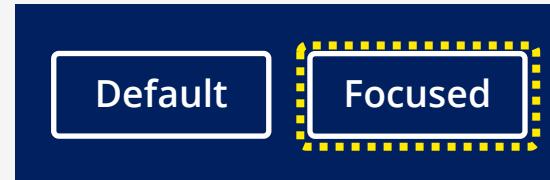
The area around these interactive elements is dark blue, so the change from that background color (dark blue) to the focus indicator color (bright yellow) that now occupies that space, must have a ratio of 3:1+. At 12.37:1, this passes.

### Adjacent Contrast

The bright yellow against white interactive elements fails (1.23:1), but thanks to the dashed line's thickness and gaps, there's enough of the dark blue background showing through to make the outline distinguishable and not blend in with the white elements.

### Befitting Signifiers

A thick outline (of some sort) has classically been used to signify the focus state, and would not be unexpected. This passes.



## EXAMPLE 8: FAIL

# Highlight color (aka change in background color)

### ✓ Minimum Area

Focus is indicated by a yellow highlight that fills the background of the focused element. Since it highlights the entire clickable area, this passes the size requirement. **Side note:** For a focused input field, a 1 CSS pixel wide vertical line (such as a blinking cursor) would fail the size requirement, and could not be relied on to indicate focus alone.

### ✗ Contrasting Area (Change of Contrast)

The change is from a white background to pale yellow. At 1.04:1, this fails to meet the required 3:1 contrast ratio. **Reminder:** the text color must maintain a 4.5:1+ ratio with the new background color — in these examples it does.

### ✗ Adjacent Contrast

In every instance, the yellow highlight needs to contrast with the element it's touching at 3:1+. Yellow against white — **fail**. Yellow against cobalt — pass. Yellow against black — pass. Yellow against dark-gray — pass.

### ✗ Befitting Signifiers

When a user clicks and drags their cursor over something, that's typically when a highlight is seen. If we stole that styling to use it for our focus indicators, it may lead to confusion. Also, this is not very flexible styling; how do you "highlight" a dark-colored element? Too drastic of a change to make the highlight work causes the element to look like something it's not (like in the case of the focused primary button, which now looks like a secondary button).

Default Focused

Default Focused

I'm a Focused link, aloha!

I'm a Default link, hola!

Default Field:

Focused Field:

Default Focused

Default Focused

Default Focused

Default Focused

## EXAMPLE 9: FAIL

# Solid vs. hollow fill (aka change in background color)

### Minimum Area

Upon receiving focus, the background color changes — this passes the size requirement.

### Contrasting Area (Change of Contrast)

The default background color and the new one need a 3:1+ contrast ratio with each other for the color change to be noticeable. In all of the instances shown, they change from blue/white to white/blue which is 4.9:1. Also, the text must maintain a 4.5:1+ ratio with its background. To achieve that, when the background color changes the text color does as well. This passes.

### Adjacent Contrast

The new background color must contrast 3:1+ with its adjacent colors, in every instance. In these examples it's white against blue and blue against white — they pass. (What about the blue against the dark-gray border of the input field and unselected radio button? The dark-gray is visually absorbed and becomes part of the blue shape, but no information / identifiability is lost, so it still passes. See [WCAG Non-Text Contrast](#) for more details on this.)

### Befitting Signifiers

Using this styling causes some elements to change signifiers. For example, the focused primary button now looks like a secondary button, the focused input field now looks like a solid rectangle, not something you can type into, and so on. This styling is not clearly signifying "focus". It fails.

The diagram illustrates the visual representation of focus states across different UI components:

- Buttons:** A row of two buttons. The left button is labeled "Default" and the right button is labeled "Focused". Both buttons have a blue outline and a white background.
- Text Input Fields:** A row of two input fields. The left field is labeled "Default Field" and the right field is labeled "Focused Field". The "Focused Field" has a solid blue background.
- Text Labels:** Two text labels: "I'm a Focused link, aloha!" and "I'm a Default link, hola!". The first label is in a blue-bordered box, and the second is in a black-bordered box.
- Radio Buttons:** A legend on the right side showing four states:
  - Default (unselected)
  - Focused (selected)
  - Default (selected)
  - Focused (unselected)

## EXAMPLE 10: PASS

# Thick underline

### Minimum Area

A thick (3px) underline, that's almost as long as the longest side of the button, meets the size requirements.

### Contrasting Area (Change of Contrast)

For the primary buttons, the dark-blue area that's now occupied by the yellow underline is a change from dark-blue to yellow, at 12.37:1 this passes. For the other elements, the white area that's now occupied by the dark-blue underline is white to blue which also exceeds the 3:1 requirement. This passes.

### Adjacent Contrast

In every instance, the underline must contrast with the element/color it's touching at 3:1+. The yellow underline against the dark blue passes. The dark blue against the white also passes.

### ? Befitting Signifiers

This styling is not common for signifying focus. From the buttons we can imagine how this styling would look on main navigation items or tabs; it may potentially be mistaken for the “current” state. But judging only the examples shown here, it’s unique, but I would say generally passes. **However**, usability testing would be needed to know for sure if this passes or fails Befitting Signifiers.

Default

Focused

Default

Focused

I'm a Focused link, aloha!

I'm a Default link, hola!

Default Field:

Focused Field:

Default

Focused

Default

Focused

# Sources

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- The 4 official criteria (what I've call "rules") are from: [Understanding Success Criterion 2.4.11: Focus Appearance \(Minimum\)](#)
- All photography is from: [Unsplash.com](#)

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