

§ 1512.15

(350 in-lb) of energy, whichever results in the greater force, in accordance with the frame test, §1512.18(k)(2), without visible evidence of fracture or frame deformation that significantly limits the steering angle over which the wheel can be turned. Sidewalk bicycles are exempt from this section.

§ 1512.15 Requirements for seat.

(a) *Seat limitation.* No part of the seat, seat supports, or accessories attached to the seat shall be more than 125 mm (5.0 in.) above the top of the seat surface at the point where the seat surface is intersected by the seat post axis.

(b) *Seat post.* The seat post shall contain a permanent mark or ring that clearly indicates the minimum insertion depth (maximum seat-height adjustment); the mark shall not affect the structural integrity of the seat post. This mark shall be located no less than two seat-post diameters from the lowest point on the post shaft, and the post strength shall be maintained for at least a length of one shaft diameter below the mark.

(c) *Adjustment clamps.* The seat adjustment clamps shall be capable of securing the seat in any position to which it can be adjusted and preventing movement of the seat in any direction under normal conditions of use. Following the road test, §1512.18(p) (or the sidewalk bicycle proof test, §1512.18(q), as applicable), the seat clamps shall be tested in accordance with the seat adjustment clamps and load test, §1512.18(l).

§ 1512.16 Requirements for reflectors.

Bicycles shall be equipped with reflective devices to permit recognition and identification under illumination from motor vehicle headlamps. The use of reflector combinations off the center plane of the bicycle (defined in §1512.18(m)(2)) is acceptable if each reflector meets the requirements of this section and of §1512.18 (m) and (n) and the combination of reflectors has a clear field of view of $\pm 10^\circ$ vertically and $\pm 50^\circ$ horizontally. Sidewalk bicycles are not required to have reflectors.

(a) *Front, rear, and pedal reflectors.* There shall be an essentially colorless front-facing reflector, essentially

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colorless or amber pedal reflectors, and a red rear-facing reflector.

(b) *Side reflectors.* There shall be retroreflective tire sidewalls or, alternatively, reflectors mounted on the spokes of each wheel, or, for non-caliper rim brake bicycles, retroreflective wheel rims. The center of spoke-mounted reflectors shall be within 76 mm (3.0 in.) of the inside of the rim. Side reflective devices shall be visible on each side of the wheel.

(c) *Front reflector.* The reflector or mount shall not contact the ground plane when the bicycle is resting on that plane in any orientation. The optical axis of the reflector shall be directed forward within 5° of the horizontal-vertical alignment of the bicycle when the wheels are tracking in a straight line, as defined in §1512.18(m)(2). The reflectors and/or mounts shall incorporate a distinct, preferred assembly method that shall insure that the reflector meets the optical requirements of this paragraph (c) when the reflector is attached to the bicycle. The front reflector shall be tested in accordance with the reflector mount and alignment test, §1512.18(m).

(d) *Rear reflector.* The reflector or mount shall not contact the ground plane when the bicycle is resting on that plane in any orientation. The reflector shall be mounted such that it is to the rear of the seat mast with the top of the reflector at least 76 mm (3.0 in) below the point on the seat surface that is intersected by the line of the seat post. The optical axis of the reflector shall be directed rearward within 5° of the horizontal-vertical alignment of the bicycle when the wheels are traveling in a straight line, as defined in §1512.18(m)(2). The reflectors and/or mounts shall incorporate a distinct, preferred assembly method that shall insure that the reflector meets the optical requirements of this paragraph (d) when the reflector is attached to the bicycle. The rear reflector shall be tested in accordance with the reflector mount and alignment test, §1512.18(m).

(e) *Pedal reflectors.* Each pedal shall have reflectors located on the front and rear surfaces of the pedal. The reflector elements may be either integral with