

Introduction

Surface texture, with its attendant effects on phenomena at the tire-pavement interface, greatly influences the frictional properties and therefore the safety of highway and runway surfaces.

Tire-pavement interface frictional forces must be sufficient to prevent skidding and loss of directional control under generally accepted normal operating conditions. Texture at the pavement surface not only contributes directly to development of frictional forces, but also provides sources of contact with the tire by projecting through lubricating films of water, oil, or other contaminants. Type and amount of texture are important variables in both cases. Texture plays an increasingly more important role as increasing vehicular speeds increase the lubricant film thicknesses encountered by the moving tire.

Although the importance of surface texture has been acknowledged for many years, measurement and description of textural parameters have not been standardized with regard to procedures and terminology. Recognizing this fact, ASTM Committee E-17 on Skid Resistance considered it desirable to organize and sponsor this symposium, emphasizing the following four areas of interest in the contribution of surface texture to tire-pavement interaction processes: (1) findings from recent research directed toward measuring and describing surface texture for purposes of predicting skid resistance from texture, (2) effects of the frictional aspects of surface texture on skid resistance, (3) procedures for characterizing standard surfaces, and (4) surface texture in relation to highway and runway safety.

The initial four papers are primarily concerned with procedures for measuring and evaluating surface texture; the next four papers address the more fundamental aspects of tire-pavement interface phenomena; the concluding two papers are directed more toward the safety aspects of pavement surface texture.

Pavement design engineers and researchers are faced with an increasingly important problem of specifying, designing, and constructing wearing surfaces that will provide safe friction levels for expected vehicular operating conditions. It is hoped that previously-accumulated knowledge along with the contents of the papers contained herein can serve as a guide to more effective

means of reducing transportation related deaths, injuries, and property damage resulting solely or in-part from slippery pavement surfaces.

J. G. ROSE

Assistant Professor of Civil Engineering,
University of Kentucky; symposium chairman