

WAC 204-10-026 Eye protection. If a vehicle does not have a windshield, and the driver is required to wear eye protection by chapter 46.37 RCW, the eye protection device (EPD) must:

(1) Be one of the following: Goggles, face shield, or eye glasses.

(a) Eye glasses must:

(i) Have a convex frontal surface on each lens, or be an ophthalmic corrective lens.

(ii) Have a minimum area of three square inches or 19.356 square centimeters for each lens. The horizontal diameter (or side-to-side measurement) must be no less than two inches or 50 millimeters. The vertical diameter (or top-to-bottom measurement) must be no less than one and one-half inches or 38 millimeters. A diameter must pass through a point on the lens that is intended to be directly in front of the pupil of the eye when the wearer is looking straight ahead.

(b) Optical correction of a person's vision, where required or desired, may be provided either:

(i) By an EPD that provides the proper optical correction; or

(ii) By personal corrective lenses worn under an EPD that does not disturb the adjustment of those lenses.

(2) Not have any sharp edges or projections that could cause harm or discomfort to the wearer.

(3) Be made of durable quality.

(4) Have a headband capable of holding the EPD securely under normal operating conditions. It must be capable of easy adjustment and replacement.

(5) Not use material(s) commonly known to cause skin irritation or disease for those parts of the device which come into contact with the skin.

(6) Where plastic materials are used, use noncombustible or slow burning materials.

(7) Not use cellulose nitrate, or materials having flammability characteristics approximately those of cellulose nitrate.

(8) Be tested on a standard human head form in a position simulating its position in actual use.

The test must:

(a) Use a steel projectile three-eighths inches in diameter, weighing 1.56 ounces approximately two and one-half inches long with a conical point of ninety degrees included angle, the point having a spherical radius no greater than .020 inches and a hardness of 60(10) on the Rockwell "C" scale, which must be freely dropped from a height of fourteen feet above the EPD. The projectile may be guided, but not restricted in its vertical fall by dropping it through a tube extending to within approximately four inches of the impact area. The impact area must be on the forward optical surface and within one-inch diameter circle centered over the eye opening. The impact point must be perpendicular to a plane tangent to the impact area.

(b) Not allow penetration of the projectile through the EPD. Cracking or piercing of the EPD is permissible provided that the projectile does not pass through or remain lodged in the EPD lens, but is repulsed by the EPD, and that no particles of the EPD will break loose from any eyeward surface of the EPD.

(c) Be performed at room temperature (sixty-five degrees to eighty-five degrees F) under normal humidity conditions.

(d) If plastic materials are used, expose the EPD to a test to determine the flame-propagation rate. The specimen must be ignited by holding one end of the specimen horizontally at the top of a luminous

three quarter-inch Bunsen burner flame in a draft-free room. The rate of propagation of burning, after removing the flame from the specimen, determined by a stop watch, must be one inch or less per twenty-four seconds. A faster rate of propagation will be cause for rejection.

(9) Have lenses that comply with the following requirements:

(a) Lenses must be made of material suitable for ophthalmic use, and must be free from striae, waves, bubbles, or any other defects which may impair their optical quality.

(b) The prismatic effect of a noncorrective lens must not exceed 1/8 diopter at any point with the specified minimum field of vision. In the case of eye glasses, each noncorrective lens must comply with the limitation of prismatic effect.

(c) In any meridian, the refractive power of a noncorrective lens must not exceed plus or minus 1/8 diopter and the difference between the refractive powers in any two meridians must not exceed 1/8 diopter.

(d) The definition afforded by a noncorrective lens must be such that a line pattern with lines separated not more than twenty-four seconds of angle must be clearly distinguishable when viewed through the lens.

(e) The compliance of a lens with the prismatic effects, refractive power, and definition requirements of (a), (b), and (c) of this subsection must be determined in accordance with those test methods described in Sections 6.3.4.1.1, 6.3.4.1.2, and 6.3.4.1.3 of the American National Standards Institute Standard Z87.1-1968, September 18, 1968, "Eye and Face Protection" and explained in Section 10.1 of the National Bureau of Standards Circular 533, May 20, 1953, "Method for Determining the Resolving Power of Photographic Lenses." In order to maintain consistency in the results of tests conducted by various organizations, the following test requirements must be met:

(i) An 8-power telescope with focusing arrangement to accommodate the refractive effects of both positive (converging) and negative (diverging) lenses placed between the telescope and test chart must be used. The illuminated target and test chart must be a central dot and a concentric circle one-inch in diameter plus one of the high contrast ("black and white") NBS Resolution Test Charts, dated 1952, and printed on "Lens Resolution Chart to Accompany NBS Circular 533." The chart must be perpendicularly aligned thirty-five feet from the objective lens of the telescope when the telescope is properly focused with no test, sample, or other lens between the objective lens and the chart. The center dot and the periphery of the concentric circle one-inch in diameter must be used when testing for prismatic effect. The test pattern marked "20" must be used when testing for refractive power and when testing for definition. Standard lenses of plus or minus 1/8 diopter must be used when testing for refractive power.

(ii) Other standard methods of test or examination that are equivalent or superior, as regards to accuracy, quality, and consistency of results to (e)(i) of this subsection specified in National Bureau of Standards methods, may be used to determine compliance only when such methods are approved by the state official to whom such approving authority has been assigned, or delegated, through due process of applicable state law.

(10) Not obstruct a horizontal field of vision to at least one hundred five degrees to the right side of the plane that passes through the pupil of the right eye looking straight ahead, and at least one hundred five degrees to the left side of the plane that passes through the pupil of the left eye looking straight ahead, and

are parallel to the midsagittal plane, except as provided in (a) of this subsection.

(a) The specified minimum horizontal field of vision must be unobstructed except that the horizontal field provided by the spectacles or sunglasses may be obstructed by the frame in a sector no greater than seven and one-half degrees in horizontal angular width and located between fifty degrees and eighty degrees of the pertinent sagittal plane passing through the eye pupil when looking straight ahead.

(b) When ascertaining the horizontal field of vision afforded by eyeglasses, the pupil of the eye must be assumed to be located 17 mm behind the point on the rear surface of the lens where the horizontal and vertical diameters intersect. When ascertaining the horizontal field of vision of EPDs other than eye glasses, the assumed location of the pupil of the eye relative to the structures of the EPD must be that location which is most likely to occur when the EPD is attached and worn in accordance with its manufacturer's instructions.

(c) No portion of the minimum horizontal field of vision will be obstructed by a temple piece, headband, helmet, helmet attaching device, or any other supporting or attaching device.

(11) Be clear (transmitting not less than eighty-five percent of incident visible radiation) or may be tinted provided that the tint does not impair the wearer's ability to discern color. If the EPD is tinted it must not be used at any time from a half hour after sunset to a half hour before sunrise and at any other time when due to insufficient light or unfavorable atmosphere conditions, persons and vehicles on the highway are not clearly discernible at a distance of five hundred feet ahead. The luminous transmittance must be determined by one of the following means:

(a) Photometrically by an observer having normal color vision, as determined by recognized color vision chart tests such as those employing pseudoisochromatic plates.

(b) With a physical photometer consisting of a thermopile (or other radiometer) and luminosity solution having a special transmittance curve which coincides closely with the luminous efficiency curve of the average eye.

(c) By measuring the special transmittance and calculating the luminous transmittance through the use of published data on the spectral radiant energy of CIE Source A and the relative luminous efficiency of the average eye.

The standard source of radiant energy used in the measurement of luminous transmittance must be a projection type lamp No. T-8 (or other high-powered, gas-filled tungsten filament incandescent lamp) operated at the color temperature (2854K) corresponding to CIE Source A.

(12) Be identified and labeled as follows:

(a) The EPD must be permanently marked in a manner not to interfere with the vision of the wearer.

(b) The manufacturer's or distributor's trade name and model name or number, which must correspond with the name and number under which the device has been approved or certified.

(c) That the device meets the standard VESC-8. Where space is limited, V-8 may be used in lieu of VESC-8.

(d) The information required under subsection (1) of this section plus the corporate or business name and address of either the actual manufacturer or the marketer assuming the responsibilities of the manufacturer must be imprinted on the container in which the EPD is packed and on any instruction sheet(s) pertaining to the EPD.

(e) If the EPD is tinted, the following statement must appear in a prominent location on the container or label: **This tinted eye protective device is for daytime use only.**

[Statutory Authority: RCW 46.37.005. WSR 15-19-102, § 204-10-026, filed 9/18/15, effective 10/19/15. Statutory Authority: RCW 46.37.005 and 46.37.320. WSR 08-19-079, § 204-10-026, filed 9/16/08, effective 10/17/08.]