

CSA Standard Z94.3.1-02 Protective Eyewear: A User's Guide

Scope and Application:

This standard provides recommendations for proper selection of protective eyewear relative to the hazard or activity, including laser safety. It does not apply to dress eyewear even if it is identified as impact resistant. Impact resistance of safety eyewear shall meet the CAN/CSA-Z94.3 Industrial Eye and Face Protectors standard.

Manufacturer's of safety eyewear must ensure:

- CAN/CSA-Z94.3 standard for impact resistance is met,
- the lens is not pushed through the frame,
- the manufacturer's trademark, level of shade protection and certifying agency's logo is on the lens and frame or body,
- eyewear has side protection, and
- standard dimension requirements are met and eyewear is tested as a complete protector.

Properties and applications are outlined for various lens material (glass, polycarbonate and plastic), lens color (clear, tinted, photochromatic, polarized, filter lenses, specialty lenses) and lens coating (anti-scratch, anti-fog, anti-reflective, ultraviolet).

Laser protective eyewear is related to the type of laser and corresponding wavelength. Laser power determines the laser class (Class I, II, IIIa/ IIIb or IV laser) and optical density requirements for continuous wave laser. For pulsed laser energy pulse, duration and rep rate must be known. The standard outlines the eyewear requirements for the various classes of laser:

- Class I and II laser - safety eyewear is not required,
- Class III laser - safety eye wear should be worn,
- Class IV laser - safety eyewear must be worn for direct and scattered radiation.

Safety Eyewear Classes:

- Class 1 (A, B) – Spectacles – 1A side protectors, 1B side protectors and radiation protection
- Class 2 (A, B, C) - Goggles – 2A direct ventilated goggles, 2B non-ventilated goggles, 2C direct and non-ventilated with radiation protection
- Class 3 - Welding Helmets
- Class 4 - Welding Hand Shields
- Class 5 (A, B, C, D) - Non-Rigid Helmets (hoods) – 5A impact resistant window, 5B dust, splash, abrasive material protection, 5C radiation protection, 5D high heat applications
- Class 6 (A, B, C) - Face Shields – 6A impact and splash protection, 6B radiation protection, 6C high-heat application
- Class 7 (A, B, C, D) - Respirator Facepieces – 7A impact and splash protection, 7B radiation protection, 7C loose-fitting hoods and helmets, 7D loose-fitting with radiation protection.

Contact lenses are not recommended (referenced from CAN/CSA – Z 94.3 Industrial Eye and Face Protectors) in an industrial setting for hazardous work. If contact lenses are worn, eye protection is required.

Selection Guide recommends protectors based on the nature of the hazard and /or activity. In order to ensure eye protection, potential hazards must be identified and the appropriate type of eyewear selected, maintained and worn.

Proper fit is a firm but not too tight fit, as close to the eye as possible without hitting the lashes and should never interfere with body movement. Safety eyewear is not to be shared with others.

Care and Maintenance involves daily checks, cleaning, replacing or repairing pits or scratched parts, labeling with the user's name, never altering or modifying and storage.

This bulletin contains a summary of excerpts taken from the Standard, for general information only. This bulletin is not reflective of the complete requirements that the Standard prescribes.

Note: *Manitoba Regulation M.R. 217/2006 Section 1.4 inconsistency:*

If there is an inconsistency between this regulation and a requirement contained in a publication, code or standard referenced in this regulation, the provisions in this regulation prevail.