



# Minnesota Electrical Association

## Electrical Toolbox Talks

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### Eye and Face Safety

- Employees shall be provided with eye and face protection when machines or operations present potential eye or face injury from physical, chemical, or radiation agents.
- Eye and face protection equipment should meet requirements specified by the American National Standards Institute Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection.
- If an employee's vision requires the use of corrective lenses when required by OSHA Regulation 1926.102 to wear eye protection, the eye protection should be of the following types:
  - 1) spectacles whose protective lenses provide optical correction
  - 2) goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles
  - 3) goggles that incorporate corrective lenses mounted behind the protective lenses
- Face and eye protection equipment shall be kept clean and in good repair. The use of this type of equipment with structural defects is prohibited.
- Table 1-E (See chart on following page) shall be used as a guide in the selection of face and eye protection for the hazards and operations noted.
- Protectors shall meet the following minimum requirements. They shall:
  - 1) Provide adequate protection against the particular hazard for which they were designed.
  - 2) Fit snugly and shall not unduly interfere with the movements of the wearer.
  - 3) Be durable.
  - 4) Be capable of being disinfected.
  - 5) Be easily cleaned.
- Every protector shall be distinctly marked to facilitate identification only of the manufacturer.
- When the manufacturer indicates limitations or precautions, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.
- Employees exposed to laser beams shall be furnished with suitable laser safety goggles that will protect for the specific wavelength of the laser and be of optical density adequate for the energy involved.

More information on Eye and Face Protection can be found in the OSHA Regulations 1926 Subpart E.

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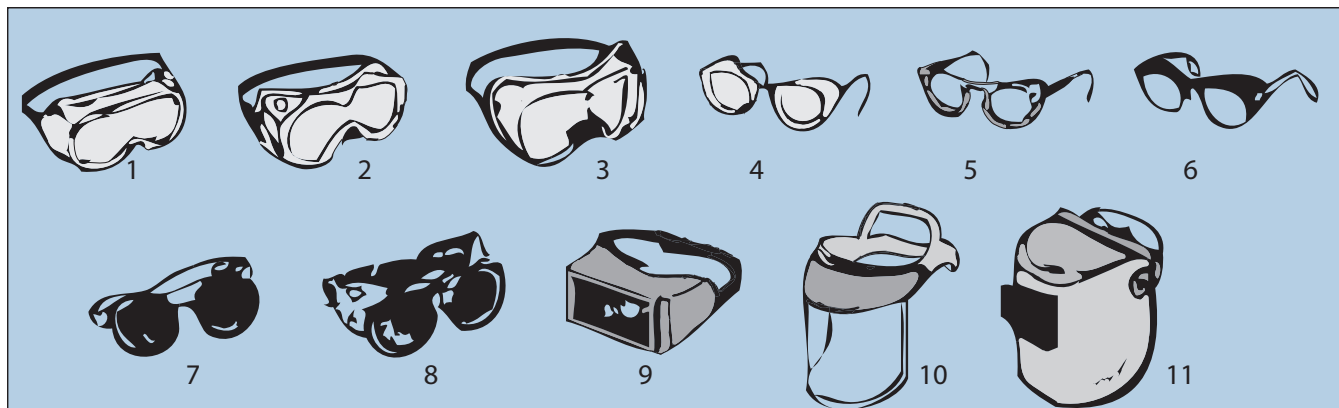
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# Eye and Face Safety

(continued)



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| <ul style="list-style-type: none"> <li>1. Goggles, flexible fitting - regular ventilation</li> <li>2. Goggles, flexible fitting - hooded ventilation</li> <li>3. Goggles, cushioned fitting - rigid body</li> <li>4. Spectacles, metal frame, with side shields (1)</li> <li>5. Spectacles, plastic frame - with side shields (1)</li> <li>6. Spectacles, metal-plastic frame - with side shields (1)</li> <li>7. Welding goggles, eyecup type - tinted lenses (2)</li> <li>7a. Chipping goggles, eyecup type - clear safety lenses</li> <li>8. Welding goggles, cover spec type - tinted lenses (2)</li> </ul> | <ul style="list-style-type: none"> <li>8a. Chipping goggles, cover spec type - clear safety lenses</li> <li>9. Welding goggles, cover spec type - tinted plate lens (2)</li> <li>10. Face shield (available with plastic or mesh window)</li> <li>11. Welding helmets (2)</li> </ul> <p>Footnote (1) Non-side shield spectacles are available for limited hazard use requiring only frontal protection.</p> <p>Footnote (2) See Table E-2, in paragraph (b) of this section, Filter Lens Shade Numbers for Protection Against Radiant Energy.</p> |
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**Chart 1926.102 subpart E -- Applications**

Operation	Hazards	Recommended protectors
Acetylene-burning Acetylene-cutting Acetylene-welding	Sparks, harmful rays, molten metal, flying particles.....	7, 8, 9
Chemical handling	Splash, acid burns, fumes.....	2, 10 (For severe exposure add 10 over 2)
Chipping.....	Flying particles.....	4, 3, 4, 5, 6, 7A, 8A
Electric (arc) welding.....	Sparks, intense rays, molten metal.....	9, 11, (11 in combination with 4, 5m 6m in tinted lenses advisable)
Furnace operations	Glare, heat, molten metal.....	7, 8, 9 (For severe exposure add 10)
Grinding-light.....	Flying particles.....	1, 3, 4, 5, 6, 10
Grinding-heavy.....	Flying particles.....	1, 6, 7A, 8A (For severe exposure add 10)
Laboratory.....	Chemical splash, glass breakage	2, (10 when in combination with 4, 5, 6)
Machines.....	Flying particles.....	1, 3, 4, 5, 6, 10
Molten metals.....	Heat, glare, sparks, splash.....	7, 8, (10 in combination with 4, 5, 6, in tinted lenses)
Spot-welding.....	Flying particles sparks. ....	1, 3, 4, 5, 6, 10

# Eye and Face Safety

(continued)

**TABLE E-2**  
*Filter lens shade numbers for protection against radiant energy*

<b>WELDING OPERATION</b>	<b>SHADE NUMBER</b>
Shielded metal-arc welding 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	12
Shielded metal-arc welding 3/16, 7/32, 1/4 inch diameter electrodes	12
5/16, 3/8 inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy), over 1/2 inch	6 or 8

**More information on Eye and Face Protection can be found at:**

- OSHA Regulations 1926 Subpart E or
- [www.cdc.gov/niosh/topics/eye/](http://www.cdc.gov/niosh/topics/eye/)
- [www.cdc.gov/niosh/topics/eye/toolbox-eye.html](http://www.cdc.gov/niosh/topics/eye/toolbox-eye.html)

