

## § 1203.1

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SOURCE: 63 FR 11729, Mar. 10, 1998, unless otherwise noted.

### Subpart A—The Standard

#### § 1203.1 Scope, general requirements, and effective date.

(a) *Scope.* The standard in this subpart describes test methods and defines minimum performance criteria for all bicycle helmets, as defined in § 1203.4(b).

(b) *General requirements*—(1) *Projections.* All projections on bicycle helmets must meet the construction requirements of § 1203.5.

(2) *Labeling and instructions.* All bicycle helmets must have the labeling and instructions required by § 1203.6.

(3) *Performance tests.* All bicycle helmets must be capable of meeting the peripheral vision, positional stability, dynamic strength of retention system, and impact-attenuation tests described in §§ 1203.7 through 1203.17.

(4) *Units.* The values stated in International System of Units (“SI”) measurements are the standard. The inch-pound values stated in parentheses are for information only.

(c) *Effective date.* The standard shall become effective March 10, 1999 and shall apply to all bicycle helmets manufactured after that date. Bicycle helmets manufactured from March 17, 1995 through March 10, 1999, inclusive, are subject to the requirements of Subpart D, rather than this subpart A.

#### § 1203.2 Purpose and basis.

The purpose and basis of this standard is to reduce the likelihood of serious injury and death to bicyclists resulting from impacts to the head, pursuant to 15 U.S.C. 6001–6006.

#### § 1203.3 Referenced documents.

(a) The following documents are incorporated by reference in this standard. (1) Draft ISO/DIS Standard 6220–1983—Headforms for Use in the Testing of Protective Helmets.<sup>1</sup>

<sup>1</sup>Although the draft ISO/DIS 6220–1983 standard was never adopted as an international standard, it has become a consensus national standard because all recent major voluntary standards used in the United States for testing bicycle helmets establish

(2) SAE Recommended Practice SAE J211 OCT88, Instrumentation for Impact Tests.

(b) This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the standards may be obtained as follows. Copies of the draft ISO/DIS Standard 6220–1983 are available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036. Copies of the SAE Recommended Practice SAE J211 OCT88, Instrumentation for Impact Tests, are available from Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096. Copies may be inspected at the Office of the Secretary, Consumer Product Safety Commission, 4330 East-West Highway, Bethesda, Maryland 20814, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

#### § 1203.4 Definitions.

(a) *Basic plane* means an anatomical plane that includes the auditory meatuses (the external ear openings) and the inferior orbital rims (the bottom edges of the eye sockets). The ISO headforms are marked with a plane corresponding to this basic plane (see Figures 1 and 2 of this part).

(b) *Bicycle helmet* means any headgear that either is marketed as, or implied through marketing or promotion to be, a device intended to provide protection from head injuries while riding a bicycle.<sup>2</sup>

their headform dimensions by referring to the draft ISO standard.

<sup>2</sup>Helmets specifically marketed for exclusive use in a designated activity, such as skateboarding, rollerblading, baseball, roller hockey, etc., would be excluded from this definition because the specific focus of their marketing makes it unlikely that such helmets would be purchased for other than their stated use. However, a multi-purpose helmet—one marketed or represented as providing protection either during general use or in a variety of specific activities other

(c) *Comfort or fit padding* means resilient lining material used to configure the helmet for a range of different head sizes.

(d) *Coronal plane* is an anatomical plane perpendicular to both the basic and midsagittal planes and containing the midpoint of a line connecting the right and left auditory meatuses. The ISO headforms are marked with a transverse plane corresponding to this coronal plane (see Figures 1 and 2 of this part).

(e) *Field of vision* is the angle of peripheral vision allowed by the helmet when positioned on the reference headform.

(f) *Helmet positioning index ("HPI")* is the vertical distance from the brow of the helmet to the reference plane, when placed on a reference headform. This vertical distance shall be specified by the manufacturer for each size of each model of the manufacturer's helmets, for the appropriate size of headform for each helmet, as described in § 1203.10.

(g) *Midsagittal plane* is an anatomical plane perpendicular to the basic plane and containing the midpoint of the line connecting the notches of the right and left inferior orbital ridges and the midpoint of the line connecting the superior rims of the right and left auditory meatuses. The ISO headforms are marked with a longitudinal plane cor-

than bicycling—would fall within the definition of bicycle helmet if a reasonable consumer could conclude, based on the helmet's marketing or representations, that bicycling is among the activities in which the helmet is intended to be used. In making this determination, the Commission will consider the types of specific activities, if any, for which the helmet is marketed, the similarity of the appearance, design, and construction of the helmet to other helmets marketed or recognized as bicycle helmets, and the presence, prominence, and clarity of any warnings, on the helmet or its packaging or promotional materials, against the use of the helmet as a bicycle helmet. A multi-purpose helmet marketed without specific reference to the activities in which the helmet is to be used will be presumed to be a bicycle helmet. The presence of warnings or disclaimers advising against the use of a multi-purpose helmet during bicycling is a relevant, but not necessarily controlling, factor in the determination of whether a multi-purpose helmet is a bicycle helmet.

responding to the midsagittal plane (see Figures 1 and 2 of this part).

(h) *Modular elastomer programmer ("MEP")* is a cylindrical pad, typically consisting of a polyurethane rubber, used as a consistent impact medium for the systems check procedure. The MEP shall be 152 mm (6 in) in diameter, and 25 mm (1 in) thick and shall have a durometer of  $60 \pm 2$  Shore A. The MEP shall be affixed to the top surface of a flat 6.35 mm ( $\frac{1}{4}$  in) thick aluminum plate. See § 1203.17(b)(1).

(i) *Preload ballast* is a "bean bag" filled with lead shot that is placed on the helmet to secure its position on the headform. The mass of the preload ballast is 5 kg (11 lb).

(j) *Projection* is any part of the helmet, internal or external, that extends beyond the faired surface.

(k) *Reference headform* is a headform used as a measuring device and contoured in the same configuration as one of the test headforms A, E, J, M, and O defined in draft ISO DIS 6220-1983. The reference headform shall include surface markings corresponding to the basic, coronal, midsagittal, and reference planes (see Figures 1 and 2 of this part).

(l) *Reference plane* is a plane marked on the ISO headforms at a specified distance above and parallel to the basic plane (see Figure 3 of this part).

(m) *Retention system* is the complete assembly that secures the helmet in a stable position on the wearer's head.

(n) *Shield* means optional equipment for helmets that is used in place of goggles to protect the eyes.

(o) *Spherical impactor* is an impact fixture used in the instrument system check of § 1203.17(b)(1) to test the impact-attenuation test equipment for precision and accuracy. The spherical impactor shall be a 146 mm (5.75 in) diameter aluminum sphere mounted on the ball-arm connector of the drop assembly. The total mass of the spherical-impactor drop assembly shall be  $5.0 \pm 0.1$  kg ( $11.0 \pm 0.22$  lb).

(p) *Test headform* is a solid model in the shape of a human head of sizes A, E, J, M, and O as defined in draft ISO/DIS 6220-1983. Headforms used for the impact-attenuation test shall be constructed of low-resonance K-1A magnesium alloy. The test headforms shall

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include surface markings corresponding to the basic, coronal, midsagittal, and reference planes (see Figure 2 of this part).

(q) *Test region* is the area of the helmet, on and above a specified impact test line, that is subject to impact testing.

### § 1203.5 Construction requirements—projections.

Any unfaired projection extending more than 7 mm (0.28 in.) from the helmet's outer surface shall break away or collapse when impacted with forces equivalent to those produced by the applicable impact-attenuation tests in § 1203.17 of this standard. There shall be no fixture on the helmet's inner surface projecting more than 2 mm into the helmet interior.

### § 1203.6 Labeling and instructions.

(a) *Labeling*. Each helmet shall be marked with durable labeling so that the following information is legible and easily visible to the user:

(1) Model designation.

(2) A warning to the user that no helmet can protect against all possible impacts and that serious injury or death could occur.

(3) A warning on both the helmet and the packaging that for maximum protection the helmet must be fitted and attached properly to the wearer's head in accordance with the manufacturer's fitting instructions.

(4) A warning to the user that the helmet may, after receiving an impact, be damaged to the point that it is no longer adequate to protect the head against further impacts, and that this damage may not be visible to the user. This label shall also state that a helmet that has sustained an impact should be returned to the manufacturer for inspection, or be destroyed and replaced.

(5) A warning to the user that the helmet can be damaged by contact with common substances (for example, certain solvents [ammonia], cleaners [bleach], etc.), and that this damage may not be visible to the user. This label shall state in generic terms some recommended cleaning agents and procedures (for example, wipe with mild soap and water), list the most common

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substances that damage the helmet, warn against contacting the helmet with these substances, and refer users to the instruction manual for more specific care and cleaning information.

(6) *Signal word*. The labels required by paragraphs (a) (2) through (5) of this section shall include the signal word "WARNING" at the beginning of each statement, unless two or more of the statements appear together on the same label. In that case, the signal word need only appear once, at the beginning of the warnings. The signal word "WARNING" shall be in all capital letters, bold print, and a type size equal to or greater than the other text on the label.

(b) *Instructions*. Each helmet shall have fitting and positioning instructions, including a graphic representation of proper positioning.

### § 1203.7 Samples for testing.

(a) *General*. Helmets shall be tested in the condition in which they are offered for sale. To meet the standard, the helmets must be able to pass all tests, both with and without any attachments that may be offered by the helmet's manufacturer and with all possible combinations of such attachments.

(b) *Number of samples*. To test conformance to this standard, eight samples of each helmet size for each helmet model offered for sale are required.

### § 1203.8 Conditioning environments.

Helmets shall be conditioned to one of the following environments prior to testing in accordance with the test schedule at § 1203.13. The barometric pressure in all conditioning environments shall be 75 to 110 kPa (22.2 to 32.6 in of Hg). All test helmets shall be stabilized within the ambient condition for at least 4 hours prior to further conditioning and testing. Storage or shipment within this ambient range satisfies this requirement.

(a) *Ambient condition*. The ambient condition of the test laboratory shall be within 17 °C to 27 °C (63 °F to 81 °F), and 20 to 80% relative humidity. The ambient test helmet does not need further conditioning.

(b) *Low temperature*. The helmet shall be kept at a temperature of –17 °C to