



RESEARCH NOTES HIGHWAY DIVISION RESEARCH SECTION

1174 CHEMEKETA STREET NE. SALEM, OREGON 97310 503-378-2318

RSN 85-6

USE OF DMSO AGGREGATE TEST TO BE INVESTIGATED

A cooperative study between Oregon State University and the Oregon Department of Transportation will investigate the DMSO test used to evaluate aggregate resistance to deterioration. One purpose of the study is to identify the types of rock containing clay mineral which DMSO can accurately identify. A second is to conclude if rock reactive with DMSO can be used in a pavement or base structure. If successful, the study will result in fewer post-construction failures, more conservative engineering designs, and a significant cost savings to the State.

In recent years the DMSO test has been used in testing rock to identify sources containing problem materials. Other tests such as the sodium sulfate soundness, abrasion, and air degradation methods have been used to qualify sources and accept produced aggregate. The OSU study will provide a method and criteria to better identify quality aggregates for acceptable performance of pavement and base.

The OSU investigation will further qualify the results of the DMSO test by relating rock properties with deterioration potential. The less apt the rock is to degrade from weathering, the stronger it will be rated in terms of pavement and base performance. This will allow borderline quality rock to be used more often, thereby reducing construction costs without forfeiting pavement life or durability.

Oregon State University and the Highway Division plan to work closely to ensure the study results are implementable by agency personnel. In about eighteen months, when the study is complete, another "Research Note" will be circulated explaining the findings of the study. In the meantime, if you would like more information on this research project, contact:

Oregon State Highway Division, Research Section, 1174 Chemeketa N.E., Salem, OR 97310; or, Transportation Research Institute, Department of Civil Engineering, Oregon State University, Corvallis, OR 97331.

The title of the project is: "Reliability of the DMSO (Dimethylsulfoxide) Method to Determine the Degradation Characteristics of Rock Used in Highway Construction."

SUMMARIES AND ABSTRACTS OF CURRENT HIGHWAY RESEARCH