

## GEOTEXTILE FABRICS UNDER ASPHALT CONCRETE OVERLAYS

December 1992

RSN 92-8

Generally, reflective cracking of pavement overlays is undesirable. The use of geotextile fabrics may reduce the cracking. However, the cost effectiveness of the use of geotextile fabrics under asphalt concrete overlays to reduce reflective cracking has not been substantiated.

Nationally<sup>1</sup>, the field performance of overlays with fabrics underneath has been variable (there are documented results of successes and failures). The variable performance appears to be related to type of existing pavement distress, overlay thickness, pavement strength, and climate. In general, fabric interlayers have performed best when used for load-related fatigue distress and have been ineffective when used to retard thermal cracking.

Oregon Department of Transportation (ODOT) staff have examined the performance of the asphalt concrete overlays over geotextile fabrics on Oregon highways. The results of the evaluations have been inconclusive. The overlays without geotextile fabrics have performed equal to overlays with geotextile fabrics. Consequently, ODOT staff has not been able to document that the use of geotextile fabrics under asphalt concrete overlays is cost effective.

Last year, the City of Portland decided to place geotextile fabrics under asphalt concrete overlays for pavement reinforcement and crack retardation. The City expected the following benefits from using the fabrics: retardation of reflective cracks, reduction of water infiltration into underlying cracks, retardation of vegetation growth in cracks, improvement of pavement surface quality, and reduction of future pavement maintenance costs. City staff will evaluate the cost effectiveness of the geotextile fabrics for five years.

In September 1991, the City of Portland placed Glasgrid and Polyguard geotextile fabrics on East Burnside Street. From this experience, recommendations regarding the placement of these fabrics were made including:

1. When placing small quantities of Polyguard or similar self-adhesive membrane with a protective plastic sheet and without a spreading machine, the roll should be set with the adhesive side face down, and the protective sheet removed as the fabric is rolled into position.
2. When placing quantities larger than those placed for this project, a spreading machine should be used for both types of fabric.

3. A leveling course is not necessary prior to placing the highly adhesive Polyguard membrane; however, thorough rolling with a rubber tired roller or normal traffic rolling in the traffic lanes should be required if no leveling course were applied.
4. A leveling course is essential prior to placing Glasgrid fabric. Rolling with a rubber tired roller should follow placement of Glasgrid, followed as quickly as possible with a final lift of pavement prior to opening the street to traffic.

Recently, a report for this research project was published titled "Geotextile Fabrics Under an Asphalt Concrete Overlay to Retard Reflective Cracking, Construction Report." To obtain a copy of this report or any additional information regarding this project, please contact the person listed below. In addition, an excellent reference titled "Fabrics in Asphalt Overlays and Pavement Maintenance," NCHRP SYNTHESIS 171, is available for loan to ODOT employees.

**Scott Nodes  
Oregon Department of Transportation  
Engineering Services Section  
Research Unit  
800 Airport Road S.E.  
Salem, OR 97310  
503-378-2318**

---

<sup>1</sup>Barksdale, Richard D. "Fabrics in Asphalt Overlays and Pavement Maintenance," NCHRP SYNTHESIS 171.