

**North Carolina Department of Labor  
Occupational Safety and Health Division**

**Raleigh, North Carolina**

Field Information System

Standards Notice 38B

**Subject:** Eye and Face Protection for Chemical Use

**A. Standards.**

1. **29 CFR 1910.132(a) - Application.** Protective equipment including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation, physical contact.
2. **29 CFR 1910.132(c) - Design.** All personal protective equipment shall be of safe design and construction for the work to be performed.
3. **29 CFR, 1910.133(a)(1).** The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.
4. **29 CFR 1910.133(b)(1).** Protective eye and face devices shall comply with any of the following consensus standards: ANSI Z87.1-2003, ANSI Z87.1-1989 (R-1998), or ANSI Z87.1-1989 "American National Standard Practice for Occupational and Educational Eye and Face Protection," which are incorporated by reference, as specified in § 1910.6.
5. **29 CFR 1910.133(b)(2).** Eye and face protective devices that the employer demonstrates are at least as effective as protective eye and face protection devices that are constructed in accordance with one of the above consensus standards will be deemed to be in compliance with the requirements of this section.
6. **13 NCAC 07F .0202.** The employer is responsible for requiring the wearing of appropriate personal protective equipment (as described in 1926.28) in all operations where there is an exposure to hazardous conditions or where this part indicates the need for using such equipment to reduce the hazards to the employees.
7. **29 CFR 1926.102(a)(1).** Employees shall be provided with eye and face protection equipment when machines or operations present possible eye or face injury from physical, chemical, or radiation agents.

8. **29 CFR 1926.102(a)(2).** Eye and face protection equipment required by this Part shall meet the requirements specified in American National Standards Institute Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection.
9. **29 CFR 1926.102(a)(5).** Table E-1 shall be used as a guide in the selection of face and eye protection for the hazards and operations noted.
10. Additionally, many expanded health standards, such as benzene, formaldehyde, and ethylene oxide, reference 29 CFR 1910.132 and 1910.133.

B. **Discussion.**

Significant uncertainty and concern has been expressed regarding what is considered acceptable personal protective equipment for the eyes and/or face of personnel working with chemicals. Chemical usage may occur in almost any work environment, and usually involves hot or corrosive liquids, vapors, gases, and in some cases, solids. The hazards associated with these operations are physical or chemical burns to eyes or skin, eye or skin irritation, and/or distraction or temporary blindness resulting in other physical injury from operations or equipment involved. Because specific operations are too numerous to be considered individually, this notice will establish general guidelines for the type of eye and face protection required.

**Note:** The eye and face protector selection guide in the construction industry standard - Table E-1 of 29 CFR 1926.102(a)(5), originated from ANSI Z87.1-1968. For guidance on the selection of eye and face protection used in the general industry, reference the chart in ANSI Z87.1-2003.

C. **Interpretation.**

1. Based on the standards listed in above, the specific requirements of ANSI Z87.1 and the hazards involved the determination of eye and face protective equipment required with chemical use will be based on the following:
  - a. Highly corrosive or toxic by eye or skin absorption, liquids, vapors, gases, or airborne particles will require ventilated acid hood, full face respirator, or special protective suits.
  - b. Hot, strongly irritating, and/or corrosive liquids, vapors, gases, or airborne particles require both chemical goggles and face shield, or special chemical hood. **Note:** Direct vented goggles are not recommended for use in protection against liquid splash hazards.
  - c. Moderate irritants will require chemical goggles and face shield.
  - d. Irritating mists require cover goggles with either indirect ventilation or no ventilation, and may also be worn over spectacles.

**Note:** Face shields must be used only in conjunction with spectacles or goggles. See ANSI Z87.1-2003.

2. Degrees of irritation likely to result from exposure to chemicals may be determined by label information, manufacturer's data sheets, chemical dictionaries, and injury records. Factors that must be considered are exposure time, concentration, characteristic, and temperature. Mixtures of hazardous

chemicals may increase or reduce the overall hazard, but the hazard should be assumed to be that of the most hazardous component. Professional judgment guided by knowledgeable inquiry and evaluation is a most important factor in determining the hazard and deciding the level of protection required.

3. Where inadequate protection is provided or adequate protection is not used, a citation for violation of the appropriate standard shall normally be recommended by the compliance officer.

**Note:** This interpretation is addressed to the problem of eye and face protection only. Other protective equipment may be required for other exposures.

D. **Effective Date.**

SN 38A is canceled. This SN is effective on the date of signature. It will remain in effect until revised or canceled by the director.

Signed on Original  
Fleda Anderson  
Health Standards Officer

Signed on Original  
Allen McNeely  
Director

5/27/2011  
Date of Signature