

State of California
AIR RESOURCES BOARD

Appendix A

PROPOSED REGULATION ORDER

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

Date of Release: **May 8, 2009**

PROPOSED REGULATION ORDER

Adopt new Subarticle 9, sections 95600, 95601, 95602, 95603, 95604, and to 95605, title 17, California Code of Regulations, to read as follows:
(NOTE: The entire text of sections 95600, 95601, 95602, 95603, 95604, and to 95605 is new language.)

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 GVW.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, 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 GVW.
- (b) manufacturers of vehicle glazing.
- (c) collision repair facilities.
- (d) persons that provide vehicle window replacement services.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95602. Definitions.

- (a) 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:
 - (1) “Backlite” means the rear window of a vehicle, whether composed of glass or some other transparent or translucent material.

- (2) "Collision repair facility" means any business involved in the repair or restoration of damaged vehicles, including replacement of transparent or translucent components.
- (3) "Deletion windows" are areas on a vehicle's glazing specifically designed to facilitate transmission of electromagnetic signals into and out of the vehicle.
- (4) "Direct solar reflectance" or "Rds" means the ratio of reflected solar flux to the incident solar flux, i.e., the ratio of the solar energy that is reflected outward by a paint or glazing system to the amount of solar energy impacting the paint or glazing system, usually expressed as a percent. Rds includes ultraviolet, visible, and infrared reflectance.
- (5) "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.
- (6) "Infrared Reflectance" means the ratio of infrared solar energy which is reflected outward by the glazing system to the amount of infrared solar energy impacting the glazing system, usually expressed as a percent. The infrared wavelengths are considered to be those falling between 780-2500 nanometers.
- (7) "Privacy Glass" is glazing that is rear of the B-pillar in a vehicle that has less than 70 percent visible light transmittance.
- (8) "Referenced to a glazing of 4 mm thickness" means that the glass composition will meet the required standard when it is produced in a 4 millimeter thickness. Glazing greater than or less than this thickness may have a different Tts value than that of the 4 millimeter thick glazing.
- (9) "Rooflite" means all transparent or translucent materials, whether fixed or not, on the top surface, or roof, of a vehicle.
- (10) "Sidelites" means all windows, whether fixed or not, on the sides of the vehicle, composed of glass or any other transparent or translucent material.
- (11) "Solar absorptance" means the amount of solar energy that is absorbed by the glazing system, expressed as percent.

- (12) "Solar spectrum" means the full solar wavelength range of 300 to 2500 nanometers.
- (13) "Total Solar Transmittance" or "Tts" means the ratio of the transmitted solar flux to the incident solar flux, i.e., the ratio of the amount of solar energy that passes through the glazing (including energy absorbed and subsequently re-radiated to the interior) to the amount of solar energy falling on the glazing, usually expressed as a percent.
- (14) "Vision glass" is glazing that meets a minimum 70 percent visible light transmittance.
- (15) "Windows" means all glazing, including the windshield, sidelites, backlite(s), and any roof component that transmits light.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95603. Automotive Glazing Standards.

- (a) Except 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 GVW must not exceed the specified transmission of total solar energy (Tts) into the vehicle when the vehicle is parked:
 - (1) For 2012 model year vehicles, at least seventy-five percent of each manufacturer's total vehicle sales must use a windshield with a Tts less than or equal to fifty percent (50%).
 - (2) For 2013 model year vehicles, the windshield must have a Tts less than or equal to fifty percent (50%).
 - (3) For 2014 and subsequent model year vehicles, the windshield must have a Tts less than or equal to forty percent (40%).
 - (4) For 2012 and subsequent model year vehicles, the rooflite(s), if any, must have a Tts less than or equal to thirty percent (30%), referenced to a glazing of 4 millimeter thickness.
 - (5) For 2012 and subsequent model year vehicles, sidelites and backlite(s) meeting 70 percent visible light transmittance

requirements must have a Tts less than or equal to sixty percent (60%), referenced to a glazing of 4 millimeter thickness.

- (6) For 2012 and subsequent model year vehicles, sidelites and backlite(s) not meeting 70 percent visible light transmittance requirements must have a Tts less than or equal to forty percent (40%), referenced to a glazing of 4 millimeter thickness.
- (b) Total solar 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, which is incorporated by reference herein, or using an alternate test methodology that results in equivalent solar control, approved in advance by the Executive Officer.
- (c) Labeling. [Reserved]
- (d) Exemptions. The following are excluded from the standards in paragraph (a) for solar control glazing.
 - (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 that 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 necessary for the purpose of allowing increased electromagnetic signal penetration. These deletion windows may be formed by partial or total removal of applied solar reflective coating or by non-application of such material in the specified area. The area of the deletion window shall not exceed thirty percent (30%) of the total window area, and the total material removed or not applied shall not exceed ten percent of the total material applied to the entire window. These limits apply to each individual piece of glazing utilizing deletion windows.
- (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 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 solar transmittance for each individual piece of glazing used in that model vehicle.

- (2) For 2012 and subsequent model-year vehicles, manufacturers 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, manufacturers must submit to the Executive Officer with each initial certification application the direct solar reflectance, solar absorptance, and total solar transmittance of the glazing proposed, and submit for review and approval facsimiles of the information in (1) and (2). Manufacturers shall also submit for review and approval a facsimile of the marking(s) included on the window glazing.

(4) Records Retention.

- (A) Beginning with the 2012 model-year, manufacturers must maintain records of the direct solar reflectance, solar absorptance, and total solar transmittance of the glazing 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, direct solar reflectance, solar absorptance, and total solar transmittance for each type (e.g., absorbing, reflecting, privacy) and position (e.g., windshield, sidelite, rooflite, backlite) of glazing used.

(f) Window Replacement Requirements.

- (1) Collision repair facilities and other persons that provide vehicle window replacement services in California must use replacement glazing that is certified to meet the requirements of paragraph (a), and as described in the table included in the vehicle owner's manual for 2012 and subsequent model-year vehicles that indicates the total solar transmittance for each individual piece of glazing.
- (2) The replacement glazing shall include [reserved] as required under paragraph (c).

(3) 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) 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.

(g) Glazing Manufacturer Requirements.

(1) Glazing manufacturers must certify that the glazing provided for 2012 and subsequent model-year vehicles meets the solar performance represented to purchasers, using the test procedure indicated in paragraph (b).

(2) The glazing shall include appropriate label(s) indicating solar performance as required in paragraph (c).

(3) Records Retention

(A) Glazing manufacturers shall retain records showing that glazing provided for 2012 and subsequent model-year vehicles meets the requirements in paragraph (a).

(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.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95604. Manufacturer Compliance Options. The vehicle manufacturer may choose to pursue 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. Improved performance of glazing in one position may offset lesser performance in another. When pursuing these options, glazing performance (Tts) shall be individually averaged on an

area basis for the windshield, backlite(s), sidelites forward of the B-pillar, sidelites rear of the B-pillar, and rooflite(s), if any. Where appropriate, and with approval in advance by the Executive Officer, these options may be combined.

(a) Improved solar management for the windshield. For each two (2) percentage points that the Tts of the windshield for a specified model is reduced beyond the requirement, one of the following options may be elected:

(1) The maximum Tts for the sidelites and backlite(s) for vision glass is increased by three percentage points; or

(2) The maximum Tts for the sidelites and backlite(s) not meeting 70 percent visible light is increased by three percentage points; or

(3) The maximum Tts for the rooflite(s) is increased by two percentage points.

(b) Improved solar performance for the backlite(s) or sidelites.

(1) For passenger cars, if the Tts of the backlite is reduced from sixty percent (60%) to fifty percent (50%), the Tts for the windshield may be increased by up to four (4) percentage points; or

(2) If the average Tts of the sidelites forward of the B-pillar is reduced from 60% to 50%, the Tts for the windshield may be increased by up to two (2) percentage points.

(3) If the Tts of the sidelites and backlite(s) of passenger cars averages no more than fifty percent (50%), then the Tts for the windshield may be less than or equal to fifty percent (50%).

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, Health and Safety Code.

§95605. Enforcement and Penalties.

(a) *Penalties.* Penalties may be assessed for any violation of this subarticle pursuant to Health and Safety Code section 38580. Each day during any portion of which a violation occurs is a separate offense.

(b) *Injunctions.* Any violation of this subarticle may be enjoined pursuant to Health and Safety Code section 41513.

- (c) *Revocation.* The Executive Officer may revoke any Executive Order issued pursuant to this subarticle for a violation of this subarticle.
- (d) Each day or portion thereof that any record required by this subarticle remains unsubmitted, is submitted late, or contains incomplete or inaccurate information, shall constitute a single, separate violation of this subarticle.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38562, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38562, 39003, 39500, 39600, and 39601, Health and Safety Code.