

§ 1213.3

Bed end structure means an upright unit at the head and foot of the bed to which the side rails attach.

Bunk bed means a bed in which the underside of any foundation is over 30 inches (760 mm) from the floor.

Foundation means the base or support on which a mattress rests.

Guardrail means a rail or guard on a side of the upper bunk to prevent a sleeping occupant from falling or rolling out.

§ 1213.3 Requirements.

(a) *Guardrails.* (1) Any bunk bed shall provide at least two guardrails, at least one on each side of the bed, for each bed having the underside of its foundation more than 30 inches (760 mm) from the floor.

(2) One guardrail shall be continuous between each of the bed's end structures. "Continuous" means that any gap between the guardrail and end structure shall not exceed 0.22 inches (5.6 mm) (so as to not cause a finger entrapment hazard for a child).

(3) The other guardrail may terminate before reaching the bed's end structures, providing there is no more than 15 inches (380 mm) between either end of the guardrail and the nearest bed end structures.

(4) For bunk beds designed to have a ladder attached to one side of the bed, the continuous guardrail shall be on the other side of the bed.

(5) Guardrails shall be attached so that they cannot be removed without either intentionally releasing a fastening device or applying forces sequentially in different directions.

(6) The upper edge of the guardrails shall be no less than 5 inches (130 mm) above the top surface of the mattress when a mattress of the maximum thickness specified by the bed manufacturer's instructions is on the bed. This requirement does not prohibit a wall-side guardrail that terminates in a quarter-circle bend and attaches to the side rail of the upper bunk foundation.

(7) With no mattress on the bed, there shall be no openings in the structure between the lower edge of the uppermost member of the guardrail and the underside of the upper bunk's foundation that would permit passage of

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the wedge block shown in Figure 1 of this part when tested in accordance with the procedure at § 1213.4(a).

(b) *Bed end structures.* (1) The upper edge of the upper bunk end structures shall be at least 5 inches (130 mm) above the top surface of the mattress for at least 50 percent of the distance between the two posts at the head and foot of the upper bunk when a mattress and foundation of the maximum thickness specified by the manufacturer's instructions is on the bed.

(2) With no mattress on the bed, there shall be no openings in the end structures above the foundation of the upper bunk that will permit the free passage of the wedge block shown in Figure 1 when tested in accordance with the procedure at § 1213.4(b).

(3) When tested in accordance with § 1213.4(c), there shall be no openings in the end structures between the underside of the foundation of the upper bunk and upper side of the foundation of the lower bunk that will permit the free passage of the wedge block shown in Figure 1, unless the openings are also large enough to permit the free passage of a 9-inch (230-mm) diameter rigid sphere.

(4) All portions of the boundary of any opening required by §§ 1213.4(c)(1) and (2) to be probed by the wedge block of Figure 1, and that permits free passage of a 9-inch diameter sphere, must conform to the neck entrapment requirements of § 1213.4(c)(3).

§ 1213.4 Test methods.

(a) *Guardrails* (see § 1213.3(a)(6)). With no mattress on the bed, place the wedge block shown in Figure 1, tapered side first, into each opening in the bed structure below the lower edge of the uppermost member of the guardrail and above the underside of the upper bunk's foundation. Orient the block so that it is most likely to pass through the opening (*e.g.*, the major axis of the block parallel to the major axis of the opening) ("most adverse orientation"). Then gradually apply a 33-lbf (147-N) force in a direction perpendicular to the plane of the large end of the block. Sustain the force for 1 minute.

(b) *Upper bunk end structure* (see § 1213.3(b)(2)). Without a mattress or foundation on the upper bunk, place