

MATERIALS & RESEARCH DIVISION

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RESEARCH UPDATE

NUMBER 87-11

Hercules, Fiber Pave 3010, Polypropylene Fiber

REFERENCE:

Research Report 84-7, Dtd Sept. 84

HISTORY:

On August 5, 1983 approximately 105 tons of bituminous concrete mix modified with Hercules fibers was placed as a 1" wearing course on a 1500' section of Route 14 in Royalton. The placement included test section #1 with 6 lbs of fibers per ton of mix and test section #2 which used fibers at a rate of 10 lbs per ton of mix.

Preconstruction crack counts revealed an average of 377' of cracks per 100' of 22' roadway. 64% of the cracks were longitudinal. On April 9, 1984 a followup crack count revealed that in test section 1 34% of the cracks in the standard mix and 12% in the modified mix had reflected. In test section 2, 30% had reflected in the standard and 5% in the modified mix.

STATUS:

A follow up crack count on April 22, 1987, revealed that the standard mix in test section 1 had sustained 84% crack reflection and the modified mix had sustained 32%. In test section 2, 98% of the cracks had reflected in the the standard mix while only 6% had reflected in the fiber modified mix.

Mays (rideability) metering on 10-26-1987 produced averages for the test area of 95 Vertical inches per mile in the southbound, modified mix, and 103 in the northbound, standard mix. While the differences are slight, the rating for the modified mix is good (70-100) as compared to fair (100-130) for the standard mix.

SUMMARY:

Preliminary observations reveal that, the modified pavement has outperformed the standard mix in reflective crack prevention, while rideability is similar in both pavements at this time.

The pavements will remain under evaluation to determine long term effectiveness over the pavement life cycle.

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