

SIGN RESEARCH FOUNDATION EXECUTIVE SUMMARY

ARTS & SCIENCE OF SIGN DESIGN



Just because a sign looks great doesn't mean it's accomplishing its purpose. The best signs combine strong design and graphics with a grasp of what makes them most readable—and safest for those viewing them.

"Arts & Science of Sign Design" was released by the Foundation in 2012. It was adapted and updated from a version that originally appeared in the 1997 "Economic Value of On-Premise Signage," published by the California Sign Association (formerly the California Electric Sign Association) and the International Sign Association.

The report explores three essential components of effective signage: location, sign design and the viewer.

In addition to considering the elements of maximum visibility and readability, the piece highlights the need for safety considerations. Poor or inadequate signage can not only harm a business, but can also be hazardous to drivers.

"The Federal Highway Administration has developed numerous principles to ensure road designs are safe," the report states. "While the FHWA's information is aimed at highway signs, the agency includes research that can apply to on-premise signage as well. For instance, the FWHA has determined that 41 percent of accidents occur because of a lack of adequate signage. Further studies have established that the most important consideration in determining the size and placement of a sign is the distance between the sign and the viewer."

KEY TAKEAWAYS

VIEWING DISTANCE, SIZE, AND LOCATION ARE CRITICALLY IMPORTANT FACTORS TO CONSIDER WHEN DECIDING THE PLACEMENT OF A SIGN.

- Signs are viewed in the context of other structures, landscaping, and visual sight lines in the area.
- By their very nature, on-premise signs are located further away from the roadway than traffic signs. They must be high enough to be seen beyond obstructions such as parked cars.
- At 55 miles per hour, a viewer travels 80 feet per second or a quarter-mile in 16.5 seconds. The more visible and readable a sign is from a distance, the longer the viewing time—and the better the ability to make an impression.
- The Decision Sight Distance (DSD)—the distance traveled while a driver reads a sign, processes the information and safely reacts—will vary depending on the rate of speed. Drivers may need additional time to respond when there are numerous signs in the area.

THE COLORS USED FOR SIGN LETTERS, OBJECTS, AND BACKGROUND GREATLY IMPACT THE SIGN'S VISIBILITY.

Karen and James Claus, authors of "Visual Communication Through Signage," ranked the following color combinations from most to least readable:

| MOST READABLE | | | | LEAST READABLE | | | |
|-----------------|----------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| black on yellow | yellow on blue | white on brown | red on white | white on brown | red on white | white on brown | red on white |
| black on white | green on white | brown on yellow | yellow on red | brown on yellow | yellow on red | brown on yellow | yellow on red |
| yellow on black | blue on yellow | brown on white | red on yellow | brown on white | red on yellow | brown on white | red on yellow |
| white on blue | white on green | yellow on brown | white on red | yellow on brown | white on red | yellow on brown | white on red |

NUMEROUS ELEMENTS OF SIGN DESIGN DIRECTLY IMPACT READER COMPREHENSION.

- If a sign has familiar logos, words and/or fonts, it can be processed more quickly by the viewer.
- Viewers will recognize signs in part because of the colors used; color is an essential part of a corporate logo.
- Contrast between the color of words and objects on a sign and the sign's background affects readability. Exterior contrast compares the sign's edge to the background against which it's viewed, such as the other parts of a multi-tenant sign or the building on which it is affixed. Interior contrast refers to where the sign copy meets the background on the actual sign.
- For maximum readability—and safety for those traveling by while reading it—a sign must be detectable, conspicuous, legible and comprehensible. The larger the letters appear, the better. In addition, the thickness of each letter should be one-fifth the letter height for prime readability.



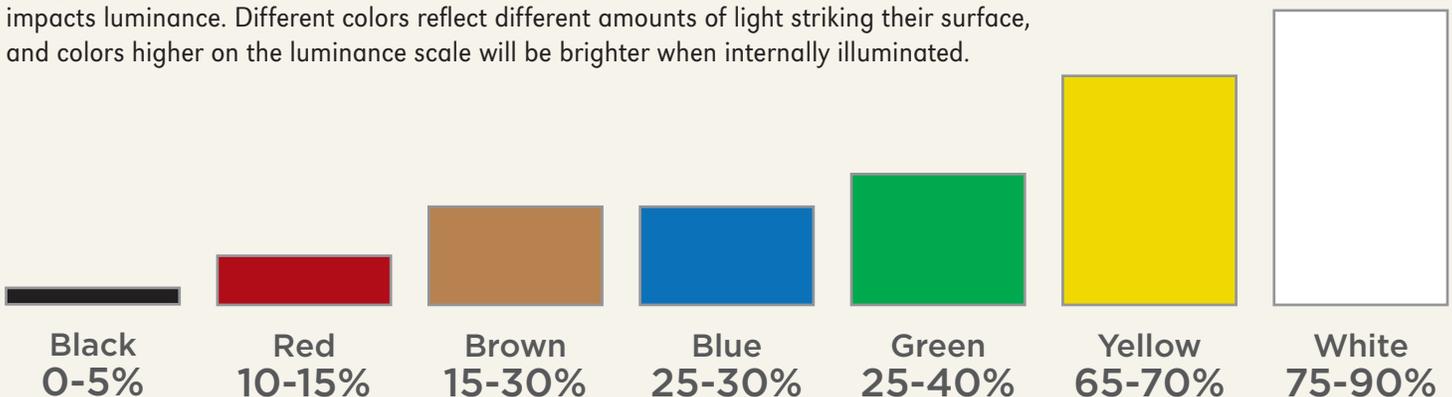
SIGNS ARE MOST EFFECTIVE WHEN DESIGNED TO ACCOMMODATE THE NEEDS AND LIMITATIONS OF THE VIEWERS.

- In 2011, 13 percent of the U.S. population was over age 65; by 2025, one in four drivers is expected to be over 65. Eyesight and reaction times both slow with age.
- At the time of the report, an estimated 66 percent of U.S. adults were wearing glasses, contact lenses or both. In addition, as many as 3 million had glaucoma, and cataracts were said to affect 22 million people over age 40. Signs must be designed to provide better visibility—especially at night.
- Signs must be positioned within a driver's relatively narrow cone of vision so that the driver doesn't have to take his or her eyes off the road to read it. The clearest viewpoint is a cone of about 3 degrees around where the eyes are focused; readability is severely limited outside a 10-degree cone.



PERCENTAGE OF LIGHT REFLECTED BY VARIOUS COLORS:

In signage, color is related to more than just legibility and corporate/brand recognition. It also impacts luminance. Different colors reflect different amounts of light striking their surface, and colors higher on the luminance scale will be brighter when internally illuminated.



Read the full Arts & Science of Sign Design (2012) report at: www.signresearch.org/ArtScience

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