

Introduction

The slipperiness of highway pavements has been a concern of highway engineers and researchers for many years.

In 1958 the Virginia Highway Department under the direction of the late T. E. Shelburne, Director of the Virginia Council of Highway Research and Investigation, sponsored the First International Skid Prevention Conference in Charlottesville, Virginia. In connection with this conference, a correlation study of the known methods of measuring skid resistance in the field was held. Following this initial conference the interest in this area was greatly stimulated to the extent that ASTM Committee E-17 on Skid Resistance was organized.

In 1962 the Virginia Highway Department with the cooperation of ASTM Committee E-17 organized a Skid Correlation Study to study the progress that had been made in the methods of determining the skid resistance of pavements in the field since the 1958 study. This study was held near Tappahannock, Virginia on an abandoned airstrip where it was possible to construct four pavement surfaces of four different degrees of slipperiness. Tests were run using the stopping distance method, skid trailers and British Portable Testers. Both governmental and private organizations who owned equipment for this type of testing participated in the study using their equipment. In addition to organizations from this country two foreign countries were represented.

Data collected and analyzed from the 1962 Study were largely the basis for the preparation of a Test Method for Measuring the Skid Resistance of Pavements Using a Two Wheel Trailer designated as ASTM E 274-65T and a Test Method for Measuring Surface Frictional Properties Using the British Portable Tester, ASTM Designation E 303-66-T.

Following the preparation of ASTM E 274-65-T, The Florida State Road Department agreed to construct a pilot model skid trailer in accordance with the specifications for the equipment included in the test method. While Florida was developing their trailer,

several other State Highway Departments and private organizations also built trailers in substantial compliance with the specifications in ASTM E 274-65-T.

In 1967 the State Road Department of Florida in cooperation with the Bureau of Public Roads and with the help and guidance of ASTM Committee E-17 organized another Skid Correlation Study along similar lines to the 1962 study in Virginia. The primary objective of this study was to evaluate the degree of standardization achieved by the construction of the new trailers all based on the same specification in ASTM E 274-65-T. Stopping distance tests were also run using passenger cars and a semi-trailer truck. In addition, a limited number of tests were run using the portable testers. Twenty different organizations participated in this study.

The objective of the symposium at the Fall Meeting of ASTM in Atlanta in September 1968 was to report the test results of the Florida Correlation Study and to report other recent research on the measurement of skid resistance not covered in the correlation study. Four papers are included in this publication.

The paper by L. L. Smith and S. L. Fuller, "Florida Skid Correlation Study," is a report on the general organization and conduct of the study and detailed report on the tests using the skid trailers of which there were twelve.

"Skid Testing With Automobiles at the Florida Skid Correlation Study" by R. L. Rizenbergs, as the title implies, is a report on the stopping distance tests using automobiles. The description of the instrumentation used in one of the cars is an interesting report by itself. Also the consistency of the results obtained by this method is interesting.

"The Stopping and Cornering Capacity of Passenger Car Studded Tires," by E. A. Whitehurst is a report of the 1968 tests on ice using studded tires. It is a continuing report of tests of this type run annually in the winter in Wisconsin. These tests have been run for several years.

The paper, "Porous Pavement Testing," by J. W. Hutchinson, T. Y. Kao, and L. C. Pendey is the description of a unique piece of equipment for measuring the dynamic permeability of pavement surfaces and a discussion of the test results obtained with it. There is also a discussion of the contribution of the hydrodynamic characteristics of pavement surfaces to their skid resistance.

This publication contains therefore an up to date description and discussion of the state-of-the-art of measuring the skid resistance of pavement surfaces. It should be of real interest to any one who is concerned with pavement slipperiness.

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