

§ 655.606 Higher cost materials.

The use of signing, pavement marking, and signal materials (or equipment) having distinctive performance characteristics, but costing more than other materials (or equipment) commonly used may be approved by the FHWA Division Administrator when the specific use proposed is considered to be in the public interest.

§ 655.607 Funding.

(a) *Federal-aid highways.* (1) Funds apportioned or allocated under 23 U.S.C. 104(b) are eligible to participate in projects to install traffic control devices in accordance with the MUTCD on newly constructed, reconstructed, resurfaced, restored, or rehabilitated highways, or on existing highways when this work is classified as construction in accordance with 23 U.S.C. 101(a). Federal-aid highway funds for eligible pavement markings and traffic control signalization may amount to 100 percent of the construction cost. Federal-aid highway funds apportioned or allocated under other sections of 23 U.S.C. are eligible for participation in improvements conforming to the MUTCD in accordance with the provisions of applicable program regulations and directives.

(2) Traffic control devices are eligible, in keeping with paragraph (a)(1) of this section, provided that the work is classified as construction in accordance with 23 U.S.C. 101(a) and the State or local agency has a policy acceptable to the FHWA Division Administrator for selecting traffic control devices material or equipment based on items such as cost, traffic volumes, safety, and expected service life. The State's policy should provide for cost-effective selection of materials which will provide for substantial service life taking into account expected and necessary routine maintenance. For these purposes, effectiveness would normally be measured in terms of durability, service life and/or performance of the material. Specific projects including material or equipment selection shall be developed in accordance with this policy. Proposed work may be approved on a project-by-project basis when the work is (i) clearly warranted, (ii) on a Federal-aid system, (iii) clearly identified

by site, (iv) substantial in nature, and (v) of sufficient magnitude at any given location to warrant Federal-aid participation as a construction item.

(3) The method of accomplishing the work will be in accordance with 23 CFR part 635, subpart A, Contract Procedures.

(b) *Off-system highways.* Certain Federal-aid highway funds are eligible to participate in traffic control device improvement projects on off-system highways. In addition, Federal-aid highway funds apportioned or allocated in 23 U.S.C. are eligible for the installation of traffic control devices on any public road not on the Federal-aid system when the installation is directly related to a traffic improvement project on a Federal-aid system route.

APPENDIX TO SUBPART F OF PART 655—
ALTERNATE METHOD OF DETERMINING THE COLOR OF
RETROREFLECTIVE SIGN MATERIALS

1. The FHWA Color Tolerance Charts provide that conventional color measuring instruments such as spectrophotometers and tristimulus photoelectric colorimeters should not be used for measurement of retroreflective material colors and that such materials should be evaluated visually using the Color Tolerance Charts and paying strict attention to prescribed illumination and viewing conditions.

2. As an alternate to visual testing, the diffuse day color of retroreflective sign material may be determined in accordance with ASTM E 97, "Standard Method of Test for 45-Degree, 0-Degree Directional Reflectance of Opaque Specimens by Filter Photometry." Geometric characteristics must be confined to illumination incident within 10 degrees of, and centered about, a direction of 45 degrees from the perpendicular to the test surface; viewing is within 15 degrees of, and centered about, the perpendicular to the test surface. Conditions of illumination and observation must not be interchanged.

3. Standards to be used for reference are the Munsell Papers designated in Table 1 or Table II, attached. The papers must be recently calibrated on a spectrophotometer. Acceptable test instruments are:

- a. Gardner Multipurpose Reflectometer or Model XL 20 Color Difference Meter,
 - b. Gardner Model Ac-2a or XL 30 Color Difference Meter,
 - c. Meeco Model V Colormaster,
 - d. Hunter lab D25 Color Difference Meter,
- or
- e. Approved equal.

4. Average performance sheeting is identified as Types I and II sheeting and high performance sheeting is identified as Types III and IV sheeting in Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects³ (FP-79, Section 633).

TABLE I—COLOR SPECIFICATION LIMITS AND REFERENCE STANDARDS, TYPES I AND II SHEETING

Color	Chromaticity coordinates ¹ (corner points)								Reflectance limits (percent Y) Y		Reference ³ standard (munsell papers)
	1		2		3		4		Minium	Max-imum	
	x	y	x	y	x	y	x	y			
White ² .....	.305	.290	.350	.342	.321	.361	.276	.308	35	—	6.3Gy 6.77/0.8.
Red .....	.602	.317	.664	.336	.644	.356	.575	.356	8	12	8.2R 3.78/14.0.
Orange .....	.535	.375	.607	.393	.582	.417	.535	.399	18	30	2.5YR 5.5/14.0
Brown .....	.445	.353	.604	.396	.556	.443	.445	.386	4	9	5.OYR 3/6.
Yellow .....	.482	.450	.532	.465	.505	.494	.475	.485	29	45	1.25Y 6/12.
Green .....	.130	.369	.180	.391	.155	.460	.107	.439	3.5	9	0.65BG 2.84/8.45.
Blue .....	.147	.075	.176	.091	.176	.151	.106	.113	1.0	4	5.8PB 1.32/6.8.

¹ The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illumination source C.

² Silver white is an acceptable color designation.

³ Available from Munsell Color Company, 2441 Calvert Street, Baltimore, Maryland 21218.

TABLE II—COLOR SPECIFICATION LIMITS AND REFERENCE STANDARDS, TYPES III AND IV SHEETING

Color	Chromaticity Coordinates ¹ (corner points)								Reflectance limits (percent Y) Y		Reference ³ standard (munsell papers)
	1		2		3		4		Min.	Max.	
	x	y	x	y	x	y	x	y			
White ² .....	.303	.287	.368	.353	.340	.380	.274	.316	27	.....	5.0PB 7/1.
Red .....	.613	.297	.708	.292	.636	.364	.558	.352	2.5	11	7.5R 3/12.
Orange .....	.550	.360	.630	.370	.581	.418	.516	.394	14	30	2.5YR 5.5/14.
Yellow .....	.498	.412	.557	.442	.479	.520	.438	.472	15	40	1.25Y 6/12.
Green .....	.030	.380	.166	.346	.286	.428	.201	.776	3	8	10G 3/8
Blue .....	.144	.030	.244	.202	.190	.247	.066	.208	1	10	5.8PB 1.32/6.8.

¹ The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illumination source C.

² Silver white is an acceptable color designation.

³ Available from Munsell Color Company, 2441 Calvert Street, Baltimore, Maryland 21218.

Subpart G [Reserved]

PART 656—CARPOOL AND VANPOOL PROJECTS

Sec.

656.1 Purpose.

656.3 Policy.

656.5 Eligibility.

656.7 Determination of an exception.

AUTHORITY: 23 U.S.C. 146 and 315; sec. 126 of the Surface Transportation Assistance Act of 1978, Pub. L. 95-599, 92 Stat. 2689; 49 CFR 1.48(b).

SOURCE: 47 FR 43024, Sept. 30, 1982, unless otherwise noted.

§ 656.1 Purpose.

The purpose of this regulation is to prescribe policies and general procedures for administering a program of ridesharing projects using Federal-aid primary, secondary, and urban system funds.

§ 656.3 Policy.

Section 126(d) of the Surface Transportation Assistance Act of 1978 declares that special effort should be made to promote commuter modes of transportation which conserve energy, reduce pollution, and reduce traffic congestion.

³This document is available for inspection and copying as prescribed in 49 CFR part 7, appendix D.