

Eye and Face Protection in Maryland Schools



Maryland Code (State Law)

Maryland Code/EDUCATION /TITLE 7. PUBLIC SCHOOLS/SUBTITLE 4. HEALTH AND SAFETY OF STUDENTS /§ 7-407. Protective eye device.

§ 7-407. Protective eye device.

(a) *"Industrial quality eye protective device" defined.*- In this section, "industrial quality eye protective device" means a device that meets the standards of the American Standard Safety Code for Head, Eye, and Respiratory Protection, Z 2.1-1959, adopted by the American Standards Association, Incorporated.

(b) *Protective eye device required in certain courses.*- Each student and teacher in a school or other educational institution shall be required to wear an industrial quality eye protective device at all times while working in:

- (1) A career and technology classroom or laboratory that involves the use of or exposure to: (i) Hot molten metal; (ii) Milling, sawing, turning, shaping, cutting, or stamping of any solid material; (iii) Heat treatment, tempering, or kiln firing of any metal or other material; (iv) Gas or electric arc welding; (v) Repair or servicing of any vehicle; (vi) Any caustic or explosive material; or
- (2) A chemical or combined chemical-physical laboratory that involves any caustic or explosive chemical or hot liquid or solid.

(c) *Supply and purchase of protective eye devices.*-

- (1) The school may furnish industrial quality eye protective devices to its students and teachers and to any visitor to its classrooms or laboratories specified in subsection (b) of this section.
- (2) The school may buy these protective eye devices in large quantities and sell them at cost to its students and teachers.

[An. Code 1957, art. 77, § 89; 1978, ch. 22, § 2; 1996, ch. 10, § 16; ch. 77.]

COMAR (Code of Maryland Regulations) - 13A.06.06.01

<http://www.dsd.state.md.us/comar/13a/13a.06.06.01.htm>

.01 Protective Eye Devices.

Regulations governing the use and care of protective eye devices in the public schools of Maryland shall include the following:

A. Career and Technology Education or Technology Education Laboratories, or Visual Arts Classrooms and Studios.

(1) Protective Eye Devices for General Use. All students, teachers, and visitors upon entering and participating in career and technology education or technology education laboratories, or visual arts classrooms and studios in the public schools, where the activities enumerated in the law are in progress, shall be required to wear, for general use, protective eye devices meeting the specifications of the American National Standard: Practice for Occupational and Educational Eye and Face Protection, Z87.1-1979 and OSHA Safety and Health Standard 29 CFR §1910.133, both of which are incorporated by reference.

(2) Protective Eye Devices for Special Areas Within a Laboratory or Visual Arts Classroom or Studio.

(a) These devices shall meet the standards and specifications of the American National Standard: Practice for Occupational and Educational Eye and Face Protection, Z87.1-1979.

(b) Face Shields. A face shield shall be worn by an individual when participating in, or exposed to the immediate vicinity, where:

(i) Hot molten metal or solder is being prepared, poured, or used in any form;

(ii) Heat treatment, tempering, kiln firing of any metal or other materials takes place.

(c) Cup Goggles, Helmets, and Hand Shields.

(i) Gas Welding Area. An individual participating in or observing gas welding operations shall wear cup goggles with appropriate filter lenses and clear cover glass for eye protection in this activity area.

(ii) Electric Arc Welding. An individual participating in or observing electric arc welding operations shall wear a welding helmet or hand shield equipped with the appropriate filter lenses and clear cover glass for this activity.

(iii) Welding Flash Protection. Gas and electric arc welding working stations shall be screened off adequately so as to protect nonwelding students, teachers, and visitors from welding flash.

(d) Splash-Proof Vented Goggles or Face Shields. An individual using, exposed to, or observing the use of any caustic or explosive materials shall wear a splash-proof vented goggle or a face shield protective device.

B. Chemical or Combined Chemical-Physical Laboratories and Visual Arts Classrooms and Studios.

- (1) Protective eye devices shall be available in all courses in chemistry and biology, in all laboratory-centered general science courses, in physics and other physical science courses, and in ceramics, photography, and printmaking courses.
- (2) Protective Eye Devices for General Use.
 - (a) A general purpose goggle of clear plastic frame and lens, sufficient to protect against splashing and spattering, as provided in the American National Standard: Practice for Occupational and Educational Eye and Face Protection, Z87.1-1979, shall be considered adequate for basic protection purposes.
 - (b) A spectacle-type protective device or a general purpose goggle cited by the American Standards Association shall be available to protect visitors to the public schools' science and art department facilities.
- (3) Use of Protective Eye Devices.
 - (a) Common Classroom, Studio, or Laboratory Activity. All students, teachers, and visitors shall wear protective eye devices when caustic or explosive chemicals or hot liquids or solids are:
 - (i) Being used and manipulated by individuals within the classroom; or
 - (ii) Being used by groups of individuals during a laboratory or studio activity.
 - (b) Individual Project Activity. When less than the total class is engaged in activities involving caustic or explosive chemicals or hot liquids or solids, appropriate protective eye devices shall be worn by individuals:
 - (i) Directly involved and all individuals adjacent to the immediate vicinity of the activity; and
 - (ii) Working in preparation areas of the science laboratory.
 - (c) Teacher or Student Demonstrations. Every effort should be made to afford adequate protection during demonstrations. All demonstrators shall be adequately protected with eye protective devices during these periods.
- (4) Protective Eye Devices for Visitors. Protective eye devices shall be made available to all visitors entering science laboratories or visual arts classrooms and studios identified above. Visitors shall be required to wear the protective devices when caustic or explosive chemicals or hot liquids or solids are actually in use.

C. Provision and Maintenance of Eye Protective Devices. The local board of education shall adopt such regulations as may be necessary for the provision and maintenance of eye protective devices as required to meet the provisions of the law.

OSHA Regulations Eye and Face protection. - 1910.133 -

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9778

1910.133(a)

General requirements.

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.

1910.133(a)(2)

The employer shall ensure that each affected employee uses eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

1910.133(a)(3)

The employer shall ensure that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards wears eye protection that incorporates the prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

1910.133(a)(4)

Eye and face PPE shall be distinctly marked to facilitate identification of the manufacturer.

1910.133(a)(5)

The employer shall ensure that each affected employee uses equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation. The following is a listing of appropriate shade numbers for various operations.

Filter Lenses for Protection Against Radiant Energy				
Operations	Electrode Size 1/32 in.	Arc Current	Minimum (*) Protective Shade	
Shielded metal arc welding	Less than 3	Less than 60 ...	7	
	3-5	60-160	8	
	5-8	160-250	10	
	More than 8	250-550	11	
Gas metal arc welding and flux cored arc welding		less than 60 ...	7	
		60-160	10	
		160-250	10	
		250-500	10	
Gas Tungsten arc welding		less than 50 ...	8	
		50-150	8	
		150-500	10	
Air carbon	(Light)	less than 500 ..	10	
Arc cutting	(Heavy)	500-1000	11	
Plasma arc welding		less than 20 ...	6	
		20-100	8	
		100-400	10	
		400-800	11	
Plasma arc cutting	(light)(**)	less than 300 ..	8	
	(medium)(**)	300-400	9	
	(heavy)(**)	400-800	10	
Torch brazing			3	
Torch soldering			2	
Carbon arc welding			14	
Filter Lenses for Protection Against Radiant Energy				
Operations	Plate thickness-inches	Plate thickness-mm	Minimum (*) Protective Shade	
Gas Welding:				
	Light	Under 1/8	Under 3.2	4
	Medium	1/8 to 1/2	3.2 to 12.7	5
	Heavy	Over 1/2	Over 12.7	6
Oxygen cutting:				
	Light	Under 1	Under 25	3
	Medium	1 to 6	25 to 150	4
	Heavy	Over 6	Over 150	5

Footnote(*) As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or 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 (spectrum) operation.

Footnote(**) These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

1910.133(b)

Criteria for protective eye and face devices.

1910.133(b)(1)

Protective eye and face devices purchased after July 5, 1994 shall comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection," which is incorporated by reference as specified in Sec. 1910.6.

1910.133(b)(2)

Eye and face protective devices purchased before July 5, 1994 shall comply with the ANSI "USA standard for Occupational and Educational Eye and Face Protection," Z87.1-1968, which is incorporated by reference as specified in Sec. 1910.6, or shall be demonstrated by the employer to be equally effective.

[59 FR 16360, April 6, 1994; 59 FR 33910, July 1, 1994; 61 FR 9227, March 7, 1996; 61 FR 19547, May 2, 1996]