

shall be designed to conform to this standard." Under S5.8.1, whenever a manufacturer designs a lamp to replace a lamp on a vehicle to which the standard applies, the manufacturer must design that lamp to ensure that the vehicle will continue to comply with Standard No. 108 when the replacement lamp is installed.

Further, the specific requirements of Standard No. 108 that apply to an item of replacement equipment are determined by reference to the original equipment being replaced and the vehicle for which it was designed. As we have stated before, the replacement item must conform to the standard in the same manner as the original equipment for which the vehicle manufacturer certified compliance. See our February 4, 2002, letter to Mr. Daniel Watt. See also our March 13, 2003, letter to Mr. Galen Chen.

As to the sets of replacement lamps you received, the lamps that would replace the original lamps on the vehicle body would not conform to Standard No. 108 because they do not include all of the functions of the original lamps; *i.e.*, they do not include the reflex reflector. It is immaterial that the manufacturer of the replacement equipment would provide a reflex reflector in another lamp. Under S5.8.1 of the standard, "each lamp" manufactured to replace any lamp on any vehicle to which the standard applies must be designed to conform to the standard. As you noted in your letter, someone might install the replacement outboard (vehicle body) lamps only, thus causing the vehicle to lose the reflector function entirely.

You also raised another question about the designs: as installed on a vehicle, the reflex reflectors in the replacement lamp systems are located further inboard than the reflectors in the original equipment lamp systems. Standard No. 108 requires rear reflex reflectors to be "as far apart as practicable." The vehicle was certified with the reflex reflectors in a specific location, and replacement lamps which have the effect of moving the reflex reflectors closer together would clearly not be "as far apart as practicable," and therefore would not conform to Standard No. 108.

Of course, replacement equipment must also be certified as having been designed to conform to all of Standard No. 108's requirements that applied to the original equipment; *e.g.*, photometric performance, minimum effective projected luminous lens area, lens material weatherability performance, etc.

Draft Interpretation No. 2

This replies to your letter requesting an interpretation of Federal Motor Vehicle Safety Standard No. 108, Lamps, reflective devices, and other associated equipment. You asked whether light source modifications are permissible for aftermarket lamps.

You stated that manufacturers have submitted replacement lamps to Calcoast-ITL for testing that are intended to replace original equipment lamps. According to your letter, the lamps are "both front and rear combination lamps." As discussed below, replacement lamps must comply with Standard No. 108 using the same light sources as the original equipment.

According to your letter, the lamps fall into two categories, and you have asked questions with regard to each category. The categories and questions are as follows:

1. Replacement Lamp Uses OEM Wiring Harness & Sockets

(a) May a lamp manufacturer design a replacement lamp to use a different wattage bulb, such as switching from an 1157 to a 2057?

(b) May a lamp manufacturer design a replacement lamp to use a different color bulb? Some manufacturers are switching from a clear bulb behind a red or amber rear turn signal lens to an amber bulb behind a clear lens.

2. Replacement Lamp Uses Modified Wiring Harness and Sockets Supplied With Lamp

(a) Some manufacturers of replacement lamps are completely changing the bulbs used including wattage, color and base type by including a replacement wiring harness and sockets. Is this permitted?

(b) Some manufacturers of replacement lamps change the source type from incandescent to sealed LED. Is this permitted?

The answer to all of these questions is no.

By way of background, Standard No. 108 specifies requirements for original and replacement lamps, reflective devices, and associated equipment. S1. It applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers, and motorcycles. S3(a). The vehicle manufacturer is required to certify that the vehicle, when new, meets, among other things, Standard No. 108's requirements with respect to lamps, reflective devices, and associated equipment.

Standard No. 108 also applies to lamps, reflective devices, and associated equipment for replacement of like

equipment on vehicles to which this standard applies. S3(c). Thus, the manufacturer of a replacement lamp (or other replacement equipment covered by the standard) is required to certify that the equipment meets the standard's requirements.

S5.8.1 of the standard provides that, with certain exceptions not relevant here, "each lamp, reflective device, or item of equipment manufactured to replace any lamp, reflective device, or item of associated equipment on any vehicle to which this standard applies, shall be designed to conform to this standard." Under S5.8.1, whenever a manufacturer designs a lamp to replace a lamp on a vehicle to which the standard applies, the manufacturer must design that lamp to ensure that the vehicle will continue to comply with Standard No. 108 when the replacement lamp is installed.

Further, the specific requirements of Standard No. 108 that apply to an item of replacement equipment are determined by reference to the original equipment being replaced and the vehicle for which it was designed. As we have stated before, the replacement item must conform to the standard in the same manner as the original equipment for which the vehicle manufacturer certified compliance. See our February 4, 2002 letter to Mr. Daniel Watt. See also our March 13, 2003 letter to Mr. Galen Chen.

Thus, replacement lamps must conform to the standard in the same manner as the original equipment lamp on the vehicle as certified by the vehicle manufacturer. Each vehicle is certified to Standard No. 108 using a particular light source for a particular lamp. The lamp's ability to meet the standard's requirements with that light source is an inherent part of the certification.

Therefore, a lamp manufactured to replace the lamp must meet Standard No. 108's requirements using that light source, in order to be designed to conform to the standard. We would use the same light source in testing a replacement lamp for compliance with Standard No. 108 as was used by the vehicle manufacturer for the original lamp in certifying the vehicle's compliance with the standard.

Further, we note that the lighting systems and overall electrical systems of vehicles are designed with specific light sources in mind, both to ensure proper beam patterns, levels of brightness and electrical performance, and to avoid overloads and risk of fire. In the owner's manual, vehicle manufacturers advise owners what replacement bulbs to use. If a replacement lamp were designed to use a different light source from that