

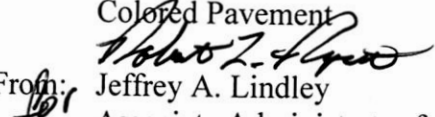


U.S. Department
of Transportation
Federal Highway
Administration

Memorandum

Subject: **INFORMATION:** MUTCD – Official
Ruling 3(09)-24(I) – Application of
Colored Pavement

Date: **AUG 15 2013**

From: 
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Associate Administrator for Operations

In Reply Refer To:
HOTO-1

To: Federal Lands Highway Division Engineers
Division Administrators

Purpose: Through this memorandum, the Federal Highway Administration's (FHWA) Office of Transportation Operations (HOTO) is issuing an Official Interpretation of Chapter 3G of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) on the approved uses of colored pavement. For recordkeeping purposes, this Official Ruling has been assigned the following number and title: "3(09)-24(I) – Application of Colored Pavement."

Background: The FHWA is concerned that considerable ambiguity continues regarding how colored pavement can be used, especially between the white transverse lines of a legally marked crosswalk.

Colored pavements consist of differently colored road paving materials, such as colored asphalt or concrete, or paint or other marking materials applied to the surface of a road or island to simulate a colored pavement. Colored pavement is a traffic control device when it attempts to communicate with any roadway user or when it incorporates retroreflective properties. Colored pavement can also be a purely aesthetic treatment. When used in this manner, colored pavement is not a traffic control device provided that it does not attempt to communicate with the motorist or incorporate elements of retroreflectorization.

Colored Pavement in Crosswalks: In the late 1990s, the marketplace introduced and promoted aesthetic treatments for urban streetscape environments that included the opportunity to install a range of colors and a multitude of patterns. The most popular opportunity to implement these treatments was between the legally marked transverse lines of crosswalks. This was typically done as part of larger efforts by cities to enhance the aesthetics of an area that could include decorative luminaires, street furniture, sidewalk art, etc. These crosswalk treatments were publicized and marketed as a method to increase conspicuity of the crosswalk that would translate into increased safety and a reduction of pedestrian deaths. In December 2001, the FHWA issued its first Official Ruling¹

¹ MUTCD Official Ruling 3-152 (I) as Memorandum of Action, December 7, 2001

regarding the use of these aesthetic treatments, which concluded that crosswalk enhancements of this type had no such discernible effect on safety or crash reduction.

The marketplace looked to capitalize on advancements in pavement retroreflectivity in the mid-2000s, and further advocated for these aesthetic treatments on public streets as a way to increase crosswalk visibility. This included the benefits of the increased recognition of crosswalks both during the day and at night since the materials were designing retroreflective properties into the aesthetic treatments. In 2004 and in 2005, the FHWA issued two separate but related Official Rulings^{2,3} concluding that incorporating retroreflectivity into an aesthetic crosswalk treatment renders it an official traffic control device. Further, these Official Rulings continued to discourage implementation of such treatments and also concluded that these enhancements still had no increased effect on safety or contributed to a reduction in pedestrian deaths.

The evolution of crosswalk treatments continued into the form of “crosswalk art” because it was becoming a common misconception that as long as the white transverse lines were present—thereby legally marking the crosswalk—then the agency was free to treat the interior portion of the crosswalk as it desired. In 2011, the FHWA issued an additional Official Ruling⁴ that crosswalk art—defined as any freeform design to draw attention to the crosswalk—would degrade the contrast of the white transverse lines against the composition of the pavement beneath it. In deviating from previous Official Rulings on the matter that concluded an increased factor of safety and decreased number of pedestrian deaths were not evident after installation, this 2011 Official Ruling stated that the use of crosswalk art is actually contrary to the goal of increased safety and most likely could be a contributing factor to a false sense of security for both motorists and pedestrians.

The FHWA’s position has always been, and continues to be that subdued-colored aesthetic treatments between the legally marked transverse crosswalk lines are permissible provided that they are devoid of retroreflective properties and that they do not diminish the effectiveness of the legally required white transverse pavement markings used to establish the crosswalk. Examples of acceptable treatments include brick lattice patterns, paving bricks, paving stones, setts, cobbles, or other resources designed to simulate such paving. Acceptable colors for these materials would be red, rust, brown, burgundy, clay, tan or similar earth tone equivalents. All elements of pattern and color for these treatments are to be uniform, consistent, repetitive, and expected so as not to be a source of distraction. No element of the aesthetic interior treatment is to be random or unsystematic. No element of the aesthetic interior treatment can implement pictographs, symbols, multiple color arrangements, etc., or can otherwise attempt to communicate with any roadway user.

Patterns or colors that degrade the contrast of the white transverse pavement markings establishing the crosswalk are to be avoided. Attempts to intensify this contrast by increasing or thickening the width of the transverse pavement markings have been observed in the field. These attempts to increase contrast are perceived to be efforts to circumvent the contrast prerequisite so that an intentional noncompliant alternative of an aesthetic interior pattern or color can be used. Further techniques to install an empty buffer

² MUTCD Official Ruling 3-169 (I) – Section 3B.19 Retroreflective Colored Pavement, September 1, 2004

³ MUTCD Official Ruling 3-178 (I) – Retroreflective Colored Pavement – Additional Clarification, April 27, 2005

⁴ MUTCD Official Ruling 3(09)–8 (I) – Colored Pavement Treatments in Crosswalks, May 3, 2011.

space between an aesthetic treatment and the interior edge of the white transverse crosswalk markings have also been observed in the field. This strategy is also perceived to be an attempt to circumvent FHWA's prior position on contrast. However, an empty buffer space between a subdued-colored, uniform-patterned aesthetic treatment can be implemented to enhance contrast between the aesthetic treatment and the white transverse pavement markings. When used properly, buffer spaces can be an effective tool to disseminate a necessary contrast in order to visually enhance an otherwise difficult to discern white transverse crosswalk marking, provided that the aesthetic treatment conforms to the conditions in the preceding paragraph.

Colored Pavement in Medians: Several agencies nationwide have used aesthetic colored pavement in medians that separate opposite directions of travel. These treatments are typically simulated red brick patterns or pavers. This is allowable if the median is closed to traffic. Where the center portion of the roadway functions to facilitate turns or operates as a two-way left turn lane, aesthetic treatments cannot be used in that center area in accordance with Paragraph 3 of Section 3G.01 in the MUTCD. Further, provisions elsewhere in Part 3 of the MUTCD require or recommend the turning functions of turn lanes or two-way left turn lanes to be marked with pavement word markings or arrows where applicable. The use of aesthetic colored patterns or pavers in these lanes simulates a supplemental background to standard turn markings and is an attempt to enhance conspicuity of the median thereby serving as communication with the motorist. This practice to use aesthetic treatments is disallowed since the median is open to traffic.

Colored Pavement for Islands: Where an island is designated as a traffic-control device, curbs, pavement edges, pavement markings, channelizing devices, or other devices are used. Islands are most commonly used to separate traffic movements or to provide pedestrian refuge. Regardless of whether the island is raised or flush with the roadway surface, islands are a potential for providing aesthetic qualities. Islands that separate movements of traffic and choose to incorporate colored pavement into interior sections or to the top surface of their design are to comply with Item A or B of Paragraph 3 of Section 3G.01. This would be applicable when the island is used to address a need to facilitate traffic that would otherwise have difficulty navigating the roadway if the island was absent.

Islands that are intentionally aesthetic in nature only are to be designed similar to those aesthetic treatments for crosswalks as described above. The most common applications of these purely aesthetic treatments are pedestrian refuge islands and textured raised buffers between a bikeway and a motorized vehicular lane.

Colored Pavement for Bicycle Lanes: Green colored pavement is approved for use in bicycle lanes only to enhance the conspicuity of where bicyclists are required to operate, and areas of the bicycle lane where bicyclists and other roadway traffic might have potentially conflicting weaving or crossing movements. Approval to use green colored pavement shall be in accordance with Paragraph 17 of Section 1A.10 in the 2009 MUTCD.

The FHWA issued an Interim Approval (IA-14) for the use and application of green colored pavement on April 15, 2011. The information provided in the IA-14 memorandum remains in effect.

The use of green colored pavement in a bicycle facility other than a legally marked bicycle lane is either not approved or is experimental. FHWA's Bicycle and Pedestrian Web site (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm) can be helpful in determining what is or is not approved and what is experimental. Agencies that desire to use bicycle facilities that are experimental are required to submit their request for approval in accordance with paragraphs 3, 4 and 8 through 10 of Section 1A.10 in the MUTCD.

The FHWA is aware that agencies might be using green colored pavement to supplement, fill in or outline parking stalls for electric vehicle charging stations in order to express the agency's commitment to environmentally friendly initiatives. Use of green colored pavement for this purpose is not allowed. Although the applicability of the MUTCD may be limited in certain settings involving parking stalls, agencies are encouraged to adhere to the MUTCD with respect to disallowing green colored pavement in parking facilities for the purpose of maintaining uniformity among similar facilities.

Colored Pavement on Freeways and Expressways: The FHWA is aware of agencies nationwide using colored pavement on higher speed facilities as a method to visually differentiate the shoulder or special-use lanes from the general-purpose lanes, to demarcate the exit gore area, or to differentiate a ramp terminal from the mainline facility. The FHWA maintains the position that contrasting techniques on high-speed facilities have no other intention than to communicate with the motorist, regardless of whether elements of retroreflectivity are implemented for the colored pavement.

Additionally, the 2011 edition of the American Association of State Highway and Transportation Officials' *A Policy on the Geometric Design of Highways and Streets* discusses various methods of contrasting the shoulder with the adjacent pavement traveled way. The policy states that with regard to bituminous pavements, "the use of edge lines as described in the Manual on Uniform Traffic Control Devices... reduces the need for shoulder contrast." Edge lines separating shoulders from the traveled way on Interstate routes have been required by the MUTCD since 1971, supplanting the practice of using contrasting material for shoulders when an edge line was optional. Therefore, there should be little need for such a contrast that cannot be accommodated by the allowable pavement colors prescribed by the MUTCD.

If a need to provide contrast on a high-speed facility has been determined, then that contrast can be accomplished by a number of alternatives. Asphalt mixtures can be tinted to provide a shade of grey. White colored pavement can also be implemented. Paragraph 3 of Section 3G.01 in the MUTCD allows the use of white colored pavement for exit gore areas and right-hand shoulders. In the event that the main traveled way is concrete, an asphalt top layer could be applied to the shoulder to provide contrast.

Colored Pavement for Public Transit Systems: The use of red colored pavement for public transit systems such as streetcar and/or bus-only lanes is currently experimental. The use of colored pavement in these settings requires approval from the FHWA's Office of Transportation Operations. Agencies that desire to experiment with colored pavement should only do so where an engineering study can determine that increased travel speeds will be expected by the public transit vehicle, reduced overall service time through the corridor will be expected by the public transit vehicle, and the implementation of the

colored pavement to a converted general purpose lane in the traveled way will not adversely affect the traffic flow in the remaining general purpose lanes.

Blue Colored Pavement: Blue is not a colored pavement and is not to be used as such in accordance with Paragraph 3 of Section 3G.01. Blue as it applies to a pavement marking is exclusively reserved for the background color in the international symbol of accessibility parking symbol (see Figure 3B-22) and for the supplemental pavement marking lines that define legal parking spaces reserved for use only by persons with disabilities as provided in Paragraph 5 of Section 3A.05.

Applying blue colored pavement to entire stalls or entire areas of parking reserved for persons with disabilities is to be avoided. Although the applicability of the MUTCD may be limited in certain settings involving parking stalls, agencies are encouraged to adhere to the MUTCD with respect to blue colored pavement in parking facilities for the purpose of maintaining uniformity among similar facilities.

Purple Colored Pavement: Purple is not approved for use as a colored pavement in any application, including toll facility environments. Purple as a pavement marking color is permitted in accordance with Paragraphs 5 and 6 of Section 3E.01 of the MUTCD.

Chromaticity Coordinates: The acceptable ranges of chromaticity coordinates that define the standard colors for pavement markings are found in the Appendix to Subpart F of 23 CFR 655—Alternate Method of Determining the Color of Retroreflective Sign Materials and Pavement Marking Materials.

Acceptable ranges for the chromaticity coordinates defining the color green for use as a pavement marking are provided in the IA-14 memo dated April 15, 2011.

Conclusion: Chapter 3G of the 2009 MUTCD contains provisions regarding the use of colored pavements. If colored pavement is used to regulate, warn, or guide traffic or otherwise attempts to communicate with the roadway user, the colored pavement constitutes a traffic control device. Agencies cannot intentionally exclude elements of retroreflectivity as part of a systematic process to classify the color pavement as a purely aesthetic treatment in order to circumvent the provisions of Chapter 3G.

Paragraph 3 of Section 3G.01 in the MUTCD limits the use of colored pavement used as a traffic control device to the colors yellow and white. Interim Approval IA-14 permits the use of green colored pavement for marked bicycle lanes. All other colors for use on highway pavement in the right-of-way are either disallowed or are experimental as described above, unless the colored pavement is a purely aesthetic treatment and makes no discernible attempt to communicate with a roadway user.

cc:

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