



Learning Guide:

Welding Tints Green vs. Grey





Intro

When it comes to welding eye protection, tint matters. Whether a worker is performing torch cutting, soldering, brazing, or working around active welding, the lens shade of their safety eyewear plays a critical role in both eye protection and visual clarity.

Historically, green-tinted lenses have been the most common choice for weld shades. However, alternative grey-tinted shades are becoming more widely used due to their improved color accuracy while maintaining required protection levels.

This guide explains:

- What weld shades are
- How shade levels are assigned
- Regulatory requirements
- Differences between green and grey welding tints
- Why grey may be a safer choice in certain environments



What Is a Weld Shade?

A welding tint, often referred to in the field as a weld shade or “welding sunglasses”, is a lens that filters visible light and blocks harmful UV and IR radiation. Shade levels indicate how much visible light the lens allows through.

Standards & Regulations

Weld shade performance is defined by ANSI Z87.1, which outlines how lenses must protect workers from visible, ultraviolet (UV), and infrared (IR) radiation.

When working directly with welding applications, both OSHA 1910.252(b) and ANSI Z87.1 specify minimum shade numbers based on the welding process and the arc current (amps).





Common Shade Ranges

Shade 1.0-3.0

- For grinding, inspections, soldering
- Secondhand weld exposure
- Fire watch activities

Shade 3.0-5.0

- Light-duty welding
- Torch brazing
- Oxygen cutting
- Nearby work around welding

Shade 8.0-13.0

- Arc welding, MIG, TIG, plasma cutting

Shade 10.0-13.0

- Direct, high-intensity arc exposure

OSHA Reminder:

Workers directly involved and workers in or around welding areas must be protected with the appropriate shade level for both UV and IR exposure.

IR vs. Welding Lenses — Why It Matters

It's important to understand the difference between eyewear designed for IR protection and eyewear designed specifically for welding:

Welding Shades

- Primarily filter UV and the lower range of IR (780–1400 nm)
- Protect against visible, UV, and IR radiation from welding

IR-Specific Lenses

- Designed to filter a broader IR spectrum
- Do not guarantee proper UV protection for welding tasks

Using the wrong lens type can mean:

- Over-darkened vision
- Insufficient UV protection
- Increased risk of photokeratitis (corneal “sunburn”)
- Long-term vision issues
- Higher vulnerability to sparks and debris

Even short-term exposure without proper eyewear can result in:

- Delayed pain or discomfort
- Blurred or impaired vision
- Corneal irritation
- Increased long-term eye damage risk



Why Green-Tinted Weld Shades Became the Standard

Green welding lenses have traditionally been used because the tint helps block visible light and certain wavelengths of UV and IR required by ANSI and OSHA. However, green lenses have a known drawback: color distortion.

Green tint can make it more difficult to accurately see:

- Colored warning lights
- Signal indicators
- Control panels
- Color-coded safety signage

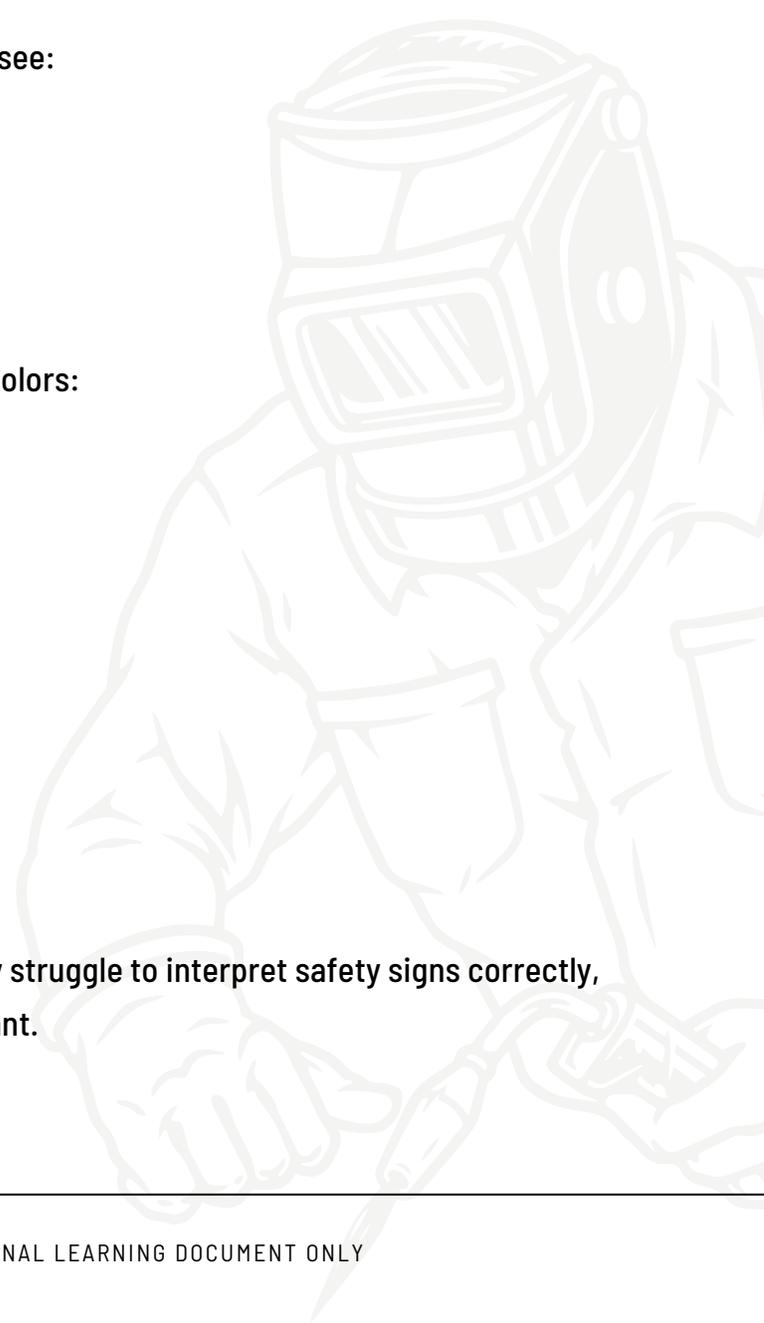
Because workplaces rely heavily on standardized colors:

- **Red** = danger
- **Yellow** = caution
- **Blue** = information
- **Green** = safety

Distorted color perception can:

- Slow hazard recognition
- Contribute to mistakes
- Increase accident risk

Studies show that nearly a third of workers already struggle to interpret safety signs correctly, making accurate color visibility even more important.



Grey-Tinted Welding Lenses: A Modern Alternative

Grey-tinted weld shades are increasingly used because they provide the same ANSI Z87.1 and OSHA-required protection while dramatically improving color accuracy.

Advantages of Grey Welding Tints:

- **Improved color recognition:** Workers can correctly identify red, yellow, green, and blue signals.
- **Reduced visual distortion:** More natural color perception and easier hazard recognition.
- **Better task clarity:** Especially valuable in environments with electrical panels, signal lighting, or color-coded processes.
- **Glare reduction:** Without overly darkening the field of view.
- **Full UV and IR protection:** Meets required shade levels and protects against radiation.

Shade Availability

- Many manufacturers offer weld shades in **1.7** and **3.0** tints.
- **OSHA requires shade 3.0** for specific applications.
- **Shade 1.7** may be used when IR protection is needed but the application does not mandate a higher shade.





Key Takeaway

Switching from green to grey-tinted welding eyewear might seem minor but it can significantly improve safety outcomes.

Grey welding tints provide:

- The same required UV/IR protection
- Better on-the-job awareness
- More accurate reading of safety signage and indicators
- Reduced visual distortion
- Compliance with OSHA and ANSI standards

For workers who perform or work around welding tasks, grey-tinted weld shades offer clearer vision without sacrificing any level of protection.