

# Standards Updates

## A more detailed review of current work

### SAE J576

#### Background:

This standard is in the SAE Lighting Standards Committee, and under the jurisdiction of the SAE J576 Taskforce. This group has been managed well for many years by Bill Putman of Arizona Desert Testing. for weathering durability testing by outdoor exposure of automotive lenses for approval by AMECA to FMVSS 108. A 45 degree open backed exposure for 3 years in both south Florida and central Arizona. After exposure, there are to be no significant changes in the color, haze and transmittance. No physical defects that might affect performance such as checking, cracking, or delamination are allowed.

In the 2017 revision, the 6-month test for “protected lenses” was added to the test. This has been the only modification made for double-lenses, and the instructions remain difficult to follow for weathering test sites. SAE J576 is intrinsically a simple standard, but the interpretation of the results for modern auto lenses is a problem. The standard has not kept pace with newer lighting systems.

#### What's Changing:

The main changes are the inclusion of “decorative” lights, which are essentially the non-safety lights. So anything other than the headlights, turn signals, rear lights, and brake lights come under this description. The FMVSS 108 does not recognize these lights and does not cover them in the Federal specification. Auto manufacturers though are increasingly adding these lights to the vehicles especially electric cars, and autonomous driving cars. Auto makers need a set of standard and the thought was that the existing SAE J576 was the place to add these tests.

A new standard recently developed is SAE J3098 specifically for “decorative” lights, but did not include weathering test requirements. Since both methods exist under the same SAE committee, the decision was made to put all the weathering requirements in one standard.

The current draft has added several new items.

1. A specific section is now added that allows for a Xenon arc exposure for “decorative lamps”. These are lamps on the car that perform other functions besides forward illumination, direction indicators, and rear sight and braking lights.
2. The conditions for the accelerated testing of safety lamps have been more clearly defined.
3. Decorative lamps have been added as a new test specimen type.
4. Other types of light source and color combinations will be allowed as long as the final color meets the red, amber, clear limits.

#### Significance:

Nothing much changes for the heart of this standard. If you are trying for AMECA approval for safety lights (clear, red, amber), then everything is the same as before. You will need to perform a 3 year exposure in Florida and Arizona, and the specimens must pass certain performance requirements. The problem lies in the addition of these decorative lamps. As of January 2025, there are many different POVs about how to address the weathering requirements on decorative lamps.

When the specimens are sent to a weathering site for their 3 years exposure, the supplier must inform the test site whether the specimens are for the FMVSS 108 approval, or if they are merely trying to meet the

SAE J576. The way the specimens are exposed is the same, 3 years in Florida and Arizona at 45 degrees South, but the evaluation interpretation will be different. Perhaps the specimens do not need to meet the SAE J578 color requirements (initially or final), and perhaps the haze and transmittance limits are not the same.

The standard mentions using LEDs as the light source in the future. Commercial test labs cannot measure the output of a light source. The equipment can only measure reflected light, or transmitted light from a known light source (illuminant). When a combination of a non-standard LED and a non standard lens can produce a standard color, the test labs cannot measure this. It would mean that every unique LED will require its output to be converted into an illuminant.

I am participating in this revision, but only from the weathering procedural point. Right now, these additions are making the standard harder to run for the commercial labs. When a standard is made more complicated, it generally leads to errors due to confusion and misinterpretation.

I will keep the reader posted as this situation develops.

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