

Maintaining Sign Retroreflectivity: Visual Nighttime Inspection

VISUAL INSPECTION ASSESSMENT METHOD:

The Visual Inspection Assessment method, also referred to as the Visual Nighttime Inspection method, is when “*on-the-fly assessments of retroreflectivity are made by an inspector during nighttime conditions.*”^[1] The visual inspection method is likely to be the most practical method for smaller agencies with limited resources to comply with the maintenance requirements of the MUTCD. Additional benefits of this method include the ability to identify any signs that may be damaged, obstructed or missing. As a general guidance for the visual inspection method the FHWA recommends the following:^[1]

- *Develop guidelines and procedures for inspectors to use in conducting the nighttime inspections and train inspectors in the use of these procedures.*
- *Conduct inspections at normal speed from the travel lane(s).*
- *Conduct inspections using low-beam headlights while minimizing interior vehicle lighting.*
- *Evaluate signs at typical viewing distances so that adequate time is available for an appropriate driving response.*

*Note: studies have indicated that for a more realistic “worst case scenario” for eye sight at night, turning the interior overhead lamp on at least every five minutes allows for the simulation of on-coming headlights. This allows the visual inspector a more realistic eye response in assessing the reflectivity of signs.

The visual inspection method consists of three different procedures, one or more of which are recommended to be used to support visual inspections. The three procedures are identified as follows:

- *Calibration Signs Procedure*
- *Comparison Panels Procedure*
- *Consistent Parameters Procedure*

Guidelines should be developed for all of the testing procedures the agency intends to use. The specific details are up to the agency to determine and follow. The FHWA, however, recommends that several considerations be included in the development of the guidelines. They are as follows:

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- **Be consistent in testing conditions:** Inspections should be conducted on consistent nighttime conditions, (ie. clear nights). Rain and fog may alter visibility and result in inconsistent readings.
- **The speed of the testing vehicle should be as specified for each road situation:** The driver should maintain normal posted speeds for the inspection.
- **Inspection vehicle should be in the travel lane as intended for use.** The test is intended to represent how it would normally be viewed to a typical driver, do not pull to the shoulder since this will give an inaccurate representation of the reflectivity of the sign.
- **Headlights should be cleaned, properly aligned and set on the low-beam for all inspections.**
- **Windshield of the vehicle should be cleaned. The inspector should be trained in the methods of inspection prior to performing the inspection.**
- **For safety reasons, inspections shall be conducted by a minimum of two people; a driver and an inspector:** Designating a licensed driver to focus on the driving will allow the inspector to focus on sign assessment as well as be safer.
- **Record keeping should be standardized for consistency and records maintained for future reference:** A standardized inspection form will allow a consistency in the inspections from year to year. The inspection records should be kept in hard copy or transferred to a digital copy for future reference and documentation of compliance with the regulation.
- **Sign replacement:** All signs found to fail the inspection test should be replaced as soon as possible. Marginal signs should be scheduled for replacement as budget and time allow.
- **Inspection frequency** should be conducted on a minimum annual basis, preferably at the same time of year annually and should be conducted under similar weather conditions if possible.

NOTE:

Each agency implementing these procedures should be aware that there may be a potential for increased liability on the municipality in solely implementing one of these procedures. All inspections and decisions should be supported with written documentation.

REFERENCES:

^[1] *New MUTCD Sign Retroreflectivity Requirements*, FHWA-SA-07-020. U.S. Department of Transportation, Federal Highway Administration, Washington D.C., 2007.



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