



High Performance

for Better Visibility and Safety

- Promote driving safety
- Improve emergency response way-finding
- Mitigate congestion, facilitate traffic flow
- Meet federal minimum reflectivity requirements
- Demonstrate community pride

High-performance street signs contribute to a safer community.

3M offers the highest performing sheetings on the market today.

- Legible, more visible street signs help drivers navigate more safely and easily, helping to reduce potential crashes and improve traffic flow.
- Federal Highway Administration (FHWA) estimates indicate every \$1.00 spent on sign improvement saves as much as \$22.40 in accident costs.¹
¹FHWA 1996 Annual Report on Highway Safety Improvement Programs
- Streets clearly marked with reflective street name signs help emergency response vehicles reach their destination more quickly.

Highly visible street signs enhance community image.

- Advanced reflective sheeting improves navigation in cluttered visual environments and supports reduced acuity of aging drivers, day and night.
- Street name sign improvement programs help drivers move more efficiently and productively with fewer navigational errors.
- Clear, compliant street signs support traffic efficiency, safety and demonstrate a positive and welcoming civic image.

Diamond Grade sheeting

High intensity beaded sheeting

Engineer grade sheeting

Are your street signs in compliance?

After remaining essentially unchanged for 45 years, proposed federal guidelines set minimum retroreflectivity values for street name and guide signs. Agencies are required to replace any non-compliant signs within ten years of the ruling. This phase-in period allows agencies time to respond to FHWA guidelines. ASTM Type I (Engineer Grade) should not be used.

Sign Color	Criteria	Sheeting Type (ASTM D4956-01a)					
		I	II	III	VII	VIII	IX
White on Red	See Note 1.	35/7					
Black on Orange or Yellow	See Note 2.	*	50				
	See Note 3.	*	75				
Black on White	-----	50					
White on Green	Overhead	*//7	*//15	*//25	250//25		
	Shoulder	*//7	120//15				

Notes:

Levels in cells represent legend retroreflectivity // background retroreflectivity (for positive contrast signs). Units are cd/lx/m² measured at an observation angle of 0.2 and an entrance angle of -4.0.

1. Minimum Contrast Ratio $\geq 3:1$ (white retroreflectivity : red retroreflectivity.)
2. For text signs measuring 48 inches or more and all bold symbol signs.
3. For text signs measuring less than 48 inches and all fine symbol signs.

* Sheeting type should not be used.



Increased sign and lettering size, together with higher performing reflective sheeting, combine to make a difference that is clearly visible.

High performing prismatic street name signs deliver stand-out luminance for better driving safety with lower lifecycle costs.

Standards for good street sign design.

The federal Manual on Uniform Traffic Control Devices (MUTCD) sets standards and guidelines to make street signs more visible to drivers. These recommendations help make signs easy to read, day and night, and in poor driving conditions. Size, contrast, legibility and reflectivity all affect how well a street name sign is not only recognized, but understood.

Target Value

The brightness of the reflective sheeting background most determines how well a street name sign stands out from its surroundings. Higher retroreflective target value produces a more visible street name sign. New FHWA standards state Type I material as “unacceptable” for legends on overhead signs and do not restrict agencies from using higher levels of retroreflectivity.

Contrast

Contrast between a letter (legend) and sign background is necessary to produce high legibility. MUTCD standards recommend white legends on green backgrounds.

Letter Size

Current MUTCD standards require legends with capital letters at least 6 inches high and lower case 4.5 inches. On multi-lanes with speed limits greater than 40 m.p.h., capital letters should be 8 inches high with 6-inch lower case. And for overhead street signs, capital letters of 12 inches and lower case of 9 inches are standard. Designations such as “street,” “avenue” or “road” should be at least 3 inches high.



Letter Spacing

Sign legibility improves with increased space between letters, especially signs fabricated with 3M retroreflective sheeting. To improve legibility, apply FHWA letter spacing guidelines for guide signs to street name signs.

Lettering

In general, using both upper and lower case lettering on street name signs provides better readability and aesthetics than upper case alone.

Border

Target value improves when a border is included to separate the sign from its surroundings. MUTCD standards require that if a border is used, it should be the same color as the legend.

Effective street signs reduce overall costs.

Street name signs made from 3M™ Diamond Grade™ or High Intensity Prismatic Reflective Sheetings are guaranteed to maintain brightness for a decade or longer. This produces lower lifecycle costs for savings in addition to accident reduction.

Recent MUTCD supplements state that “even though the initial costs of Type III materials are slightly higher than Type I materials, the longer material life can produce more economical lifecycle cost.” It also reduces the exposure time of sign technicians replacing deficient signs.

3M innovation includes comprehensive services and support that go well beyond street sign sheeting technology.

- Warranted product installation and maintenance for predictable maintenance budgets
- Traffic sign inventory assessment, replacement implementation and asset management for complete compliance
- Information, assistance and consultation on federal minimum reflectivity rules and expectations of agencies
- Flexible funding programs from a single, trusted source

The innovation leader in traffic safety for more than 65 years, 3M combines comprehensive systems and services with high-performance materials to provide safety and visibility for the life of the road. 3M provides agencies with an array of solutions to enhance transportation safety and mobility.

Learn more about how the leader in reflective sheeting technology can meet your sign sheeting needs. Visit www.3M.com/tss or contact your 3M representative at 800-553-1380.



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