

Adopt new Subarticle 9, sections 95600 to 95606, title 17, California Code of Regulations, to read as follows:

Subarticle 9. Cool Car Standards and Test Procedures – 2012 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

95600. Purpose. The purpose of this article is to reduce greenhouse gas emissions from 2012 and subsequent model-year passenger cars, light-duty trucks, and medium-duty vehicles less than or equal to 10,000 pounds.

NOTE: Authority cited: Sections 39600, 39601, 38510, 38560, and 38560.5, Health and Safety Code. Reference: Sections 39600, 38560, 38560.5, and 38580, Health and Safety Code.

95601. Applicability. This article applies to:

- (a) manufacturers of new 2012 and subsequent model-year passenger cars, light-duty trucks, and medium-duty vehicles less than or equal to 10,000 pounds.
- (b) collision repair facilities.
- (c) persons that provide vehicle window replacement services.
- (d) repainting facilities.

95602. Definitions. In addition to the definitions found in title 13, California Code of Regulations, Section 1900, which are incorporated by reference herein, the following definitions also apply to this subarticle:

- (a) "Backlite" means the rear window of a vehicle, whether composed of glass or some other transparent or translucent material.
- (b) "Collision repair facility" means any business involved in the repair or restoration of damaged vehicles, including repainting or recoating of portions of the vehicular body or replacement of transparent or translucent components.
- (c) "Custom color" means a special order color requested by an entity for a new vehicle. A custom color is not offered to the general public.
- (d) "Deletion windows" are areas on a vehicle's glazing specifically designed to facilitate transmission of electromagnetic signals into and out of the vehicle.

- (e) "Flipper glass" means rearward facing liftgates or hatches on which the attachment points (hinges, strut mounts, or latches) are directly attached to the glazing, causing the glazing to be the primary load bearing member or structure, and having an opening pivot angle of at least 40 degrees. Flipper glass does not including glazing bonded into a framed liftgate which does not operate independently of the framed liftgate.
- (f) "Glazing" means all transparent or translucent portions of the vehicle body designed to allow occupants to see outside of the vehicle or others to see in, whether made of glass or some other material.
- (g) "Infrared Reflectance" means the ratio of infrared solar energy which is reflected outward by the paint or glazing system to the amount of infrared solar energy falling on the paint or glazing system, usually expressed as a percent. The infrared wavelengths are considered to be those falling between 780-2500 nanometers.
- (h) "Opaque" means neither transparent nor translucent; impenetrable to sight.
- (i) "Paint or coating" means any material that is applied to a vehicle's surface that forms a film in order to beautify, preserve, repair, or protect such a surface.
- (j) "Paint or coating system" includes all layers necessary to apply a durable paint/coating to a vehicle and typically consists of an electrocoat, primer, basecoat, and topcoat layers.
- (k) "Repainting facility" means any business involved in the repainting or recoating of vehicles.
- (l) "Rooflite" means all transparent or translucent materials, whether fixed or not, on the top surface, or roof, of a vehicle.
- (m) "Sidelites" means all windows, whether fixed or not, on the sides of the vehicle, composed of glass or any other transparent or translucent material.
- (n) "Solar spectrum" means the full solar wavelength range of 300 to 2500 nanometers.
- (o) "Total direct solar reflectance" or "Rds" means the ratio of total reflected solar flux to the incident solar flux, i.e., the ratio of the total

solar energy that is reflected outward by the paint or glazing system to the amount of total solar energy falling on the paint or glazing system, usually expressed as a percent.

- (p) "Total Solar Transmittance" means the ratio of the transmitted solar flux to the incident solar flux, i.e., the ratio of the amount of total solar energy that passes through a paint or glazing system (including energy absorbed and subsequently re-radiated to the interior) to the amount of total solar energy falling on the paint or glazing system, usually expressed as a percent.
- (q) "Windows" means all glazing, including the windshield, sidelites, backlite, and any roof component that transmits light.

95603. Automotive Coating Reflectivity Standards.

- (a) The opaque surfaces of new passenger cars, light-duty trucks, and medium duty vehicles less than or equal to 10,000 pounds must reflect at least 30 percent of the impinging total direct solar energy (Rds \geq 30%).
- (1) From 2012 to 2015 model years, at least one third of the vehicle manufacturer's color palette must comply with paragraph (a).
 - (2) For 2016 and subsequent model years, a vehicle manufacturer's entire color palette shall comply with paragraph (a), except as specified in paragraph (b).
 - (3) Opaque surface materials not painted or coated, such as non-metal convertible tops, must also meet these reflectivity standards.
 - (4) Total direct solar reflectance shall be determined using American Society of Testing and Materials Method E903, dated xx/xx/xxxx or by an alternate method approved in advance by the Executive Officer.
- (b) A manufacturer who paints or coats the roof of the vehicle with a paint or coating system that achieves an Rds of \geq 50 percent (\geq 50%) need not utilize a solar reflective paint or coating system on the balance of the vehicle.
- (c) Compliance with this article does not exempt covered entities from complying with any other regulations or statutes pertaining to hazardous substances or volatile organic compound requirements for paint or painting operations.
- (d) Exemptions. The following are excluded from the total direct solar energy reflectance standard in paragraph (a).
- (1) Bumpers, side view mirrors, lenses, and cosmetic details such as spoilers.
 - (2) The bed of non-refrigerated pick-up trucks.
 - (3) Custom colors in low volumes of no more than 25 cars per given custom color per year.

Comment [m1]: E903 is currently being revised; Revisions due 12/31/08.

- (4) Graphic designs, such as logos, letters, numbers and other graphics, applied to a compliant painted or coated surface, with or without the use of a template.

(e) Manufacturer Requirements.

- (1) For 2012 and subsequent model-year vehicles, manufacturers must provide information in the vehicle owner's manual that notifies the consumer that in the event the vehicle needs to be repainted, failure to use paint that complies with paragraph (a) may impair the ability of the air conditioner to properly cool the vehicle. A table must be included in the vehicle owner's manual that indicates the total direct solar reflectance for each color offered in that model-year's color palette.
- (2) For 2012 and subsequent model-year vehicles, manufacturers must provide to collision repair facilities paint and primer specifications and specific application processes such that repaired vehicles will continue to meet the standard in paragraph (a).
- (3) For 2016 and subsequent model-year vehicles, manufacturers must provide paint and primer specifications that meet the standard in paragraph (a) to companies responsible for formulating paint for repainting purposes.
- (4) As a condition to receive an Executive Order for 2012 and subsequent model-year vehicles, manufacturers must submit to the Executive Officer with each initial certification application the infrared and total direct solar reflectance characteristics for each color system proposed, and submit for review and approval facsimiles of the information in (1) and (2).
- (5) Records Retention.
 - (A) Beginning with the 2012 model-year, for each model year, the manufacturer must maintain records of the infrared and total direct solar reflectance for each color system offered for ten (10) years after the end of that model year.
 - (B) The records in (A) must be provided within 30 days of request by the California Air Resources Board.
 - (C) The records must include the following information: model-year, engine test group, model name, paint and primer color (including part numbers as appropriate), infrared reflectance,

total direct solar reflectance, and a graph showing reflectance over the solar spectrum.

(f) Repaint requirements.

(1) Collision repair or repainting facilities must paint 2016 and subsequent model-year vehicles with paint or coating systems that meet the manufacturer's specification in (e)(3) unless otherwise exempted.

(2) Records Retention.

(A) A collision repair or repainting facility shall retain records showing that paint or coating systems applied when repairing or repainting each 2016 and subsequent model-year vehicle meet the requirements in paragraph (a) or (b).

(B) These records shall be retained for a period of not less than five (5) years.

(C) Such records must be provided within 30 days of request by the California Air Resources Board.

95604. Automotive Glazing Standards.

(a) Except as specified in paragraph (b) or as allowed in paragraph (c), the following glazing areas for new passenger cars, light-duty trucks, and medium duty vehicles less than or equal to 10,000 pounds must reflect at least 45 percent of the impinging total direct solar energy ($R_{ds} \geq 45\%$) when the vehicle is parked:

- (1) For the 2012 model-year, the vehicle windshield shall comply with the glazing standard.
- (2) For 2013 and subsequent model-years, the vehicle windshield, sidelites, and backlite(s) shall comply with the glazing standard, except that flipper glass may instead comply with the standard in paragraph (c).

Total direct solar reflectance and transmittance shall be measured using International Standards Organization Standard 13837 Road Vehicles – Safety Glazing Materials – Method for the Determination of Solar Transmittance at 4 m/s, Convention A, dated April 15, 2008, or an alternate methodology approved in advance by the Executive Officer.

- (b) For 2012 and subsequent model-years, the rooflite(s), if any, for new passenger cars, light-duty trucks, and medium duty vehicles less than or equal to 10,000 pounds shall meet a maximum total solar transmittance of 20 percent ($\leq 20\%$) when the vehicle is parked.
- (c) Flipper glass may meet a maximum total solar transmittance of 40 percent ($< 40\%$) when the vehicle is parked rather than comply with paragraph (a)(2).
- (d) Exemptions. The following are excluded from the total direct solar energy reflectance standard in paragraph (a).
 - (1) Glazing that is internal to the conditioned space, having both surfaces exposed to the controlled environment (e.g., taxi cab dividers).
 - (2) Glazing for spaces in the vehicle which are not normally designed to be occupied or environmentally conditioned while the vehicle is in motion (e.g., pick-up bed covers, camper shells).
 - (3) Deletion windows as needed to facilitate necessary electromagnetic signal transmission. Deletion windows shall not

exceed ten percent (10%) of the area of each individual piece of glazing.

(e) Manufacturer Requirements.

- (1) For 2012 and subsequent model-year vehicles, manufacturers must provide information in the vehicle owner's manual that notifies the consumer that in the event any glazing must be replaced, failure to use glazing that complies with paragraphs (a), (b) or (c), as appropriate, may impair the ability of the air conditioner to properly cool the vehicle. A table must be included in the vehicle owner's manual that indicates the total direct solar reflectance or total solar transmittance, as appropriate, for each glazing position in that model.
- (2) For 2012 and later model-year vehicles, the OEM must include in the owner's manual the location of all deletion windows, pictorially and with measurements, to aid in the positioning of aftermarket devices.
- (3) As a condition to receive an Executive Order for 2012 and subsequent model-year vehicles, manufacturer must submit to the Executive Officer with each initial certification application the total direct solar reflectance and total solar transmittance of the glazing proposed, and submit for review and approval facsimiles of the information in (1) and (2).

(4) Records Retention.

- (A) Beginning with the 2012 model-year, the manufacturer must maintain records of the total direct solar reflectance and total solar transmittance of the glazing(s) utilized for each model vehicle for ten (10) years after the end of that model-year.
- (B) The records in (A) must be provided within 30 days of request by the California Air Resources Board.
- (C) The records must include the following information: model-year, engine test group, model name, total direct solar reflectance, and total solar transmittance for each type and position of glazing used.

(f) Window Replacement Requirements.

- (1) Collision repair facilities and other persons that provide vehicle window replacement services must use replacement glazing that

meets the requirements of (a), (b), and (c), as applicable, and as described in the vehicle owner's manual for 2012 and subsequent model-year vehicles.

(2) Records Retention.

(A) Collision repair facilities and other persons that provide vehicle window replacement services shall retain records showing that replacement glazing for 2012 and subsequent model-year vehicles meets the requirements in paragraph (a), (b) and (c), as applicable.

(B) These records must be retained for a period of not less than five (5) years.

(C) Such records must be provided within 30 days of request by the California Air Resources Board.

95605. Manufacturer Compliance Option. The vehicle manufacturer may choose to pursue one of the following alternate compliance options. Manufacturers doing so must notify the Executive Officer of the alternative being utilized for the specified vehicle model in the initial certification application.

(a) A vehicle manufacturer that achieves greater than required performance for its solar reflective paint or coating system may reduce the performance of its glazing. Exempted paint and coating systems are not included in the determination of achieved total direct solar reflectance, and this alternative may not be combined with the alternative under section 95603(b).

(1) If the minimum Rds achieved for all colors in the standard color palette available for that model is at least 40 percent ($\geq 40\%$), then the minimum Rds of the glazing under section 95604 paragraph (a) is reduced to 43 percent ($\geq 43\%$).

(2) If the minimum Rds achieved for all colors in the standard color palette available for that model is at least 50 percent ($\geq 50\%$), then the minimum Rds of the glazing under section 95604 paragraph (a) is reduced to 41 percent ($\geq 41\%$).

(3) If the minimum Rds achieved for all colors in the standard color palette available for that model is at least 60 percent ($\geq 60\%$), then the minimum Rds of the glazing under section 95604 paragraph (a) is reduced to 39 percent ($\geq 39\%$).

- (b) A vehicle manufacturer that achieves greater than required performance for its solar reflective glazing may reduce the performance of its paint or coating system. Glazing performance shall be averaged on an area basis for all glazing positions complying with section 95604 paragraph (a), not including deletion windows.
- (1) If the minimum Rds of the glazing for a specified model is at least 47 percent ($\geq 47\%$), then the minimum Rds for the paint or coating system for that model is reduced to 20 percent ($\geq 20\%$).
 - (2) If the minimum Rds of the glazing for a specified model is at least 49 percent ($\geq 49\%$), then the minimum Rds for the paint or coating system for that model is reduced to 10 percent ($\geq 10\%$).
 - (3) If the minimum Rds of the glazing for a specified model is at least 50 percent ($\geq 50\%$), the requirements for the paint or coating systems are eliminated.

95606. Enforcement and Penalties. Any violations of these sections may carry civil penalties as specified in state law and regulations, including, but not limited to Health and Safety Code section 38580.