Do your pavement markings pass the test?

Understanding the test methods for determining retroreflectivity will help you choose the right pavement markings for your roads and drivers.
ASTM Retroreflectivity Test Methods

Measured pavement marking reflectivity results vary widely depending on the test. These methods can help you see the differences of reflectivity between pavement markings under different conditions.

**E1710-18 Dry Method**
This test method measures the dry retroreflective (RL) properties of horizontal pavement marking materials—such as traffic stripes and road surface symbols. It’s performed using a portable or mobile retroreflectometer at the CEN-prescribed geometry in dry conditions.

**E2832-12 Wet-Continuous Method**
This test method measures the wet retroreflective (RL-2) properties of horizontal pavement marking materials—such as traffic stripes and road surface symbols. It’s performed using a portable or mobile retroreflectometer to measure the retroreflection at the prescribed geometry in a standard condition of wetness—which is achieved with a wetting apparatus that continuously wets the measurement area with a consistent spray of water during measurement.

**E2177-19 Wet Recovery Method**
This test method measures the wet retroreflective (RL) properties of horizontal pavement marking materials—such as traffic stripes and road surface symbols. It’s performed using a portable or mobile retroreflectometer to measure the retroreflection at the prescribed geometry in a standard condition of wetness, 45 seconds after the measurement area of a pavement marking has been wetted with 3 liters of water (applied to the measurement area).
How the optics are measured.

Pavement markings are viewed at extreme horizontal angles that are very different from what is seen with sign sheeting. Modern instruments measure reflectivity approximate to what is seen at 30 meters. Due to the extreme angles and optical systems, pavement marking retroreflectivity numbers are extremely low and measured in millicandels, which are one-thousandth of the unit used to measure sign sheeting.
Understanding the results.

Different test methods yield different reflectivity results. Specifications need to be aligned with desired test methods and all markings must be measured with the same method.

Pavement marking materials can be developed to deliver reflectivity performance over a wide range of values. There are trade-offs of wet and dry reflectivity for each product design. Dry reflective performance does not directly correlate to wet reflective performance.

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