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16. Abstract

The Ohio Department of Transportation constructed an experimental pavement for the Strategic Highway Research Program (SHRP) on U.S. 23 north of Columbus, which included 40 asphalt and concrete test sections in the SPS-1, 2, 8 and 9 experiments. These sections contained various combinations of structural parameters known to affect performance.

To enhance the value of this pavement, sensors were installed in 18 test sections to continuously monitor temperature, moisture and frost within the pavement structure, and 33 test sections were instrumented to monitor strain, deflection and pressure generated by environmental cycling and dynamic loading. Also, two weigh-in-motion systems and a weather station were installed to continuously gather the necessary traffic and climatic information required to properly interpret the performance data. Six universities, including Ohio University which coordinated this effort, were responsible for installing and monitoring the instrumentation. Nondestructive testing conducted with the FWD and Dynaflect, and five series of controlled vehicle tests were performed between 1995 and 1998 to assess the response of these test sections to dynamic loading. This report documents how the instrumentation was installed and monitored, provides details of the controlled vehicle tests, and summarizes results of the nondestructive testing.

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