

9710700 Traffic Marking Materials
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

3M Grier Kirkpatrick:
Smith, Barry

Comment: (6-12-13) 971-7.8 Elongation needs to be removed as per prior discussions. (Chester agreed to remove this from the specification years ago. We had similar test results the first go around. After sending the attached letter and meeting with FDOT to discuss the design of our tape, the benefits of tensile strength vs elongation, and the fact that FDOT encourages Thermoplastic on PCC edgelines without an elongation requirement, all of our high performance tape product elongation test results were accepted and approved. Special attention should be given to the tensile test results for explanation of elongation results (just as in 2008). Please do not remove our product from QPL and instead please request that Roadway Design issues a variance and then remove the test from the specification as originally planned in 2008-2009. I am sure that with all of the revisions to the pavement marking specification since 2008, that Chester simply missed this revision. No big deal..... If required, we would be happy to schedule a meeting with FDOT ASAP to further discuss.)

Response: Elongation was not part of this modification. I agree it needs to be addressed. I dropped the issue after it came up before, so it is not like I need a long time to get this addressed. It is just that we have very little time to get things in this workbook. I commit to having this addressed promptly as we discussed at the meeting with 3M on June 13th at the Design Expo. As soon as I collect some data, we will schedule a meeting to discuss the information with 3M on what we propose to do. No change made.

Karen Byram
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Comment: (6-19-13) There are several items to be addressed.

1. Since there is no longer a differentiation in the classifications, the second sentence, in 971-7, should be deleted: "The markings are classified as High Performance".

Response: The ASTM for tape markings has two levels of retroreflectivity. I believe we should not change it to high performance because we may want to keep our options open. We have discussed the consideration of tape products for messages arrow and symbols. These would not be high performance. No change made.

2. The title of 971-12 should be changed to "Service Life" for the same reason as #1.

Response: I think you mean 971-7.12. The title of the section will be changed to Retroreflectivity to be consistent with other specifications rather than service life. Change made.

3. The Elongation in 971-7.8 needs to be addressed. I understand that this was not part of this modification, but it has been outstanding for over a year and now is good time to do it while there are other spec modifications.

Response: I agree it needs to be addressed. I dropped the issue after it came up before, so it is not like I need a long time to get this addressed. It is just that I can't get it done in the time we have left to get things in this workbook. I commit to having this addressed promptly and it will be in the next workbook edition. No change made.

MaryJo Lewis
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Comment: (6-24-13) We would like to comment specifically on Specification 9710700, Traffic Marking Materials. The proposed changes are acceptable as drafted; however, we wish to comment on two subsections within the specification document. 971-7.3 Skid Resistance: The surface of the stripes and markings shall provide a minimum skid resistance value of 35 BPN when tested according to ASTM E303. Bike lane symbols and pedestrian crosswalks shall provide a minimum skid resistance value of 55 BPN. It is 3M's recommendation that a single value of 45 BPN skid apply to both roadway long line markings and bike lanes/crosswalks. 971-7.8 Elongation: The stripes and markings shall have a minimum elongation of 25% when tested in accordance with ASTM D 638. Elongation is not applicable for tapes containing nettings. 3M's durable tapes contain nettings to improve the physical durability of the markings and to minimize stretch during application, which is undesirable for the applied tape. While it is recognized that the tape should have enough elongation to expand and contract with pavement surfaces, the coefficient of thermal expansion of both concrete and asphalt are very low (approx. 5 to 30 X10-6 /oF), such that just a 1-2 % elongation is more than sufficient to accommodate any possible thermally induced expansion. ASTM D4505, Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life, has no requirement for elongation. 3M would recommend (1) eliminating this requirement altogether, or (2) reducing the minimum requirement for elongation to a low level, ie 10% or less.

Response: Skid resistance and elongation were not part of this modification. See response 3 of Karen Byram's comments. No changes made.

Stefanie Maxwell
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Comment: (6-25-13) The name for permanent tape in Section 971 is inconsistent with Section 713. Don't forget to remove Standard Tape from FM 5-541.

Response: I agree will make change. I will submit change to drop Standard Tape from FM 5-541. Change made.

V. Y. "Trey" Tillander III, P.E.
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Comment: (7-11-13) RE: removing standard tape from 713 and 971, I agree with the change. My question is on the terminology and structure of the specs....if all we're left with is high-performance tape, doesn't that just become our permanent tape without any types? Or is "high-performance" still an industry term that we need to keep?

Response: It is an industry term. There are other tapes that are considered standard tapes, which could not meet our specifications. No Change Made.
