Understanding and Evaluating WCAG Contrast Requirements

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Color Contrast



Color Contrast

Luminance Contrast

Relative Luminance Contrast

Pure red is hard to read Pure green is even worse Pure blue is pretty good Pure red is hard to read Pure green is even worse Pure blue is pretty good

WCAG Contrast Formula

(L1 + 0.05) / (L2 + 0.05)where L = 0.2126 * R + 0.7152 * G + 0.0722 * B where R, G, and B = $R_{sRGB} \le 0.03928$ then $R = R_{sRGB}/12.92$ else R = $((R_{sRGB}+0.055)/1.055)^{\circ}$ 2.4 where $R_{sRGB} < = R_{8bit}/255$

Contrast ratio

21:1

1.4.3 Contrast (Minimum) – Level AA

4.5:1 3:1 – "Large" text

Gray (#767676) on White

Red (#E30000) on Yellow (#FFFF00)

Purple (#CC21CC) on White

BOLD: ≥14pt (18.67px)

≥18pt (24px)

WebAIM Contrast Checker

webaim.org/resources/contrastchecker/

"Images of text"

50 most played songs by genre

"Background color is the specified color of *content* over which the text is to be rendered in normal usage" Gradients and background images

Gradients and background images

"For text displayed over gradients and background images, authors should ensure that sufficient contrast exists for *each part* of each character in the content." For text displayed over gradients and background images, authors should ensure that sufficient contrast exists for *each part* of each character in the content. Gradients and background images

We have the same contrast ratio





Test contrast in WAVE

wave.webaim.org

Colorzilla

colorzilla.com

Exceptions

"Pure decoration"



"Inactive"

"Not visible to anyone"



"Logotypes"

50 most played songs by genre music

1.4.11 Non-text Contrast – WCAG 2.1, AA

- 3:1 contrast of:
 - User Interface Components
 - Including states (focus indicators, hover states, etc.)
 - Graphical Objects

Ul "Boundaries"

I have read and agree to the <u>Terms of Use</u>

UI "States"

I have read and agree to the <u>Terms of Use</u>

... except when "determined by user agent"

First Name

You break it you buy it

First Name

First name

Default keyboard focus outline



Differences Between States



3:1 between default and :focus



... or another visual cue



Chrome Developer Tools (DevTools)



Color		
Font	14px "Segoe UI", Ar	
Background	#1DA1F2	
Margin	0рх 0рх 16р	
Padding	6рх 16р	
Contrast	Aa 2.83 < 4.5	

Chrome DevTools

- 1. Go to <u>twitter.com</u>
- 2. Check contrast of the "Log In" button
- 3. Check its contrast with a hover state
- 4. Bonus Find an element that can't be tested with DevTools

See <u>webaim.org/articles/contrast/devtools</u> for help

"Graphical objects"



"Required to understand"



Colour Contrast Analyser

- 1. Download and install the <u>Colour</u> <u>Contrast Analyser</u>
- 2. Use the Eyedropper to choose colors
- 3. Click the sliders button (



- 4. Check "Synchronize colour values"
- 5. Use sliders to find a color with sufficient contrast

Contrast ratio	3.6:1		
Foreground colour			
	#6784D5	HEX 🔻	
		11 북 🖍 🔮	
Background colour		(white)	
	#FFFFFF	HEX 🔻	
		북 🖍 📀	
► Sample preview			
WCAG 2.1 results			
▶ 1.4.3 Contrast (Minimum) (AA)			
✓ Pass for large text only			
► 1.4.6 Contrast (Enhanced) (AAA)			
Second Fail for large and regular text			
► 1.4.11 Non-text Contrast (AA)			
Pass for UI components and graphical objects			

1.4.1 Use of Color – Level A

Requirements for color-reliant links

- 1. A 3:1 contrast ratio between link text and non-link text
- 2. An "additional visual cue" (typically underline) on mouse hover AND keyboard focus

You must read the Terms and Conditions.

WebAIM Link Contrast Checker

- 1. Go to webaim.org/resources/linkcontrastchecker/
- 2. Enter link color and body text color
- 3. Adjust levels to meet all 3 requirements:
 - 1. 4.5:1 Link to background
 - 2. 4.5:1 Body to background
 - 3. 3:1 Link to body

You must read the **Terms and Conditions**.

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Lightning Round

What issues do you need to check?

Subscribe to our email newsletter

- 4.5:1 Body text
- 4.5:1 Link text
- 3:1 Link to body
- Link underline on mouse hover and keyboard focus

- 3:1 Checkbox
- 3:1 Checkbox states
- 3:1 (or outline) Focus state to default state
- 3:1 Focus outline

Don't forget!







Don't forget to watch out for squirrels

Thank you!

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