

4123:1-5-17 Appendix A

Eye and Face Protector Selection Guide

Figure

1. Goggles, Flexible Fitting, Regular Ventilation Type, Clear Safety
 2. Goggles, Flexible fitting, Hooded Ventilation Lenses (Not Illustrated)
 3. Goggles, Cushioned Fitting, Rigid Body Tinted
 - *4. Spectacles, without Sideshields Lenses (Illustrated)
 5. Spectacles, Eyecup Type Sideshields Safety
 6. Spectacles, Semi-/Flat-Fold Sideshields Lenses (Not Illustrated)
 - **7. Welding Goggles, Eyecup Type, Tinted Lenses
Converspec Type, Tinted
 - *8. Chipping Goggles, Eyecup Type, Clear Safety
 - **8. Welding goggles, Coverspec Type, Tinted
 - (Illustrated) Plate Lens
 - *9. Welding goggles, Converspec Type, Tinted
 - *10. Face shield, Plastic or Mesh Window (see caution note)
 - *11. Welding Helmet
- *Non-sideshield spectacles are available for limited hazard use requiring only frontal protection.

**See "Welding and cutting shade selection guide" of this appendix.

APPLICATIONS

| Operation | Hazards | Protectors |
|-------------------|-----------------------|------------|
| Acetylene-burning | Sparks, harmful rays, | |
| Acetylene-cutting | Molten metal, | 7,8,9 |
| Acetylene-welding | Flying particles | |

| | | |
|------------------------|---|---|
| Chemical handling | Splash, acid burns, fumes | 2 (For severe exposure add 10) |
| Chipping | Flying particles | 1,3,4,5,6,7A,8A |
| Electric (ARC) welding | Sparks, intense rays, tinted lenses, ad Molten metal visible) | 11 (In combination with 4, 5, 6, in |
| Furnace operations | Glare, heat, molten metal | 7, 8, 9 (For severe exposure add 10) |
| Grinding-light | Flying particles | 1, 3, 5, 6 (For severe exposure add 10) |
| Grinding-heavy | Flying particles | 1, 3, 7A, 8A (For severe exposure add 10) |
| Laboratory | Chemical Splash, | 2 (10 when in combination with 5, 6 Glass breakage |
| Machining | Flying particles | 1, 3, 5, 6 (For severe exposure add 10) |
| Molten metals | Heat, glare, sparks, splash | 7, 8 (10 in combination with 5, 6, in tinted lenses) |
| Spot welding | Flying particles, sparks | 1, 3, 4, 5, 6 (Tinted lenses advisable; for severe exposure add 10) |

Caution:

* Face shields alone do not provide adequate protection.

* Plastic lenses are advised for protection against molten metal splash.

* Contact lenses, of themselves, do not provide eye protection in the industrial sense and shall not be worn in a hazardous environment without appropriate covering safety eyewear.

Welding and cutting filter shade selection guide

The function of the eye protection required in paragraph (D)(2)(a) (iii) of rule 4123:1-5-17 is to protect the wearer from injurious rays and light generated by welding and cutting operations. The table which follows shall not be construed as specific requirements, but shall serve as a guide in determining the shade of filter plate desirable for a given operation. The following shades of filter plates should be used as indicated below:

| Shade | |
|---|----------------|
| Welding Operation | Number* |
| Shielded Metal-Arc Welding, up to 5/32 in (4mm) electrodes | 10 |
| Shielded Metal-Arc Welding, 3/16 to 1/4 in (4.8 to 6.4 mm) electrodes | 12 |
| Shielded Metal-Arc Welding, over 1/4 in (6.4 mm) electrodes | 14 |
| Gas Metal-Arc Welding (Nonferrous) | 11 |
| Gas Metal-Arc Welding (Ferrous) | 12 |
| Gas Tungsten-Arc Welding | 12 |
| Atomic Hydrogen Welding | <u>10-14</u> |
| Carbon Arc Welding | 14 |
| Torch Soldering | 2 |
| Torch Brazing | 3 or 4 |
| Light Cutting up to 1 in (25 mm) | 3 or 4 |
| Medium Cutting, 1 to 6 in (25 to 150 mm) | 4 or 5 |
| Heavy Cutting, over 6 in (150 mm) | 5 or 6 |
| Gas Welding (Light) up to 1/8 in (3.2 mm) | 4 or 5 |
| Gas Welding (Medium) 1/8 to 1/2 in (3.2 to 12.7 mm) | 5 or 6 |
| Gas Welding (Heavy over 1/2 in (12.7 mm) | 6 or 8 |

*The choice of a filter shade may be made on the basis of visual acuity and may, therefore, vary widely from one individual to another, particularly under different current densities, materials, and welding processes. However, the degree of protection from radiant energy afforded by the filter plate or lens when chosen to allow visual acuity will still remain in excess of the needs of eye filter protection. Filter plate shades as low as shade 8 have proven suitably radiation-absorbent for protection from the arc-welding processes.

NOTE: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the operation (spectrum).

Selecting laser safety glass

INTENSITY ATTENUATION

For Figure – To obtain the appendix, table, image, etc., please call LSC’s ERF Helpdesk at 614-387-2078 or send an email to erfhelpdesk@lsc.state.oh.us.

Respirator Selection Guide

OXIGEN DEFICIENCY

Self-contained breathing apparatus.
Combination supplied air respirator with
auxiliary self-contained air supply

GAS AND VAPOR CONTAMINANTS

Self –contained breathing apparatus.
Self-rescue mouthpiece respirator

Immediately dangerous
to life or health

(for escape only).
Combination supplied air respirator with
auxiliary self-contained air supply
respirator.

Not immediately dangerous
to life or health

Air-purifying, half-mask or mouth
piece respirator with chemical cartridge.

PARTICULATE CONTAMINANTS Immediately dangerous to life or health

Self-contained breathing apparatus
Self-rescue mouthpiece respirator (for
escape only).
Combination supplied air respirator
with auxiliary self-contained air supply.

Not immediately dangerous
to life or health

Air-purifying, half-mask or mouth-piece
respirator with cartridge.
Supplied air respirator.