

§ 224.106 Location of retroreflective sheeting.

(a) *Railroad freight cars.* The retroreflective sheeting shall be applied along the length of each railroad freight car side in the manner provided by a uniform industry standard approved by the Associate Administrator that provides for distribution of material along the length of each car and as close as practicable to 42 inches above the top of rail. In the event such an industry standard is not proffered, or is not approved by the Associate Administrator, the criteria set forth in this subpart shall apply. Retroreflective sheeting applied under this part must be located clear of appurtenances and devices such as ladders and other safety appliances, pipes, or other attachments that may obscure its visibility. Retroreflective sheeting need not be applied to discontinuous surfaces such as bolts, rivets, door hinges, or other irregularly shaped areas that may prevent the sheeting from adhering to the car sides. In addition, retroreflective sheeting need not be applied over existing or required car stencils and markings. If necessary to avoid appur-

tenances, discontinuous surfaces, or existing or required car markings or stencils, a 4×18 inch strip of retroreflective sheeting may be separated into two 4×9 inch strips, or a 4×36 inch strip may be separated into four 4×9 inch strips, and applied on either side of the appurtenance, discontinuous surface, or car markings or stencils.

(1) *General rule.* On railroad freight cars other than flat cars and tank cars, retroreflective sheeting shall be applied in either a vertical or horizontal pattern along the length of the car sides, with the bottom edge of the sheeting as close as practicable to 42 inches above the top of rail. Retroreflective sheeting shall not be applied below the side sill.

(i) *Vertical application.* If retroreflective sheeting is applied in a vertical pattern, at least one 4×36 inch strip or two 4×18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between these two vertical end strips, a minimum of one 4×18 inch strip shall be applied at least every 12 feet. *See* Figures 1, 2, and 3.

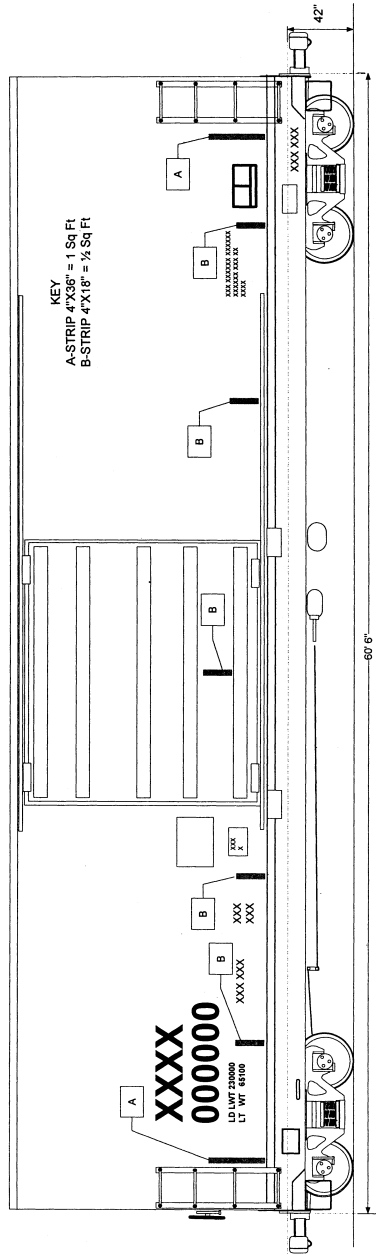


Figure 1
 Yellow vertical reflective sheeting (4.5 sq. ft.) pattern
 applied to a typical 60' Excess Car (additional
 sheeting required per 49 CFR 224.105 if white
 sheeting is applied in lieu of yellow)

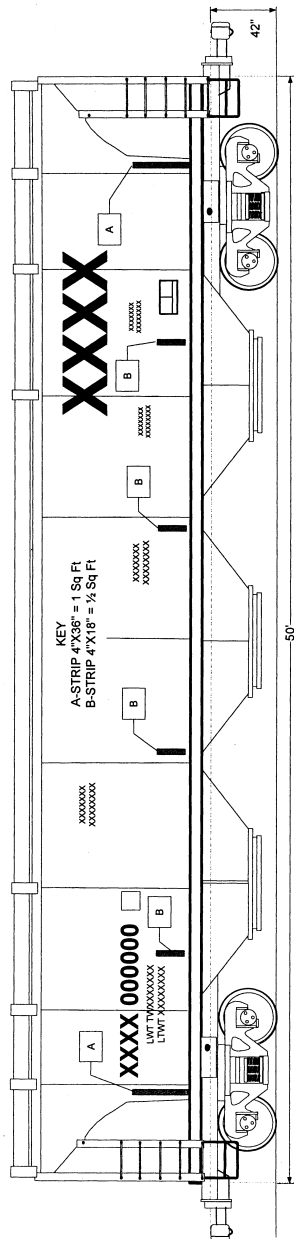


Figure 2
 Yellow vertical reflective sheeting (4.0 sq. ft.) pattern applied to a typical 50 feet covered copy car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

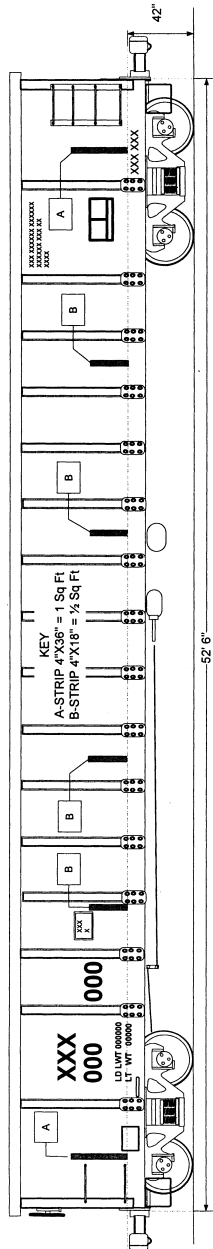


Figure 3
 Yellow vertical reflective sheeting (4.0 sq. ft.) pattern applied to a typical 52' Gondola Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

(ii) *Horizontal application.* If retroreflective sheeting is applied in a horizontal pattern, at least two 4x18 inch strips, one above the other, shall

be applied as close to each end of the car as practicable. Between these two end strips, a minimum of one 4x18 inch

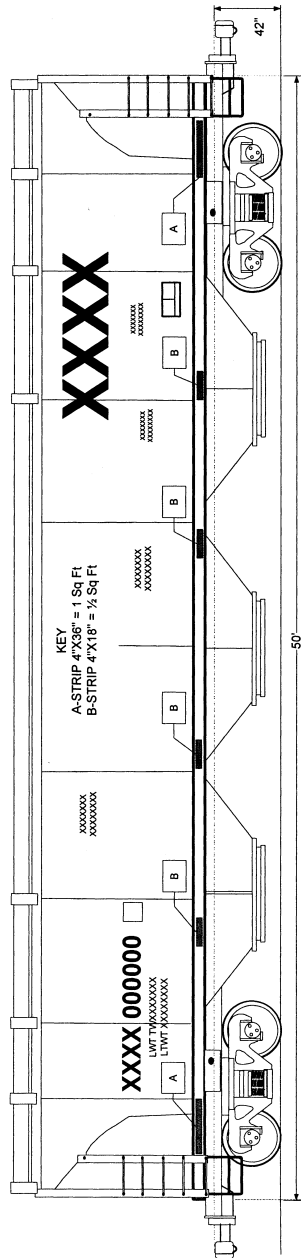


Figure 5
Alternate Pattern
Yellow horizontal reflective sheeting (4.0 sq. ft.) pattern
applied to a typical 50' foot Covered Hopper Car (additional
sheeting required per 49 CFR 224.105 if white
sheeting is applied in lieu of yellow)

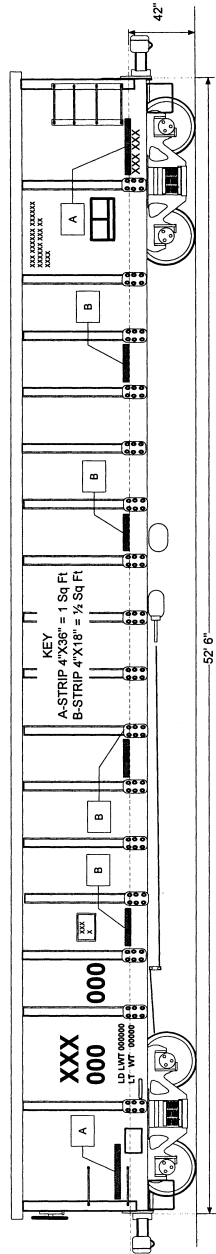


Figure 6
Alternate Pattern
Yellow horizontal reflective sheeting (4.0 sq. ft.) pattern applied to a typical 52' 6" Gondola Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow sheeting)

(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 vertically about the horizontal centerline of the tank,

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the sheeting may be applied vertically with its top edge no higher than the horizontal centerline of the tank. A minimum of either one 4×36 inch strip or two 4×18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between

these two end strips, a minimum of one 4×18 inch strip shall be applied at least every 12 feet. Retroreflective sheeting applied under this part shall not be located in the spillage area directly beneath the manway used to load and unload the tank. *See* Figures 7 and 8.

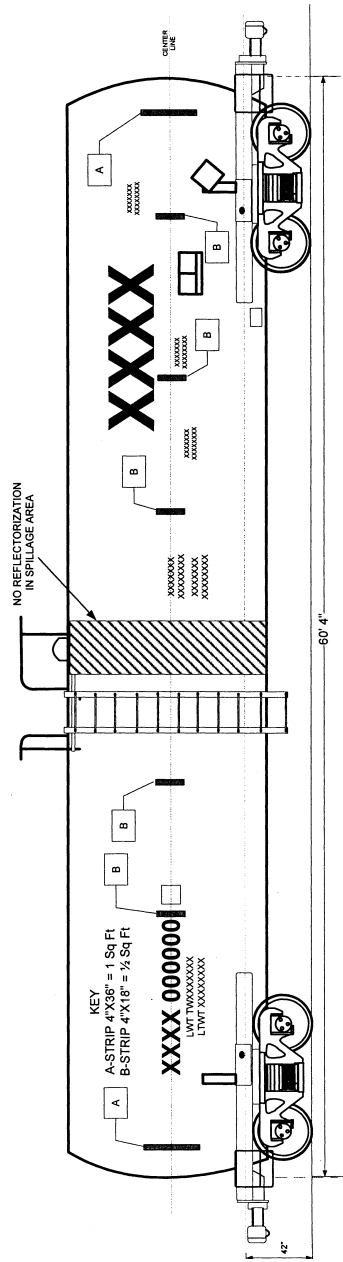


Figure 7
Yellow vertical reflective sheeting (4.5 sq. ft.) pattern applied to a typical Tank Car between 60 and 70' (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

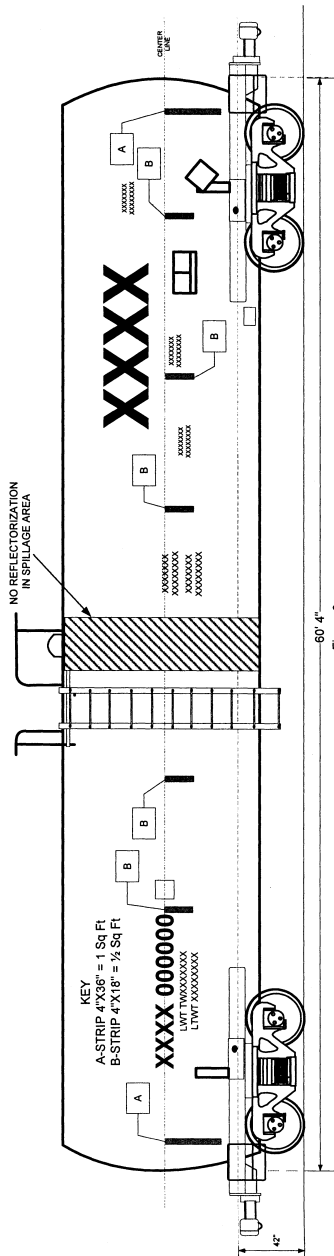


Figure 6
 Yellow vertical reflective sheeting (4.5 sq. ft.) pattern applied to a typical Tank Car between 60" and 70" (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

(3) *Flat cars.* On flat cars, retroreflective sheeting shall be applied in a horizontal pattern along the length of the side sill with the bottom

edge of the sheeting no lower than the bottom of the side sill and the top edge of the sheeting no higher than the top of the car deck or floor. At least two

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4×18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. If the side sill is less than 8 inches wide, the two 4×18 inch strips may be applied one next to the other, dividing the strips into nine inch segments as necessary in accordance with paragraph (a) of this section.

Between the two end strips, a minimum of one 4×18 inch strip shall be applied at least every 12 feet. *See* Figure 4. If a car has a separate rack structure, retroreflective sheeting may be applied to the flatcar portion only in accordance with the requirements of this section.

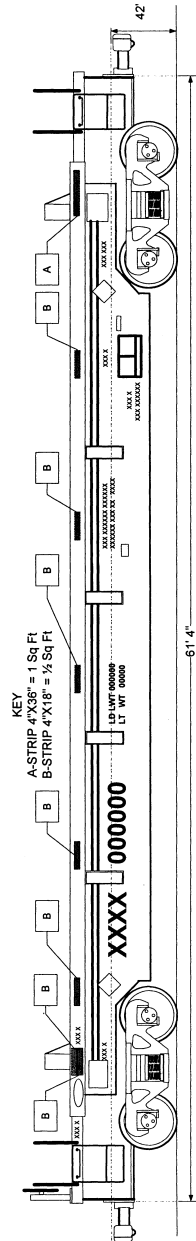


Figure 9
 Yellow horizontal reflective sheeting (4.5 sq. ft.) pattern applied to a typical Flat Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

(4) *Cars of special construction.* This paragraph applies to any car the design of which is not compatible with the patterns of application otherwise pro-

vided in this section. Retroreflective sheeting shall conform as closely as practicable to the requirements of paragraphs (a)(1) through (a)(3) of this

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section and shall have the minimum amount of sheeting described in § 224.105 distributed along the length of each car side.

(b) *Locomotives:* Locomotives subject to this part shall be equipped with at least the minimum amounts of retroreflective sheeting required by § 224.105 spaced as uniformly as practicable along the length of the locomotive sides as close as practicable to 42 inches from the top of the rail.

§ 224.107 Implementation schedule.

(a) *Railroad freight cars.* All railroad freight cars subject to this part must be equipped with retroreflective sheeting conforming to this part by May 31, 2015. 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 cars constructed after May 31, 2005, before the cars are placed in service.

(2) *Existing cars without retroreflective sheeting.*

(i) If, as of January 3, 2005, 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 two occasions occurring after May 31, 2005 or in accordance with paragraph (a)(2)(ii) of this section:

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

(B) Within nine months (270 calendar days) after the car first undergoes a single car air brake test as prescribed by § 232.305 of this chapter.

(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 July 1, 2005, the freight rolling stock owner submits to FRA a completed Reflectorization Implementation Compliance Report certifying that the cars in the owner's fleet subject to this part will be equipped with retroreflective sheeting as required by

this part in accordance with the schedule specified in Table 3 of this subpart. See Appendix B of this part for Reflectorization Implementation Compliance Report form.

TABLE 3 OF SUBPART B—ALTERNATIVE SCHEDULE FOR APPLICATION OF RETROREFLECTIVE MATERIAL TO FREIGHT CARS PER § 224.107(a)(2)(ii)

(A) ¹	(B) (percent)
May 31, 2007	20
May 31, 2008	30
May 31, 2009	40
May 31, 2010	50
May 31, 2011	60
May 31, 2012	70
May 31, 2013	80
May 31, 2014	90
May 31, 2015	100

¹ Column (A) indicates the date by which the minimum percentage of an owner's freight cars specified in column (B) must be equipped with retroreflective sheeting conforming to this part.

(A) Thereafter, the designated fleet shall be equipped with retroreflective sheeting according to the schedule specified in Table 3 of this subpart;

(B) No later than July 1, 2007, the freight rolling stock owner shall submit to FRA an updated Reflectorization Implementation Compliance Report showing which cars of the fleet subject to this part were equipped with retroreflective sheeting as required by this part during the initial 24-month implementation period. Thereafter, updated Reflectorization Implementation Compliance Reports shall be submitted annually, no later than July 1 of each year, for the duration of the 10-year implementation period. See Appendix B of this part.

(C) 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 after the close of the period, report the failure in writing 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 freight rolling stock owner's fleet; and