

Can overhead highway signs in New York City be unlighted?

Most highway signs are constructed from materials—known as retroreflective materials—that redirect much of the light from vehicle headlamps back toward the drivers of vehicles. Highway signs in New York City are required to have exterior illumination to ensure that the signs are visible to drivers in the very busy urban traffic patterns found in that city.

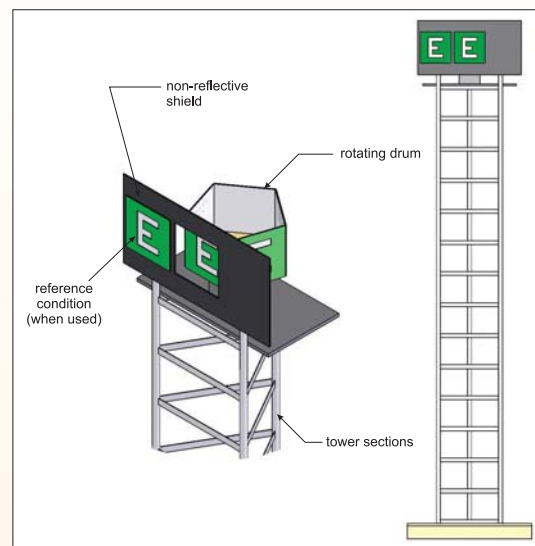
Responding to increased energy costs of operating sign lighting systems, and to the introduction of newer materials with improved retroreflective performance, the New York State Department of Transportation (NYSDOT) worked with the LRC to evaluate the legibility of unlighted signs made from these newer



LRC researchers measured the luminance properties of actual signs in New York City.

materials. From luminance measurements of signs made during the daytime and nighttime, relative visual performance values were compared to a reference sign meeting NYSDOT requirements for exterior lighting.

In general, the unlighted signs had similar visual performance characteristics as the reference lighted sign, indicating that the newer materials could be used without lighting in this urban location without significantly impacting sign legibility.



LRC researchers studied driver responses to sign panels with different luminance contrast characteristics.

A subsequent experiment showed, however, that even when differences in the luminance contrast of signs had no impact on legibility, that such differences could be detectable by drivers, and might influence the acceptability of signs. Both legibility and acceptability might be important criteria in the design of suitable highway signs.

Sponsor

New York State Department of Transportation