

sheeting meeting the technical requirements of this part.

**§ 224.105 Size and location.**

(a) *Railroad freight cars.* The amount of retroreflective sheeting to be applied to each car is dependent on the length of the car. For purposes of this part, the length of a car is measured from endsill to endsill, exclusive of the draft gear.

(1) *General rule.* On railroad freight cars other than tank cars, flat cars, and cars of special construction (as defined in paragraph (a)(4) of this section), retroreflective sheeting shall be applied vertically to each car side, with its bottom edge as close as practicable to 42 inches above the top of the rail. Either a minimum of one 4x36 inch strip or a minimum of two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between the ends of the car, a minimum of one 4x18 inch strip shall be applied at equal intervals that shall not exceed 10 feet.

(2) *Tank cars.* On tank cars, retroreflective sheeting shall be applied vertically to each car side and centered on the horizontal centerline of the tank, or as near as practicable. If it is not practicable to safely apply the sheeting centered on the horizontal centerline of the tank, the sheeting may be applied vertically with its top edge no lower than 70 inches above the top of the rail, as practicable. A minimum of either one 4x36 inch strip or two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between the ends of the car a minimum of one 4x18 inch strip shall be applied at equal intervals that shall not exceed 10 feet.

(3) *Flat cars.* On flat cars, a minimum of two 4x18 inch strips, one next to the other, shall be applied vertically to each car side as close to each end of the car as practicable. The bottom edges of these 4x18 inch strips shall be no lower than 30 inches above the top of the rail, as practicable. A minimum of one 4x18 inch strip shall be applied vertically as can be best fit at equidistant intervals between each end, with the bottom edge of each strip no lower than 42 inches from the top of the rail, as practicable. Between the ends of the car, a minimum of one 4x18 inch strip shall be applied at equal intervals that shall not exceed 10 feet. When vertical application of a 4x18 inch strip is not feasible, the sheeting may be applied vertically in three 4x6 inch strips placed directly next to each other or as close as practicable, or placed horizontally along the sill of the car.

(4) *Cars of special construction.* This paragraph applies to any car the design

of which is not compatible with the patterns of application otherwise provided in this section. Retroreflective sheeting shall conform as close as practicable to the requirements of paragraphs (a)(1) through (a)(3) of this section and shall have the following amount of sheeting equally distributed between both sides of the car:

(i) For cars less than 50 feet long, a minimum of seven square feet of sheeting;

(ii) For cars that are 50 to 60 feet long, a minimum of eight square feet of sheeting; and

(iii) For cars greater than 60 feet long, one additional square foot of sheeting for every additional 10 feet of length.

(b) *Locomotives:*

(1) For locomotives that are less than 50 feet long, a minimum of seven square feet of sheeting must be equally distributed between both sides of the locomotive in a pattern recognizable to motorists.

(2) For locomotives 50 feet long or greater, an additional square foot of sheeting must be equally distributed between both sides of the locomotive for every additional 10 feet of length. The sheeting must be distributed in a pattern recognizable to motorists.

(3) For any locomotive, application of material horizontally along the sill or side walkway of the locomotive shall be considered a pattern recognizable to motorists.

**§ 224.107 Application of retroreflective sheeting.**

(a) *Railroad freight cars.* All railroad freight cars subject to this part must be equipped with retroreflective sheeting conforming to this part by 10 years after the effective date of the final rule. If a car already has reflective material applied that does not meet the standards of this part, it is not necessary to remove the material unless its placement interferes with the placement of the sheeting required by this part.

(1) *New cars.* Retroreflective sheeting conforming to this part must be applied to all new cars at the time of construction.

(2) *Existing cars without retroreflective sheeting.*

(i) If as of the date of publication of the final rule a car subject to this part is not equipped on each side with at least one square foot of retroreflective sheeting as specified in paragraph (a)(3) of this section, retroreflective sheeting conforming to this part must be applied to the car at the earliest of the following occasions occurring after the effective date of the rule or in accordance with paragraph (a)(2)(ii) of this section:

(A) When the car is repainted or rebuilt; or

(B) When the car first undergoes a single car air brake test as prescribed by 49 CFR 232.305. Application may be deferred until the second such test if it is more practicable to do so and the test will be made before 10 years after the effective date of the final rule.

(ii) A freight rolling stock owner may elect not to follow the schedule in paragraph (a)(2)(i) of this section if, not later than 60 days after the effective date of the final rule, the freight rolling stock owner submits to FRA a Fleet Reflectorization Implementation Plan designating the car numbers constituting the fleet subject to this part and affirming that the cars will be equipped with retroreflective sheeting as required by this part such that not less than 20 percent of the total fleet subject to this part shall be equipped within 24 months following the effective date of the final rule and not less than an additional 10 percent of the total fleet shall be completed each 12-month period thereafter for the duration of the 10-year period. See Appendix B of this part. Thereafter,

(A) The designated fleet shall be equipped with retroreflective sheeting according to the requirements of this paragraph (a)(2)(ii); and

(B) If, following the conclusion of the initial 24-month period or any 12-month period thereafter, the percentage requirements of this section have not been met—

(1) The freight rolling stock owner shall be considered in violation of this part;

(2) The freight rolling stock owner shall, within 60 days of the close of the period, report the failure to the Associate Administrator;

(3) The requirements of paragraph (a)(2)(i) of this section shall apply to all railroad freight cars subject to this part in the fleet;

(4) The percentage requirements of this paragraph (a)(2)(ii) shall continue to apply; and

(5) The fleet owner shall take such additional action as may be necessary to achieve future compliance.

(C) Cars to be retired shall be included in the fleet total until they are retired.

(3) *Existing cars with retroreflective sheeting.* If as of the date of publication of the final rule a car is equipped on each side with at least one square foot of retroreflective sheeting, uniformly distributed over the length of each side, that car shall be considered in compliance with this part for a period of 10 years from the effective date of the final rule, provided the sheeting is not engineering grade, super engineering grade (enclosed lens), or glass bead encapsulated type sheeting, and