



U.S. Department
of Transportation
**Federal Highway
Administration**

Jim Barron

400 Seventh St., S.W.
Washington, D.C. 20590

December 23, 2004

Refer to: HOTO-1

Mr. Tom Wickett
National Sales Manager – Highway Products
Röhm America LLC
2 Turner Place
Piscataway, NJ 08855

Dear Mr. Wickett:

Thank you for your December 1 letter, requesting an interpretation of Part 3 of the Manual on Uniform Traffic Control Devices (MUTCD) regarding the visual properties that constitute a longitudinal pavement marking line. Specifically, you referred to a textured line product called the "Pathfinder Pavement Marking System," which features individual cold plastic agglomerations applied to the pavement to form a solid line with increased wet night visibility. This marking, when viewed from a very close position, does not fully cover the underlying pavement. Small areas of black pavement can be seen between the much larger areas of individual white marking material. You provided photos of lines installed on roadways in Europe using this product, and a copy of applicable pavement marking material specifications from Germany. You specifically asked whether the Pathfinder lines could be considered a continuous (solid) line as defined by the MUTCD.

Unfortunately, the MUTCD does not specifically define the term "solid line." In Section 3A.05, broken lines and dotted lines are defined in terms of their widths and patterns, and the fact that they are comprised of line segments separated by gaps. By common usage in the English language, and as can be inferred from Section 3A.05, a solid line segment is a segment of line that is continuous and does not have gaps. The question is, to fulfill the purposes of a solid line or a continuous line segment in communicating the intended message to road users, must a line be 100 percent solid (totally covering the underlying pavement) or, if it is not 100 percent solid, what percentage of the pavement underlying the marked line must be covered?

In reviewing the German specifications for pavement markings materials, Section 4.2 on page 10 addresses markings specifically designed for increased wet night visibility by being formed to protrude from the flat surface of the marking. The German specifications state that a marking of this type must be "filled out" across its entire surface, but that:

"A marking consisting of individual parts is also considered to be filled out across its entire surface if, from the perspective of a lorry [truck] driver (average eye-level 2.2 m) at 30 m viewing distance, its entire surface is visible."

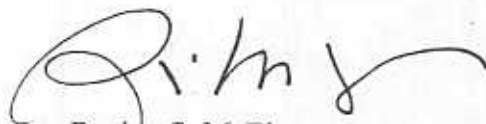


We believe that a line that gives the unambiguous appearance of being solid (as opposed to dotted) to road users could probably be considered a solid line for MUTCD purposes, even though the materials used to form the line do not entirely cover the underlying pavement. How the line appears to truck drivers, whose eyes are higher above the road surface than those of passenger car drivers, would be an important governing factor. The German way of defining what constitutes "filled out" for a marking consisting of individual parts seems to be a reasonable approach, but the information you provided does not indicate what research, if any, was conducted in Germany in order to develop their specified eye height and viewing distance.

Before any definitive judgment can be made on this matter, it is necessary that research be done in this country, using vehicles representative of the vehicles in the U.S. fleet, including trucks having the highest driver seating position, and using U.S. drivers. Such research should be designed to determine an appropriate eye height and viewing distance, as well as objective measures of "solidness" to be applied by test subjects, that could be used to evaluate not only your product but also others that may exist or be developed in the future. You may wish to explore the possibility of such research with universities or other appropriate facilities. Meanwhile, jurisdictions in the United States that wish to use products such as yours that do not totally cover the pavement under the intended solid line should request experimentation approval from the FHWA under the provisions of Section 1A.10 of the MUTCD.

Thank you for writing on this subject. If you have any questions, please call Mr. Scott W. Wainwright of our staff at 202-366-0857. Please note that we have assigned your request the following official interpretation number and title: "3-174 (I)—Continuous Line Segment Determination." Please refer to this number in any future correspondence.

Sincerely yours,



Regina S. McElroy
Director, Office of Transportation
Operations

FHWA:HOTO-1:SWainwright:ds:60857:12-13-04

cc: HOTO-1 HOTO-1(EHuckaby/SWainwright)

Mr. Martin Knopp, HRC-MW HDA-NJ(2)

Mr. Pat Hasson, HRC-MW Mr. Bob Garrett, NCUTCD

Mr. Roger Wentz, ATSSA Mr. Jim Barron, ATSSA

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Röhm America

December 1, 2004

Mr. Ernest Huckaby
MUTCD Team Leader
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Dear Mr. Huckaby:

Re: MUTCD Guidelines for 'Solid Line Markings' applicable to Pathfinder system

I attach a copy of the final draft of the German BaSt "Additional Technical Conditions of Contract and Guidelines for Markings on Roads. ZVT – M 2000".

This document provides some very useful information which should assist you and your colleagues to arrive at a decision to designate the Pathfinder system in the solid line category. In reviewing the document I would refer you in particular to section 4.2 on page 10, Type II marking systems (markings with increased night visibility in the wet). The Type II is the Pathfinder/Agglomerate system, used extensively in Europe and which we have referred to in recent correspondence and the sample we submitted to you recently..

I have also attached a copy of some photographs that I took in Zurich, Switzerland in April, 2002 which I think clearly illustrates the properties of the Pathfinder line when viewed from a standing position, looking down at the line and the solid line appearance when looking from a standing position into the middle and far distance.

If you have any questions or require more information after you have reviewed the attached document, please don't hesitate to contact either Bryce Anderson at Ennis Paint or myself.

Sincerely,



Tom Wickett.
National Sales Manager – Highway Products.

CC: Bryce Anderson – Ennis Paint, Borys Schafran

Enclosure.